

# ***Executive Summary***

## ***E.S.1 Background, Purpose, Scope, Process, and Regulatory Context***

A Scoping Study prepared for the Coachella Valley Association of Governments (CVAG) by the Coachella Valley Mountains Conservancy (CVMC) in 1994 recommended that a Multiple Species Habitat Conservation Plan (Plan) be prepared for the entire Coachella Valley and surrounding mountains to address current and potential future state and federal Endangered Species Act issues in the Plan Area. (See Figures 1-1 and 1-2 in Section 1 for maps of the Plan Area and its regional context.) A Memorandum of Understanding (“Planning Agreement”) was developed to govern the preparation of the Plan. In late 1995 and early 1996, under the auspices of CVAG, the cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage; County of Riverside (County); U.S. Fish and Wildlife Service (USFWS); California Department of Fish and Game (CDFG); Bureau of Land Management (BLM); U.S. Forest Service (USFS); and National Park Service (NPS) signed the Planning Agreement to initiate the planning effort. Subsequently, Caltrans, Coachella Valley Water District (CVWD), Imperial Irrigation District (IID), Riverside County Flood Control and Water Conservation District (County Flood Control), Riverside County Regional Park and Open Space District (County Parks), Riverside County Waste Resources Management District (County Waste), California Department of Parks and Recreation (State Parks), and CVMC decided to participate in the Plan.

In late 1996 and early 1997, the Parties to the Planning Agreement approved an amendment stipulating that the Plan will meet the intent of the Natural Community Conservation Planning Act (NCCP Act) as well as the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA), and, further, that the Planning Agreement constitutes an agreement to prepare a Natural Community Conservation Plan (NCCP) as specified in California Fish and Game Code Section 2810.

The Plan and Final EIR/EIS were released in early 2006 for local jurisdiction approval. In June 2006, the City of Desert Hot Springs voted not to approve the Plan. The CVAG Executive Committee then rescinded its approval of the Plan and directed that the Plan be revised to remove Desert Hot Springs as a Permittee and reflect other project description modifications that had been suggested during public review. This recirculated Draft Plan implements that direction. Subsequent to the original approved Plan, the City of Desert Hot Springs and Mission Springs Water District became Permittees through a Major Amendment.

The Plan balances environmental protection and economic development objectives in the Plan Area and simplifies compliance with endangered species related laws. The Plan is intended to satisfy the legal requirements for the issuance of Permits that will allow the Take of species covered by the Plan in the course of otherwise lawful activities. The Plan will, to the maximum extent practicable, minimize and mitigate the impacts of the Taking and provide for Conservation of the Covered Species.

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The Plan has been prepared under the direction of CVAG, which contracted with CVMC for Plan preparation. A Project Advisory Group (PAG), composed of representatives of the Parties to the Planning Agreement; other public agencies, including CVWD and the University of California (UC); and private sector groups, including the Building Industry Association, the Sierra Club, The Nature Conservancy (TNC), the Center for Natural Lands Management (CNLM), and the Riverside County Farm Bureau, has provided a forum for input from an array of interests. All PAG meetings have been public meetings to provide an opportunity for public input. Public forums were held in 1998, 1999, and 2000, and special meetings and contact by mail have provided opportunities for potentially affected landowners to offer input into the planning process.

A Scientific Advisory Committee (SAC) provided technical expertise on biological issues. The SAC is made up of biologists from BLM, NPS, USFS, UC, initially TNC and subsequently CNLM, and CVWD, and one non-biologist who provided liaison with the PAG. USFWS and CDFG (Wildlife Agencies) have also attended most SAC meetings. A Geographic Information Systems (GIS) Team, composed of staff from BLM, CVAG, CVMC, and the County, has provided GIS services, including developing data layers, natural communities and species distribution mapping and modeling, gap analysis, and reserve design and corridor mapping.

The proposed term of the Permits is 75 years, which is the length of time required to fully fund Plan implementation. The acquisition program is projected to require 30 years to acquire all the Permittee obligation land. Full funding of the endowment for the Monitoring Program, the Management Program, Adaptive Management, and ongoing administration costs is projected to require 75 years

### ***E.S.2 Plan Area Profile***

The Coachella Valley is a broad, low elevation, northwest-southeast trending valley comprising the westernmost limits of the Sonoran Desert. It is located in the eastern portion of Riverside County, approximately 100 miles east of Los Angeles. Riverside County as a whole covers over 4,700,000 acres (7,310 square miles), making it California's fourth largest county and roughly equal in size to Connecticut.

The Plan Area boundaries were chosen to maximize inclusion of the Coachella Valley watershed. Portions of the watershed outside Riverside County or outside the jurisdictional boundaries of CVAG were not included in order to avoid institutional and administrative complexity. The Plan Area extends westward to Cabazon where it is bounded by the range line common to Range 1 East and Range 2 East. This is approximately the limit of the Sonoran or Colorado Desert in the San Gorgonio Pass area. The easternmost extent of the Plan Area is the range line common to Range 13 East and Range 14 East. Either the ridgeline of the Little San Bernardino Mountains or the boundary line with San Bernardino County where the ridgeline extends north of the county line bounds the Plan Area on the north. On the south, either the ridgeline of the San Jacinto and Santa Rosa Mountains or the boundary line with San Diego and Imperial Counties forms the Plan Area boundary. The Plan Area encompasses approximately 1.2 million acres. Of this, approximately 69,000 acres are Indian Reservation Lands, which are not included in the Plan, leaving a total of approximately 1.1 million acres addressed by the Plan.

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Based on census data, the average annual growth rate in the 1970s in the Plan Area was just over 4.1%. This rose to over 5.8% in the 1980s. The annual growth rate between 1990 and 2000 was approximately 3.4%. The rate is projected to decline thereafter to less than 3% per year according to the Southern California Association of Governments Regional Transportation Plan Growth Forecast. It should be noted, however, that the estimated increase in population remains significant after the year 2000, with nearly an anticipated 145,000 new people added between 2000 and 2020. That is more than the total population of the Plan Area in 1980.

The cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage lie within the Plan Area, principally on the floor of the Coachella Valley. Together their jurisdictions make up approximately 16% of the Plan Area. The remaining 84% of the Plan Area is unincorporated. Approximately 41% of the land covered by the Plan is privately held. Though not included in the Plan, Indian Reservations within the Plan Area include the Morongo, Agua Caliente, Santa Rosa, Cabazon, Twenty-Nine Palms, Torres-Martinez Band, and Augustine. The balance of the Plan Area is public land managed by various local, state, and federal agencies, including BLM, USFS, NPS, USFWS, Bureau of Reclamation (BOR), CDFG, State Parks, UC, CVMC, and special districts, and open space lands owned by the Cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage and the County.

Data derived from the Plan database indicate that approximately 6.0% of the Plan Area is currently urbanized, 1.0% is in rural development, 7.5% of the land is under agriculture, 0.5% has wind energy development on it, and 28.0% is vacant land under private or public non-conservation ownership. Of the remaining land in the Plan Area, 4.0% is covered by the Salton Sea, and 53.0% is public or Private Conservation Land.

While public land and Private Conservation Lands in some areas constitute large blocks of Habitat, in other areas the Habitat on public lands is fragmented by the checkerboard pattern of public lands and Private Conservation Lands with non-conservation private lands. The Conservation lands are not distributed in such a way as to provide adequate protection for all types of Habitat, or to protect Essential Ecological Processes for some Habitats, and Biological Corridors and Linkages for wildlife movement between major open space areas.

### ***E.S.3 Plan Development***

The conservation plan was developed in consultation with the SAC, using best available science. The SAC developed a methodology for use in assessing the relative biological value of lands within the Plan Area and the subsequent development of a Preferred Alternative conservation plan. The Peninsular bighorn sheep conservation strategy was primarily based on the *Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California* (USFWS 2000).

The Plan recognizes that there is inevitably an uncertainty factor in scientific information about biological systems. The Monitoring and Adaptive Management Program is designed to increase the level of knowledge about species covered by the Plan, conserved natural communities, ecological processes, and connectivity. Changes in management of the Conservation Areas, and

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minor boundary changes, could result from such increased knowledge. Any such changes would be consistent with the No Surprises Assurances Rule of USFWS and CDFG assurances.

The conservation planning process reflects the broadest goals of the Plan, which are:

- Represent native ecosystem types or natural communities across their natural range of variation in a system of conserved areas.
- Maintain or restore viable populations of the species included in the Plan so that Take Permits can be obtained for currently Listed animal species and Non-listed animal species can be covered in case they are listed in the future.
- Sustain ecological and evolutionary processes necessary to maintain the viability of the conserved natural communities and Habitats for the species included in the Plan.
- Manage the system adaptively to be responsive to short-term and long-term environmental change and to maintain the evolutionary potential of lineages.

The planning process consisted of the steps described below.

1. *Determine the species and natural communities to be included in the Plan.* The planning team developed the initial list of species and natural communities to be considered. The list was narrowed down through the planning process as described in Section 3.2.
2. *Gather information on the species and natural communities.* Information was gathered on individual species from the following sources: (1) existing information from the literature, including Environmental Impact Reports (EIRs) and other environmental documents, museum records, and other reports on species distribution and ecological requirements; (2) California Natural Diversity Data Base (CNDDDB) records; (3) presence/absence surveys for species about which more information was needed in selected areas where they have a probability of occurring and some potential to be protected; and (4) information and location maps provided by individual biologists. Information on the natural communities was gathered from: (1) the University of California at Santa Barbara Gap Map (2) LANDSAT satellite thematic mapping imagery, (3) color infrared aerial photographs, (4) blue-line aerial photographs of the Plan Area; (5) aerial photographs from 1939 and 1954 for historic natural communities, and (6) the CNDDDB and the Palm Springs Desert Museum for desert fan palm oases.
3. *Prepare accounts of individual species and natural communities.* These accounts summarize available information on species' life history, habitat and ecological requirements, overall range, distribution within the Plan Area, threats, and conservation needs. Similar accounts were prepared on the composition and distribution of natural communities, threats, and conservation needs.
4. *Gather other pertinent information.* Information was also gathered and entered into the GIS database regarding existing conservation lands, topography and other natural features, watersheds, ecological processes, roads, and current land uses. Information on projected land uses, parcel configuration, and political boundaries was also gathered for use in developing implementation measures.
5. *Prepare a Natural Communities Map.* A Natural Communities Map was prepared to delineate the distribution of the natural communities in the Plan Area. This information

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was used in (1) modeling species' habitat distribution, (2) developing the Site Identification Maps, and (3) evaluating whether adequate protection will be afforded to the conserved natural communities on which the Plan focuses pursuant to the NCCP Act.

6. *Analyze biological resource information to map species' distribution.* Species' Habitat distribution maps were prepared for all species except burrowing owl using known occurrences, Habitat associations based on the Natural Communities Map, and, where relevant, elevation ranges of the species, landform data, sand source data, and soils data. Consensus was then obtained as to the adequacy and accuracy of information about the distribution of species in the Plan Area. Models were prepared for species for which sufficient data existed to use in developing a model. For the burrowing owl only known location information was used in conservation planning.
7. *Develop Site Identification Maps.* Site Identification Maps were developed by mapping at the quarter-section level and analyzing data regarding species richness, natural community richness, habitat heterogeneity, and habitat fragmentation, and refining the resulting maps using information about Essential Ecological Processes necessary to sustain Habitats, Core Habitat, endemic species occurrences, and other pertinent information. The Site Identification Maps delineate the areas of highest biological resource value in the Plan Area. See Appendix I for a detailed description of the Site Identification process.
8. *Delineate Core Habitat areas, Essential Ecological Process areas, and Biological Corridors and Linkages.* For each of the species for which sufficient data were available, Core Habitat areas were delineated, defined as areas of unfragmented Habitat with intact Essential Ecological Processes large enough to sustain a viable population of the species. See Appendix I for additional information on this process. Areas needed to maintain Essential Ecological Processes to sustain Core Habitat, and Biological Corridors and Linkages were also identified.
9. *Develop Conservation alternatives.* Three Conservation alternatives were initially developed for consideration. Conservation Alternative 1 consisted of existing public lands and Private Conservation Lands only. This alternative was included to assess the extent to which Existing Conservation Lands would suffice to protect the Covered Species and the conserved natural communities included in the Plan. Based on the Site Identification Maps, Conservation Alternative 2 was developed to provide Core Habitat for the Covered Species, protect Essential Ecological Processes to sustain those Habitat areas, provide Biological Corridors among Conservation Areas, and conserve natural communities as functioning ecosystems. The Biological Corridors were intended to provide not only for movement of Covered Species, but also for other species, including coyotes, bobcats, mountain lions, and foxes, necessary to maintain predator-prey relationships, general biological diversity, and the opportunity for species adaptation in response to potential climate change. Conservation Alternative 3 included additional areas with potential Conservation value as Habitat, corridor, and ecological process areas. A statistical analysis of the Conservation alternatives was prepared to provide information about the acreage of Habitat protected for each species and natural community under each alternative. The statistical analysis provided quantitative information on species and natural community protection, which was useful in conjunction with the qualitative analysis conducted in Step 10 using the conservation criteria.

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10. *Develop and use criteria for evaluating the conservation alternatives.* Criteria were created to evaluate whether or not the Conservation Areas provide adequate protection for the species and natural communities on which the Plan focuses.
11. *Conduct Independent Science Advisors (ISA) Review.* During the course of the planning process, two workshops were held with leading conservation biologists Dr. Reed Noss, Dr. Michael Soulé, and Dr. C. Richard Tracy to get their input on the conservation plan. The ISA included the aforementioned conservation biologists as well as other scientists. (See Appendix I for additional information.) In early 2001, the ISA reviewed the work completed to date. In addition, a preliminary draft of a study titled Long-term Sand Supply to Coachella Valley Fringe-toed Lizard (*Uma inornata*) Habitat in the Northern Coachella Valley, California (United States Geological Survey 2000) was made available.
12. *Develop a Preferred Alternative.* The Conservation Area maps prepared by CVAG were discussed in a series of meetings among CDFG, USFWS, CVAG staff, and local jurisdictions to evaluate land use, and economic and biological considerations. Through this process, the proposed Conservation Areas were further refined and a preferred alternative was developed
13. *Delineate Conservation Goals and Objectives.* Conservation Goals and specific Conservation Objectives were developed for each Covered Species, natural community, Essential Ecological Process, Biological Corridor, and Linkage in the Conservation Areas to ensure that Conservation would be accomplished and that the tools for compliance monitoring were in place.

### **Covered Species and Conserved Natural Communities**

The Planning Agreement identified 52 species to be considered for inclusion in the Plan and targeted all the natural communities in the Plan Area. As information was gathered through the planning process, the Planning Team continuously reviewed the list. Other experts on individual species were also consulted. The 27 species ultimately included in the Plan are listed in Table 3-1 in Section 3 of the Plan. There are five plants, two insects, one fish, one amphibian, three reptiles, eleven birds, and four mammals.

The Planning Agreement listed 23 natural communities known to occur in the Plan Area. Through the planning process a total of 46 natural communities were identified in the Plan Area. Of these, 27 natural communities provide Habitat for the Covered Species and are the focal point for establishment of Conservation Areas. The natural communities included in the Plan's Conservation Areas are listed in Table 3-3 in Section 3 of the Plan. The other natural communities are not included in the Conservation Areas established under this Plan; however, with three exceptions, these other natural communities are already adequately protected in the Plan Area on public lands. The three exceptions that are not either currently protected or proposed for protection under this Plan are active shielded desert dunes, Riversidean desert scrub, and tamarisk scrub. Only a fragment of the active shielded desert dunes, surrounded by urbanization and shielded from Essential Ecological Processes, occurs in the Plan Area. Riversidean desert scrub is restricted to the San Geronio Pass in the Plan Area, where it occurs primarily on the Morongo Indian Reservation, which is not part of the Plan. It is more common in the western part of the County, where it is addressed in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Tamarisk scrub is not a "natural" community in that it is dominated by an exotic plant

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species, i.e. tamarisk. In areas where some tamarisk scrub is included in the Conservation Areas, the intent is to restore it to the appropriate natural community to the maximum extent practicable.

### **Conservation Alternatives Considered**

CEQA requires that a range of conservation alternatives be considered and Section 10(a)(2)(A)(iii) of FESA requires that an HCP analyze alternative actions which would not result in Take of Listed Species (animal species) or would reduce such Take below levels anticipated for the project proposal and state the reasons why such alternatives are not being utilized. In addition to the Plan itself, the conservation alternatives described below have also been considered.

***Conservation Alternative 1.*** This alternative includes all local, state, and federal agency land, and Private Conservation Land, in the Plan Area with Conservation Levels 1, 2, and 3. No new areas would be acquired for Plan purposes. As a result, sand transport, watershed, and other Essential Ecological Processes would not be adequately protected and Biological Corridors would not be conserved, and Core Habitat areas would be fragmented in many instances.

***Conservation Alternative 2.*** This alternative would establish Conservation Areas intended to protect Core Habitat for the Covered Species and conserved natural communities included in the Plan, Essential Ecological Processes necessary to sustain these Habitats, and Biological Corridors and Linkages. The Conservation Areas include most of the Conservation Alternative 1 lands as well as private lands essential for Core Habitat, Essential Ecological Processes, and Biological Corridors and Linkages. Based on comments in the ISA report, comments received from CDFG and USFWS, and additional information in the Long-term Sand Supply to Coachella Valley Fringe-toed Lizard (*Uma Inornata*) Habitat in the Northern Coachella Valley, California (United States Geological Survey, 2000), Conservation Alternative 2 was subsequently revised to develop the Preferred Alternative.

***Conservation Alternative 3.*** This alternative expanded on Conservation Alternative 2 by including all additional areas that were recommended for further consideration by USFWS and CDFG in their response to the Site Identification Maps. This alternative would result in less Take than the Preferred Alternative; however, it was determined that this alternative was not Feasible based on representations from various Local Permittees and analysis of land ownership patterns.

***Conservation Alternative 4.*** In their joint letter dated April 17, 2000, the Wildlife Agencies recommended inclusion of an alternative that "fully protects those areas encompassed by the current composite modeled distribution and known locations of target species in the Plan Area." By seeking to protect all Habitat for the Covered Species in the Plan, this alternative would result in a significant reduction in Take Authorization and significant increase in costs. Thus, Conservation Alternative 4 was determined to not be feasible and was not analyzed further.

***No Project Alternative.*** The No Project Alternative entails no Plan being developed and no Permits issued. Individual projects would have to seek their own Incidental Take Permits or avoid Incidental Take by not developing portions of the project site that would result in Take of a listed species (animal species). The No Project Alternative is likely to be incapable of conserving certain Essential Ecological Processes, particularly the fluvial sand deposition and aeolian transport areas, which are necessary to support occupied Habitat by Covered Species in the dunes and other blowsand Habitats. There would not be a coordinated system of Biological Corridors

and Linkages provided to connect Conservation Areas and the ability to provide Linkages through project by project mitigation may be precluded over time through continued Development. Further, the No Project Alternative would not provide protection for non-listed species or for natural communities that do not provide Habitat for Listed Species. Over time, Non-listed species would likely become listed, thereby increasing regulatory burdens and difficulty for Development.

## ***E.S.4 Establishment of the MSHCP Reserve System***

The Conservation Plan includes the establishment of an MSHCP Reserve System, setting Conservation Objectives to ensure the Conservation of the Covered Species and conserved natural communities in the MSHCP Reserve System, provisions for management of the MSHCP Reserve System, and a Monitoring Program, and Adaptive Management. The MSHCP Reserve System will be established from lands within 21 Conservation Areas. Because some Take Authorization is provided under the Plan for Development in Conservation Areas, the actual MSHCP Reserve System will be somewhat smaller than the total acres in the Conservation Areas. When assembled, the Reserve System will provide for the Conservation of the Covered Species in the Plan Area.

For each Conservation Area, Conservation Objectives are articulated for conserving Core Habitat for Covered Species, Essential Ecological Processes necessary to maintain Habitat viability, Biological Corridors and Linkages as needed, and the less common conserved natural communities. Core Habitat has not been delineated for all species. Where it has not been delineated, Conservation Objectives are stated for either acres of Habitat or known occurrences.

The MSHCP Reserve System will be established within 21 Conservation Areas from the following components:

- Existing Conservation Lands, managed by local, state, or federal agencies, or non-profit conservation organizations
- Complementary Conservation
- Additional Conservation Lands

The MSHCP Reserve System will be assembled as shown below:

<b>1996</b>	<b>2006</b>	<b>Lands</b>
458,800	484,600	Existing federal lands in MSHCP Reserve System <sup>1</sup>
32,700	44,600	Existing state lands in MSHCP Reserve System
900	19,100	Existing non-profit organization lands in MSHCP Reserve System <sup>2</sup>
4,000	8,800	Existing Local Permittee Conservation lands in the MSHCP Reserve System
<b>496,400</b>	<b>557,100</b>	<b>SUBTOTAL</b>
69,290	29,990	Acres of Complementary Conservation



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39,850	21,390	Acres to be acquired by state and federal agencies
7,700	7,700	Additional Local Permittee acres for which there will be cooperation to conserve
93,100	88,900	Acres to be acquired or otherwise conserved by the Local Permittees
10,800	10,800	Non-Permittee public and quasi-public lands
7,800	7,800	Fluvial sand transport area where the Conservation Objective is met through non-acquisition. Development consistent with Conservation Objectives is allowed. <sup>3</sup>
<b>228,540</b>	<b>166,580</b>	<b>SUBTOTAL - COMPLEMENTARY CONSERVATION AND ADDITIONAL CONSERVATION LANDS</b>
22,660	22,420	Potential Development within Conservation Areas from Table 5-1.
<b>747,600</b>	<b>746,100</b>	<b>TOTAL – CONSERVATION AREAS</b>

<sup>1</sup> The acreage includes lands purchased by non-profit organizations and donated to federal agencies.

<sup>2</sup> The acreage includes lands owned by non-profit organizations but acquired with State grant funds or local funds.

<sup>3</sup> These acres are in the Cabazon, Long Canyon, and West Deception Canyon Conservation Areas.

Implementation of the Plan must ensure that the Conservation Objectives delineated for each Conservation Area are achieved. Implementation relies on cooperation among all the signatories to the IA, including local, state, and federal agencies. Assembly of the MSHCP Reserve System is a necessary component of Plan implementation.

**Existing Conservation Lands within Conservation Areas**

The Conservation Areas contained approximately 496,400 acres of Existing Conservation Lands as of 1996. By November 2006, this had increased to approximately 557,100 acres. These are lands in public or private ownership that are managed for Conservation and/or open space values, and which contribute to the Conservation of the Covered Species and the conserved natural communities included in the Plan. Federal lands within the MSHCP Reserve System that will contribute to the Conservation of the Covered Species include lands administered by the BLM, BOR, NPS, USFWS, and USFS. State lands within the MSHCP Reserve System that will contribute to the Conservation of the Covered Species include lands administered by the CDFG, State Parks, CVMC, and UC. The federal and state Existing Conservation Lands are summarized in Table 4-2 in Section 4.1. The Local Permittees will cooperate to conserve identified Local Permittee-owned land in perpetuity in the MSHCP Reserve System. The existing Local Permittee and CVFTL HCP Mitigation Lands and their status are summarized in Table 4-3 in Section 4.1. Various non-profit conservation organizations own land in the MSHCP Reserve System, which they acquired for conservation purposes. CVCC will seek agreements with these non-profit organizations to ensure the permanent Conservation and management of these lands pursuant to the Plan, including providing access to the property for biological monitoring and management purposes. Non-profit conservation organization Existing Conservation Lands are shown in Table 4-4 in Section 4.1.

The Existing Conservation Lands include the CVFTL Preserve system established pursuant to the CVFTL HCP, approved in 1986. Three preserves were established: Coachella Valley

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(Thousand Palms), Whitewater River Floodplain, and Willow Hole-Edom Hill. As described in Section 16.2 of the IA, it is the Parties' intent that the lands acquired under the CVFTL HCP will be subsumed into and managed as part of the MSHCP Reserve System. The Coachella Valley fringe-toed lizard is a Covered Species under the MSHCP.

### **Complementary Conservation**

Several acquisition efforts for conservation purposes pre-date the MSHCP, and are ongoing efforts expected to conserve approximately 29,990 acres in the MSHCP Reserve System from November 2006 on. These include BLM and USFS acquisition programs in the Santa Rosa and San Jacinto Mountains National Monument, BLM Wilderness inholdings acquisitions, and inholdings acquisitions in Joshua Tree National Park. These acquisition programs pre-date the MSHCP, have broader rationales than the MSHCP program, and are independent of the MSHCP effort. They complement implementation of the MSHCP, but are not a Permittee obligation for purposes of the authorization of Take.

### **Additional Conservation Lands**

A minimum of 129,690 acres in the Conservation Areas will be conserved as Additional Conservation Lands, to be acquired or otherwise conserved through state and federal acquisitions and Permittee contributions. The Local Permittees will also protect the fluvial sand transport Essential Ecological Process on approximately 7,800 acres in the Cabazon, Long Canyon, and West Deception Canyon Conservation Areas through application of general plan land use designations and policies, and flood control guidelines.

Through the MSHCP and its IA, the federal and state governments have agreed to partner with the Local Permittees in assembling, managing, and monitoring Reserve Lands. The federal and state governments will acquire approximately 21,390 acres of privately owned lands (this federal and state obligation is beyond any mitigation obligations for Development authorized by Local Permittees pursuant to the Plan) in the Conservation Areas after November 2006, as well as manage certain federal and state Existing Conservation Lands in the MSHCP Reserve System, and participate in the Monitoring and Adaptive Management Program for Reserve Lands. The Permittees (Local and State) have an obligation to conserve approximately 115,340 acres in the Conservation Areas through:

- Conservation of 7,700 acres of currently non-conserved Local Permittee-owned lands. [See *Section 4.2.2.2.1.*]
- Conservation of 88,900 acres of Additional Conservation Lands by the Local Permittees and Caltrans through acquisition or other means, such as planning tools and land use regulation, and acquisition of 640 acres by State Parks (after 1996), of which 100 acres can be developed for State Park facilities. [See *Section 4.2.2.2.2.*]
- Management of 18,200 acres of Permittee Existing Conservation Lands consistent with the MSHCP. [See *Section 4.2.2.2.3.*]

In addition, the Permittees will maintain the fluvial sand transport Essential Ecological Process in the Cabazon, Long Canyon, and West Deception Canyon Conservation Areas as described in Section 4.2.2.2.4.

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In addition to acquisition, land in the Conservation Areas may be conserved through dedication, deed restriction, or granting of a conservation easement in conjunction with Development approvals and conservation incentives. Habitat conserved through planning tools and land use regulation shall be protected, prior to issuance of a grading permit, by fee title transfer, granting a conservation easement to CVCC or other approved entity, or recordation of a deed restriction. Rights of access for monitoring and management of the lands by CVCC, the Wildlife Agencies, or their designees shall be provided.

### **Conservation Areas**

The Plan will result in the establishment of the MSHCP Reserve System, assembled from lands within 21 Conservation Areas, which, combined with the Monitoring Program and the Management Program, are designed to achieve the following Conservation Goals:

1. Represent native ecosystem types or natural communities across their natural range of variation in a system of conserved areas.
2. Maintain or restore self-sustaining populations or metapopulations of the species included in the Plan to ensure permanent Conservation so that Incidental Take Permits can be obtained for currently Listed animal species and Non-listed animal species can be covered in case they are listed in the future.
3. Sustain ecological and evolutionary processes necessary to maintain the functionality of the natural communities and Habitats for the species included in the Plan.
4. Maximize connectivity among populations and avoid habitat fragmentation within Conservation Areas to conserve biological diversity, ecological balance, and connected populations of Covered Species.
5. Minimize adverse impacts from off road vehicle use, illegal dumping, edge effects, exotic species, and other disturbances in accordance with the Management and Monitoring Programs.
6. Manage the Conservation Areas adaptively to be responsive to short-term and long-term environmental change and new science.

### **Required Avoidance, Minimization, and Mitigation Measures**

The Plan includes certain requirements for Covered Activities in the Conservation Areas to avoid, minimize, and mitigate impacts to bighorn sheep Habitat, Biological Corridors, burrowing owl, covered riparian bird species, crissal thrasher, desert tortoise, fluvial sand transport, Le Conte's thrasher, mesquite hummocks and mesquite bosque natural communities, triple-ribbed milkvetch, Palm Springs pocket mouse, and Little San Bernardino Mountains linanthus. These measures do not apply to single-family homes and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot. The measures have limited application to O&M activities. To assist Permittees with implementation of these measures, CVCC will maintain maps of modeled Habitat and a Natural Communities Map and provide them to each of the Permittees. CVCC will also maintain a list of Acceptable Biologists who may be used to conduct surveys for specified Covered Species. CVCC will also maintain a list of survey protocols approved by either or both CDFG and USFWS.

**Land Use Adjacency Guidelines**

The purpose of the Land Use Adjacency Guidelines is to avoid or minimize indirect effects from Development adjacent to or within the Conservation Areas. Such indirect effects are commonly referred to as edge effects, and may include noise, lighting, drainage, intrusion of people into the adjacent Conservation Area, and the introduction of non-native plants and non-native predators such as dogs and cats. Edge effects will also be addressed through reserve management activities such as fencing.

**Anticipated Take and Habitat Loss**

Anticipated Take for Covered Species for which Habitat distribution models have been developed is measured in terms of Habitat acres affected by the Covered Activities both outside and within the Conservation Areas. For purposes of this calculation, it is assumed that all non-federal lands outside the Conservation Areas may be subject to Take. This represents a worst-case scenario, and Take or Habitat loss at that level is not likely to occur within the 75-year term of the Take Permits. The acres of Take or Habitat loss were determined by overlaying Habitat maps with the Plan Area map, and calculating the Habitat areas outside the Conservation Areas. In addition, a small percentage of Take can occur within the Conservation Areas under the Plan. The amount of such Take or Habitat loss has been calculated for each species and natural community and is shown in the tables in *Section 4.6*.

***E.S.5 Costs of and Funding for Plan Implementation***

**Costs for Plan Implementation**

Plan implementation costs include the direct and indirect costs associated with land acquisition, the Monitoring Program, and the Management Program. Additional costs include staff costs associated with Plan administration. Cost projections are intended to provide a realistic estimate of the costs for Plan implementation. This also assists the Wildlife Agencies in determining if the Plan meets Permit issuance criteria. The actual costs over time may turn out to be more or less than those projected in this Plan.

As shown in Table 5-1, Conservation through acquisition and other means that needed to occur as of November 2006 for Reserve System Assembly was 159,680 acres. As described in Section 4.2, 29,990 acres of this is projected to occur through Complementary Conservation, leaving a balance of 129,690 acres. Of this, 10,800 acres are public-quasi public lands belonging to non-Permittees. As explained in Section 4.2.2.3, the Plan does not provide Take Authorization for activities on these lands and assumes that this acreage will be conserved through other means, which are not an obligation of the Permittees. That leaves a balance of 118,890 acres, of which 21,390 acres will be conserved by state and federal agencies as their Plan implementation contribution (this federal and state obligation is beyond any mitigation obligations for Development authorized by Local Permittees pursuant to the Plan). This includes 640 acres of acquisition by State Parks, of which 100 acres can be developed for State Park facilities, as one of

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its mitigation obligations as a Permittee. In addition to State Parks’ acquisition, the Permittees will conserve an additional 97,500 acres through acquisition or other means. Of this, 7,700 acres are already owned by Permittees and that acreage will be conserved through the Plan. Thus the Permittees will acquire or otherwise conserve 90,000 acres as of November 2006. For purposes of estimating the maximum Plan implementation costs, it is assumed that all the approximately 90,000 acres to be conserved by the Local Permittees will be purchased. The actual acreage acquired by the Local Permittees could be less if some land is conserved through conditions of approval on Development or other means.

The projected Permittees’ costs for Plan implementation are shown in the following tables:

***Summary of Permittees’ Expenditures and Balances over the 75-Year Term of the Permits***

<b><i>Amount</i></b>	<b><i>Item</i></b>
\$115,414,000	Non-acquisition program administration costs (from Table 5-3b)
\$254,294,000	Monitoring Program (from Table 5-3b)
\$221,252,000	Management Program (from Table 5-3b)
\$14,903,000	Adaptive Management (from Table 5-3b)
\$526,705,000	Land acquisition costs (from Table 5-3c 1)
\$9,080,000	Land improvement costs (from Table 5-3c)
\$24,565,000	Acquisition program administrative costs (from Table 5-3c)
\$5,000,000	Management Contingency Fund (from Table 5-3b)
<b>\$1,171,213,000</b>	<b>TOTAL Expenditures</b>
\$860,741,000	Endowment Fund balance in Year 75 (from Table 5-3d)
\$5,386,000	Fund balance in Operating Fund in Year 75 (from Table 5-3b)
\$1,200,000	Repayment of Conservation Trust Fund advance to complete Plan
<b>\$2,038,540,000</b>	<b>TOTAL</b>

In addition to the Permittees’ monitoring and management responsibilities described in the preceding sections, CVWD and MSWD have additional responsibilities, the costs of which are not included in the cost and revenue projections presented in Section 5. CVWD is required to fund the costs of the following:

- Establishing and providing a permanent water source for permanent Habitat for the California black rail and Yuma clapper rail in the Coachella Valley Stormwater Channel and Delta Conservation Area. See Section 4.3.20.
- Establishing and providing a permanent water source, as needed, for riparian Habitat for Covered riparian bird Species in the Coachella Valley Stormwater Channel and Delta Conservation Area. See Section 4.3.20.
- Establishing and providing a permanent water source for desert pupfish Habitat, and developing and implementing a monitoring and adaptive management program for desert pupfish in the agricultural drains and flood control channels. See Section 4.3.20.
- Restoring and enhancing mesquite and Coachella Valley round-tailed ground squirrel Habitat on CVWD land in the East Indio Hills Conservation Area if a study undertaken by

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the CVCC demonstrates the feasibility of mesquite restoration, and providing water, as needed, for maintaining the mesquite once established. See Section 4.3.15.

As a signatory to the IA, MSWD will be responsible for the costs of implementing the following:

- Providing funds to be used for water monitoring wells or other means of gathering data on groundwater levels related to mesquite hummocks, to enhance understanding of the hydrological regimes that support mesquite hummocks in the CVMSHCP area and provide baseline data for the ongoing monitoring of mesquite hummocks. See Section 6.6.1.
- Providing funds to CVCC to be used for the removal of non-native tamarisk from the Willow Hole Conservation Area, to improve the water available to mesquite hummocks. See Section 6.6.1.
- Contributing to and participating in research conducted by CVCC to evaluate the relationship between mesquite hummocks and groundwater through the Monitoring Program. MSWD will contribute to and participate in this research for the mesquite hummock areas within their district boundary. See Section 6.6.1.
- Working with CVCC, the Wildlife Agencies, and other relevant Permittees to identify and implement a plan to enhance, restore, and maintain the mesquite hummocks natural community and to address changed circumstances, identified in the CVMSHCP, that affect this natural community as a part of their CVMSHCP implementation activities. See Section 6.6.1.

### **Funding for Plan Implementation**

To accomplish the acquisition program in 30 years and fund the Monitoring Program and the Management Program endowment in 75 years, the Permittees will use a combination of annual revenues and debt financing in the form of the issuance of revenue bonds. This would provide the necessary funding for acquisition and establishment of the endowment in advance of the collection of all the revenue needed for those purposes.

The Permittees and the Wildlife Agencies will annually evaluate the performance of the funding mechanisms and, notwithstanding other provisions of the Plan, will develop any necessary modifications to the funding mechanisms to address additional funding needs. If deficiencies are identified through this evaluation, then the Permittees and the Wildlife Agencies will develop strategies to address any additional funding needs consistent with the terms and conditions of the Plan. The funding plan is intended to keep the rate of Conservation of Permittee Additional Conservation Lands roughly proportional with the amount of Development occurring in the Plan Area.

***Summary of Revenue Sources***

<b><i>Amount</i></b>	<b><i>Revenue Source</i></b>
\$516,802,000	Local Development Mitigation Fee (from Table 5-3c)
\$227,604,000	Conservation Trust Fund (from Table 5-3b)
\$31,077,000	Regional Road Projects Mitigation (Measure A Sales Tax total contribution to acquisition and endowment; and freeway interchange/associated arterials contribution to endowment)
\$60,318,000	Regional Infrastructure Mitigation (Caltrans, CVWD, IID, and MSWD contributions to acquisition and endowment)
\$247,500,000	Eagle Mountain Environmental Mitigation Trust Fund (from Table 5-3b)
\$3,200,000	Transfer from CVFTL HCP Endowment
\$952,149,000	Interest on Investments (from Tables 5-3b, 5-3c, and 5-3d; interest generated on money in the Operating Fund, the Land Acquisition and Improvement Fund, and the Endowment Fund)
<b><i>\$2,038,540,000</i></b>	<b><i>TOTAL Revenues</i></b>

If at the end of any five (5) year period the “rough proportionality” test has not been met, the Local Permittees and the Wildlife Agencies will meet within ninety (90) days to begin to develop a strategy to address the need for a balance between Conservation and Development.

Maintaining the Permits does not depend on the state and federal governments’ adhering to any specific schedule for land acquisition, nor on any specific appropriations to state and federal agencies for land management. State and federal agencies, including BLM, USFS, NPS, USFWS, Wildlife Conservation Board (WCB), CDFG, and CVMC, may receive funds from a variety of sources to implement their obligations under the Plan. Potential state and federal funding sources include, but are not limited to:

- State appropriations
- Federal Land and Water Conservation Fund
- Land exchange
- State Bond Acts
- FESA Section 6 funds.

## ***E.S.6 Plan Implementation***

### **Organizational Structure**

Implementation of the Plan will be overseen and administered by the Coachella Valley Conservation Commission (CVCC), a joint powers authority formed by the Local Permittees pursuant to the requirements of the California Government Code and other appropriate legal authorities. CVCC shall sign the IA and shall be a Permittee under the Permits. CVAG shall organize the first meeting of CVCC representatives who will formally establish CVCC and adopt its by-laws consistent with all applicable legal requirements. CVCC is comprised of members of the Riverside County Board of Supervisors, an elected official from each of the Cities, and a

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member of the Board of Directors of CVWD, IID, and MSWD. Each of these entities may also designate an alternate, who shall also be an elected official. Each voting member of CVCC shall have one vote at meetings of CVCC. CVCC shall provide the policy direction for the implementation of the MSHCP and will provide opportunities for public participation in the decision-making process. The duties of CVCC and its Executive Director are enumerated in Sections 6.1.1.2 and 6.1.1.3.

To assist in implementing its duties under the MSHCP, CVCC shall form an Acquisition and Funding Coordinating Committee to provide input on funding priorities and Permittee acquisitions. Acquisitions will be only from a willing seller at market value as determined by an appraisal.

The Reserve Management Oversight Committee (RMOC) is the primary inter-agency group that will coordinate implementation of the conservation plan. The RMOC shall report to CVCC and shall be assembled within one hundred twenty (120) days of the issuance of the Permits. CVCC shall appoint the chair of the RMOC from among those listed below. The RMOC shall be composed of, at a minimum, one representative each from BLM, CDFG, State Parks, CVCC, USFWS, County, and up to five other private or public entities that hold land dedicated to Conservation within the MSHCP Reserve System as appointed by CVCC. NPS and USFS will be *ex officio* members. The duties of the RMOC are set forth in Section 6.1.3.

Within one hundred twenty (120) days of the issuance of the Permits, a Reserve Management Unit Committee (RMUC) shall be established by CVCC for each of the Reserve Management Units (RMUs), which are geographic areas within the MSHCP Reserve System where coordinated management by different entities is needed to achieve the Conservation Objectives. RMUs consist of one or more Conservation Areas and were identified based on ownership and natural community patterns and similarities of anticipated management needs. Six RMUs have been designated and are described in Section 6.1.4. A Land Manager, as identified in Section 6.1.5, shall represent CVCC and the Local Permittees, on the RMUCs. Through the Land Manager's participation in the RMUCs, CVCC will ensure that management of Local Permittee Mitigation Lands is consistent with the Plan Conservation Goals and Objectives. Through the RMUCs, CVCC will also seek to coordinate land management with the other entities that manage conservation land in the RMUs to optimize the management of all conserved land. The RMUCs' duties and responsibilities are described in Section 6.1.4.

The CVCC is responsible for Monitoring Program Administration. Final responsibility will rest with the CVCC Executive Director. The Executive Director may appoint a staff member as his or her designee for purposes of overseeing Monitoring Program Administration, but ultimate responsibility will remain with the Executive Director. Day to day responsibility for Monitoring Program Administration will be part of the contract for the Monitoring Program, and a specific individual will be identified by the contractor as the Monitoring Program Administrator (MPA). That individual will report to the CVCC Executive Director or his/her designee. To ensure that Monitoring Program Administration is adequately addressed the CVCC shall consult with the Wildlife Agencies regarding the provisions for the MPA in developing the Request for Proposals for the Monitoring Program contract.

CVCC or its designee shall work with the RMUCs to develop a MSHCP RMU Plan (RMUP) for review and approval by the RMOC to define specific management actions, schedules, and responsibilities. The RMUP shall be prepared within three years after Permit issuance, and



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may be composed of a series of coordinated plans for each of the RMUs. The RMUP shall incorporate the general management measures and Adaptive Management activities in Section 8 with appropriate refinements. The RMUP shall generally contain the following elements:

### **Annual Reporting**

To ensure that the Permittees are in compliance with the Plan, there will be an Annual Report prepared by CVCC and submitted to the Wildlife Agencies and Permittees. The Annual Report will include an overview of the status of the Conservation Areas; results of the Monitoring Program and the Management Program, identification of Adaptive Management actions, and whether or not such actions were implemented; a description of reserve management activities for the previous year; and an accounting of the number of acres acquired (in fee or conservation easement), conserved through MOUs for cooperative management, or otherwise protected during the previous year to achieve identified Conservation Objectives; an evaluation of any significant issues encountered in Plan implementation during the previous year and their proposed resolution; expenditures for acquisition and Reserve Lands management over the previous year and applicable budgets for the upcoming fiscal year; and a summary of compliance activities required of Permittees such as adoption of ordinances, general plan changes, etc. This information will be used to delineate the progress made toward achieving each of the Plan's Conservation Goals and Objectives and to demonstrate that the Species Conservation Goals and Objectives remain achievable.

### **Rough Step and Rough Proportionality Analyses**

The MSHCP Reserve System will be assembled over time and, when assembly is completed, must be in a configuration, and contain suitable Habitats (both location and acres), that provide for the Conservation of Covered Species. Acquisition is an essential component of Reserve System Assembly. As the Additional Conservation Lands are acquired, the Parties and the public must be able to determine that:

1. Lands being conserved within the Conservation Areas achieve the Conservation Goals and Objectives for Covered Species;
2. Development on lands within the Conservation Areas is not substantially reducing the opportunity to conserve the Additional Conservation Lands and thereby protect those areas that are critical to meeting Covered Species and natural community Conservation Goals and Objectives; and
3. Acquisition priorities at any point in time are appropriately focused on conserving parcels within the Conservation Areas needed to meet Covered Species and conserved natural communities Conservation Goals and Objectives.

To assist the Parties in this evaluation, there will be an annual Rough Step analysis conducted by the CVCC for each Conservation Area. The annual Rough Step analysis will be done for each Conservation Objective. In addition, a real-time Rough Step analysis will be prepared for a Conservation Area whenever a Development is proposed in that Conservation Area. Rough Step analysis ensures, on an annual basis, that Conservation of Additional Conserved Lands is within 10% of the level needed to stay in balance with the level of Development. If the Rough Step rule is not met during any analysis period, the Permittees must conserve appropriate lands necessary to

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meet a specific Conservation Objective within the Rough Step Analysis Unit to bring the Plan back into the parameters of the rule prior to authorizing additional loss of the Core Habitat, Essential Ecological Process area, Biological Corridor or Linkage, or natural community for which the rule was not achieved.

### **Obligations of the Permittees**

The Local Permittees will conserve 96,400 acres (inclusive of Caltrans' obligation) in the Conservation Areas. Of this, 7,700 acres are already owned by Permittees and that acreage will be conserved through the Plan. The Local Permittees shall establish an endowment to fund the Monitoring and Management Programs for those lands in perpetuity. The Local Permittees shall also fund an endowment for the Monitoring and Management Programs. The Local Permittees must also comply with all other terms and conditions of the MSHCP, including, but not limited to ensuring achievement of the Plan's Conservation Objectives in each Conservation Area and attainment of the Species Conservation Goals and Objectives, ensuring that Habitat preservation is occurring in rough proportionality with Development and that Reserve Assembly occurs as contemplated in the MSHCP; and imposing adopted Local Development Mitigation Fees.

For purposes of overseeing compliance with the requirements of the MSHCP and the IA, a Joint Project Review Process shall be instituted by CVCC. This process shall in no way limit the Local Permittees' land use authority. The purpose of the Joint Project Review Process is to allow CVCC to facilitate and monitor implementation of the MSHCP. CVCC staff shall participate in the Joint Project Review Process to ensure consistent Plan implementation and oversight. CVCC shall have neither jurisdiction over land use decisions by Permittees, nor the authority to prevent a Permittee from approving a project. The application will not be deemed complete by the Permittee prior to completion of CVCC Joint Project Review Process. The review process is described in Section 6.6.1.1.

To mitigate the impacts of the interchange and related arterial projects identified in Section 7.2.1, Caltrans, CVAG, and CVCC will acquire 1,795 acres in Conservation Areas in accordance with the mitigation matrix shown in Section 6.2 of Appendix I to contribute to Plan implementation and contribute \$1,077,000 to the endowment for the Monitoring Program, Management Program, and Adaptive Management of those lands. To mitigate the impacts of those transportation projects identified as Covered Activities in Section 7.2.3, CVAG shall contribute \$30 million from Measure A or other funds toward acquisition and the Monitoring Program, the Management Program, and Adaptive Management. If the Permits issued in conjunction with the Plan are ever suspended or revoked, these transportation projects will, as described in the IA, be mitigated through the establishment of a conservation bank that incorporates and recognizes the contributions made by CVAG to Plan implementation as adequate mitigation for the projects.

The State Permittees are Caltrans, CVMC, and State Parks. Caltrans' obligations under the Plan include: (1) not later than in three phases in 2005, 2010, and 2015 acquire and convey to CVCC or provide sufficient funding to the CVCC to acquire 5,791 acres of Additional Conservation Lands in the Conservation Areas as a contribution to Plan implementation for Caltrans' Covered Activities; (2) not later than in 2011 provide \$7.6 million to CVCC for the monitoring, management, and Adaptive Management of the approximately 5,791 acres referenced above; and (3) implement all applicable avoidance, minimization, and mitigation measures

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identified in Section 4.4 for Caltrans' Covered Activities, and comply with Land Use Adjacency Guidelines set forth in Section 4.5, where applicable.

CVMC will cooperate with CDFG and other agencies as appropriate to ensure management and monitoring of the approximately 2,600 acres of CVMC Existing Conservation Lands and any additional lands CVMC acquires in the Conservation Areas.

State Parks will participate as a member of the RMUC for RMUs within which State Parks manages lands; provide for the management and monitoring of the 6,800 acres of State Parks Existing Conservation Lands in the MSHCP Reserve System and any additional lands it acquires in the Conservation Areas; and implement all applicable avoidance, minimization, and mitigation measures identified in Section 4.4 for State Parks' Covered Activities, and comply with Land Use Adjacency Guidelines set forth in Section 4.5, where applicable.

### **Review of State Permittee Projects within the Conservation Areas**

The Wildlife Agencies and the appropriate State Permittee shall jointly review proposed State Permittee projects that are within the Conservation Areas. State Permittees shall submit project information to the Wildlife Agencies and CVCC, including, at a minimum, a project description and a concept map indicating the location of the proposed project. The Wildlife Agencies or State Permittee may schedule a meeting to discuss a proposed project. CVCC shall be invited to participate in this meeting.

### **Actions by Federal and State Governments**

The Wildlife Agencies will contribute to Plan implementation by monitoring and managing their lands in the Conservation Areas in a manner consistent with achieving the Plan's Conservation Goals and Conservation Objectives. The Wildlife Agencies will participate in a coordinated Biological Monitoring Program, and will facilitate ecological research or restoration activities by other entities on federal and state lands that benefit MSHCP resources. The Wildlife Agencies will acquire Additional Conservation Lands in the Conservation Areas. The Wildlife Agencies will review the Annual Report prepared by CVCC and will meet annually with Local Permittees to discuss progress in implementing the Plan. The Wildlife Agencies will expeditiously review proposed boundary adjustments and Plan or Permit amendments, and expeditiously determine conservation measures needed and conservation responsibilities for newly Listed Species and species proposed for listing that are not on the Covered Species list.

### **Time Frame for Implementation**

The Permits will be for a 75-year term. The MSHCP Reserve System will be assembled as described in Section 4.2. The non-acquisition components of MSHCP Reserve System Assembly will be ongoing for the life of the Plan. The acquisition component of Reserve System Assembly is anticipated to occur in the first 30 years of the Permits. The rate at which land in the Conservation Areas is acquired will depend on the availability of funds and Development patterns. Rough proportionality will be maintained between Conservation and Development. If the Local Permittees do not maintain the rough proportionality between Development and Conservation, the Wildlife Agencies, CVCC and other applicable Local Permittees shall meet to discuss potential actions to meet the Plan's rough proportionality requirements. In the event that these Parties do

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not reach agreement on such potential actions, the Wildlife Agencies may initiate revocation or suspension of all or part of the Permits as set forth in Section 23.5 of the IA.

### **Assurances for Unforeseen and Changed Circumstances**

In accordance with the Habitat Conservation Plan Assurances Rule (No Surprises Rule; 63 Federal Register 8859, as codified in 50 C.F.R. Sections 17.3, 17.22[b] and 17.32[b]), it is acknowledged that the purpose of the Coachella Valley MSHCP is to provide for the Conservation of Covered Species and the mitigation, minimization and compensatory measures required in connection with Incidental Taking of the Covered Species in the course of otherwise lawful and permitted activities within the MSHCP Plan Area. Accordingly, except as otherwise required by law and/or provided under the terms of the MSHCP and except for Unforeseen Circumstances, no further mitigation or compensation shall be required by the USFWS to address impacts of Covered Activities undertaken by the Permittees, entities with Third Party Take Authorization, and Participating Special Entities, pursuant to FESA. Pursuant to 50 Code of Federal Regulations (C.F.R.), Sections 17.22(b)(5) and 17.32(b)(5), the USFWS shall not require from the Permittees, entities with Third Party Take Authorization, Participating Special Entities, or other individuals or entities receiving Take Authorization under the Permits 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 pursuant to the Coachella Valley MSHCP, provided that the Permittees are properly implementing the Plan, the IA and the Permits. 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 shall be restricted to modification of the management of the Additional Conservation Lands, and shall be the least burdensome measures available to address the Unforeseen Circumstances. Unforeseen Circumstances are defined and described in Section 6.8.1.

### **Changed Circumstances**

Changed Circumstances are defined under the Federal “No Surprises” rule as “changes in circumstances affecting a Covered Species or geographic area covered by a conservation plan, including the MSHCP, or agreement that can reasonably be anticipated by plan or agreement developers and USFWS and that can be planned for.” Changed Circumstances potentially affecting the MSHCP Reserve System are defined as future events for which it is reasonably foreseeable that such an event may occur during the life of the MSHCP Permit, and that such an event may negatively affect the Covered Species and/or their associated Habitat within the MSHCP Reserve System. Changed Circumstances addressed by the MSHCP include drought, fire, invasion by exotic species, lowering of the water table, and new listings of species not covered by the Plan. These are described in detail in Section 6.8.3.

Pursuant to the No Surprises Rule at 50 C.F.R. 17.22(b)(5)(ii), the USFWS may not require (1) any conservation or mitigation measures in addition to those provided for in the Plan in response to a Changed Circumstance; or (2) additional conservation or mitigation measures for any Changed Circumstance that is not identified in the Plan without the consent of the Permittees, provided the Permittees are properly implementing the MSHCP Plan. As recognized in the No Surprises Rule at 50 C.F.R. 17.22(b)(6) and 17.32(b)(6), the USFWS, any federal, state or local agency, or a private entity may take additional actions at their own expense to protect or conserve a Covered Species within the MSHCP Plan Area.

**Section 7 Consultations**

USFWS shall evaluate the direct, indirect, and cumulative effects of the Covered Activities in its internal FESA Biological Opinion issued in connection with the MSHCP and issuance of the Section 10(a) Permit. As a result, and to the maximum extent allowable, in any consultation under Section 7 of FESA subsequent to the Effective Date involving the Permittee(s) or entity with Third Party Take Authorization with regard to Covered Species and Covered Activities, USFWS shall ensure that the FESA Biological Opinion issued in connection with the proposed project that is the subject of the consultation is consistent with the internal FESA Biological Opinion. Such project must be consistent with the terms and conditions of the MSHCP and the IA. Any reasonable and prudent measures included under the terms and conditions of a FESA Biological Opinion issued subsequent to the Effective Date with regard to the Covered Species and Covered Activities shall, to the maximum extent appropriate, be consistent with the implementation measures of the MSHCP and the IA. USFWS shall not impose measures in excess of those that have been or will be required by the Permittee(s) or entity with Third Party Take Authorization pursuant to the MSHCP and this Agreement.

The Plan does not address Section 404 of the Clean Water Act. Projects that currently require a Section 404 permit will continue to do so notwithstanding the Plan. USFWS, in administering its responsibilities with respect to consulting with the U.S. Army Corps of Engineers (ACOE) on Section 404 permits, will encourage the adoption of project proposals and conservation measures consistent with the objectives of the Plan. To the maximum extent allowable by law, adoption of these conservation measures shall be deemed to satisfy the requirements of FESA and NEPA for Covered Species.

**State Assurances**

Pursuant to California Fish and Game Code Section 2820(f), CDFG "may provide assurances for plan participants commensurate with long-term conservation assurances and associated implementation measures pursuant to the approved plan." Further, in accordance with California Fish and Game Code Section 2820(f)(2), 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 Permittees for a period of time specified in the IA, unless CDFG determines that the Plan is not being implemented consistent with the substantive terms of the IA.

**Relationship to Existing Wetland Regulations**

Projects that affect wetland natural communities shall be required to comply with the applicable regulatory standards related to wetlands functions and values. The purpose of this discussion is to identify current regulatory processes and indicate their relationship to the process set forth in the MSHCP. It should be noted that current wetland regulatory processes beyond the process described in this section are not relied upon for coverage of species addressed in the MSHCP. Many wetland communities (e.g., freshwater marsh, riparian forests, riparian woodlands, open water, flood channel, river and stream beds) within the Plan Area include areas subject to California Fish and Game Code (CFG Code) Section 1600 et seq. and the federal Clean Water Act (Sections 401, 402 and 404). Such areas will continue to be regulated by state and federal agencies. The ACOE shall continue to consult with the USFWS pursuant to Section 7 of the FESA on projects that may affect federally listed species within ACOE jurisdictional wetlands and waters. The CDFG shall continue to work closely with the ACOE, USFWS, and local jurisdictions to ensure that the CDFG Code Section 1600 et seq. agreements are consistent with the mitigation required for Covered Species. In addition, other existing regulations related to wetland Habitats, such as the Porter-Cologne Act shall continue to apply.

**Modifications, Like Exchanges to Conservation Areas, and Amendments to the MSHCP**

MSHCP modifications and amendments are not anticipated on a regular basis. However, certain events may trigger modifications or Minor or Major Amendments to the MSHCP. Any signatory to the IA may seek a modification or amendment to the MSHCP.

Clerical changes to the MSHCP shall be made by the CVCC on its own initiative or in response to a written request submitted by any Permittee or Wildlife Agency, which includes documentation supporting the proposed clerical change. Clerical changes shall not require any amendment to the MSHCP, the Permits or the IA. Clerical changes include corrections of typographical, grammatical, and similar editing errors that do not change the intended meaning and corrections of any maps or exhibits to correct insignificant errors in mapping. The Parties anticipate that most clerical changes to the MSHCP will occur during the first ten (10) years of the Permits. Annual Reports shall include a summary of clerical changes made to the MSHCP in the preceding calendar year.

The Parties agree that the adoption and amendment of general plans, specific plans, community plans, zoning ordinances and similar land use ordinances, and the granting of implementing land use entitlements by the County and the Cities are matters within the sole discretion of the County and Cities and shall not require amendments to the IA, MSHCP, or the Permits, or the approval of other Parties to the IA. However, the Parties agree that: (1) no such action by the County or the Cities shall in any way alter or diminish their obligations under the IA, the MSHCP, or the Management and Monitoring Program; and (2) approval of certain projects may lead to revocation or suspension of the Permits pursuant to Section 23.5 of the IA.

Except as otherwise provided, changes to avoidance, minimization, compensation and MSHCP Conservation Area management strategies developed through and consistent with the Adaptive Management Program described in Section 8 of this document shall not require any amendment to the MSHCP, the IA, or the Permits.

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The design of the Conservation Areas focused on natural communities, Core Habitat for Covered Species, Essential Ecological Processes, Biological Corridors and Linkages. The natural communities and Covered Species also occur outside of the Conservation Areas. In some instances it may be possible to achieve the Plan's Conservation Goals while not increasing the level of Take analyzed in the Plan through a different configuration of one or more Conservation Areas. Like Exchanges are changes proposed by a Permittee to modify the boundary of one or more Conservation Areas in exchange for reducing or modifying the boundary of a Conservation Area. A Like Exchange must result in equal or greater benefits to Covered Species and natural communities as compared to those benefits analyzed in the Plan. In addition, the level of Take of Covered animal species, habitat loss for Covered Species, and loss of acres of conserved natural communities must be no greater than that analyzed in the Plan. The criteria and procedures are described in Section 6.12.2.

Minor Amendments are amendments to the MSHCP of a minor or technical nature where the effect on Covered Species, level of Take, and Permittees' ability to implement the MSHCP are not significantly different than those described in the MSHCP as originally adopted. Minor Amendments to the MSHCP shall not require amendments to the IA or the Permits. The types of Minor Amendment are described in Section 6.12.3. Some types require Wildlife Agencies' concurrence.

For the Minor Amendments requiring Wildlife Agencies' concurrence, any non-concurrence must occur within 60 days of receipt of written notice as referenced above. If the Wildlife Agencies concur, or if they fail to respond within the 60-day period, the Minor Amendment may be approved.

Major Amendments are those proposed changes to the MSHCP and the Permits that are not modifications or Minor Amendments. Major Amendments to the MSHCP shall require a subsequent amendment to the IA and the Permits, and public notice as required by applicable laws and regulations. The CVCC shall submit any proposed Major Amendments to the Wildlife Agencies. Major Amendments are described in Section 6.12.4. Major Amendments shall require the same process followed for the original MSHCP approval. A Major Amendment will require an amendment to the MSHCP and the IA addressing the new circumstances, subsequent publication and public notification, CEQA/NEPA compliance and intra-Service Section 7 consultation, if one is deemed necessary. Major Amendments shall be subject to review and approval by the CVCC and other Permittees as appropriate, at a noticed public hearing. The Wildlife Agencies shall use reasonable efforts to process proposed Major Amendments within one hundred twenty (120) days after approval by the Permittee(s).

### **Annexations**

Each of the Permittees shall enforce the terms of the Plan and the IA with respect to all individuals or entities subject to its jurisdiction, including lands in the Plan Area annexed into the Permittee's jurisdiction after Plan approval. Any land annexed within the MSHCP Plan Area shall receive Take Authorization pursuant to the Permits, provided the Minor Amendment requirements of Section 20.4 of the IA have been met. If the Minor Amendment requirements cannot be met, a Major Amendment will be required.

In the event of the deannexation of any land within the Plan Area to another jurisdiction that is not a Permittee, the Parties shall seek to enter into an agreement among the Permittees, the Local Agency Formation Commission (LAFCO), the annexing jurisdiction, and the Wildlife Agencies as part of the annexation process to ensure that any Development of the annexed lands proceeds in accordance with the Conservation Objectives of all affected Conservation Areas. If an agreement can be reached, that jurisdiction shall become a Permittee after executing an addendum to the IA. If agreement cannot be reached, or if the MSHCP requirements are not imposed by LAFCO, then the deannexed land will not receive Take Authorization pursuant to the Permits. Additionally, such deannexation may result in the revocation or suspension of the Permits pursuant to Section 23.5 of the IA. Parties with deannexed land that qualify as Participating Special Entities may receive Take Authorization as set forth in Section 11.7.1 of the IA.

## ***E.S.7 Take Authorization for Covered Activities and Term of Permit***

The proposed action is the issuance of long-term (75-year) Permits for the Take of Covered Species (animal species) to the Permittees. Covered Species include both Listed and Non-listed Species that are adequately conserved by the Plan. The Permits provide for the Take of these species or loss of their Habitat, so long as compliance with the Plan requirements is achieved. Although fully protected species are included in the list of Covered Species, Take of these species is not authorized in the NCCP Permit and is prohibited by the California Fish and Game Code. The following species in the MSHCP are fully protected under the California Fish and Game Code: (1) Peninsular bighorn sheep; (2) Yuma clapper rail; and (3) California black rail. The CDFG acknowledges and agrees that if the measures set forth in the MSHCP are fully complied with, the Covered Activities are not likely to result in Take of these species.

### **Covered Activities outside Conservation Areas**

The Permits will provide Take Authorization for the following types of Covered Activities outside Conservation Areas:

- Development permitted or approved by Local Permittees.
- Public facility construction, operations and maintenance, and safety activities by the Local Permittees for existing and future facilities, including both on and off site activities.
- Emergency response activities by Permittees required to protect the public health, safety, and welfare.

The MSHCP does not provide Take Authorization for agricultural operations.



**Transportation Projects within and outside Conservation Areas**

The Permits will provide Take Authorization for the following Caltrans' interchange projects: Indian Avenue I-10 Interchange, Palm Drive/Gene Autry Trail I-10 Interchange, Date Palm Drive I-10 Interchange, Bob Hope Drive I-10 Interchange, and Jefferson Avenue I-10 Interchange. Widening of the local arterials associated with these interchange projects are also Covered Activities; these are shown in Table 7-1 in Section 7.2.1. The Caltrans' projects listed in Table 7-2 in Section 7.2.2 are also Covered Activities. The Plan also provides Permits for the local transportation projects shown in Table 7-3 in Section 7.2.3.

**County Flood Control Projects within Conservation Areas**

The Permits will provide Take Authorization for the construction, operation, and maintenance of the flood control facilities shown in Tables 7-8a and 7-8b in Section 7.3.

**Covered Activities in Conservation Areas**

The Permits will provide Take Authorization for the following Covered Activities in Conservation Areas:

- *Construction and maintenance of trails, public access facilities, and campground facilities, except on federal land, as provided for in this Plan consistent with the Species Conservation Goals and the Conservation Objectives for the Conservation Areas, and consistent with the guidelines for trails and public access in Section 7.3.4.2.*
- *Specific projects and operation and maintenance activities listed in Tables 7-1 through 7-11.*
- *Development permitted or approved by Local Permittees.*
- *Expansion of mining operations on non-federal land.*

For additional details, see Section 7.3.1.

The Permits do not provide Take Authorization for agricultural operations.

The Take Authorization does not cover approved Development Projects with legal vested rights as of the date the Permits are issued. Development Projects with legal vested rights (as of the date of Permit issuance) could obtain take coverage if the applicable Permittee requires the Project Applicant comply with all applicable Plan requirements. Alternatively, a Project Applicant with legal vested rights (at the time of Permit issuance) could seek Take Authorization directly from the Wildlife Agencies.

**Covered Operation, Maintenance, and Safety Activities within Existing Rights-of-Way or Easements**

Section 7.3.1.1 describes the types of activities that may occur in conjunction with the projects delineated in Tables 7-1 through 7-12. As indicated in the tables, some of these activities are subject to the applicable avoidance and minimization measures described in Section 4.4.

**Allowable Uses in Conservation Areas**

The following activities are considered to be compatible with the Species Conservation Goals and Conservation Objectives on non-federal Reserve Lands.

- *Emergency, safety, and police services.*
- *Emergency response activities by Permittees required to protect the public health, safety, and welfare.*

For additional discussion, see Section 7.3.2.1.

Section 7.3.2.2 describes pesticide use as an Allowable Use inside and outside the Conservation Areas as follows:

*Pesticide use.* Pesticide use on non-Covered Species is an Allowable Use, but any Take of Covered Species resulting from toxicological effects of the use of pesticides pursuant to applicable requirements is not a Covered Activity.

**Compatible Activities**

Activities that may occur on non-federal Reserve Lands and are Covered Activities are:

- *Emergency repairs by Permittees of public infrastructure facilities.*
- *Reserve management and monitoring.*

For additional details, see Section 7.3.3.1.

The Permits will provide Take Authorization for the construction of specified trails and for the use of identified trails on non-federal land. The names of all the trails, both on federal and non-federal land, are provided in the Plan for informational purposes to provide context for the reader. The portions of the trails on federal land are subject to a separate permitting process through a Section 7 consultation between BLM and USFWS. That process is anticipated to be a parallel action to the MSHCP. Use of trails on CDFG land is subject to the regulations of the California Fish and Game Commission. The MSHCP trails planning process has coordinated with CDFG to seek CDFG concurrence on trail use on CDFG land.

The trails management program in the Santa Rosa and San Jacinto Mountains Conservation Area has adopted an Adaptive Management approach with an emphasis on research. The Trails Plan will initially focus on multi-agency scientific data gathering to evaluate the effects of recreational trail use on Peninsular bighorn sheep health, habitat selection, and long-term

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population dynamics. The overarching goal of this research program is to obtain empirical data from the Plan Area to guide trails management. This research program will be coordinated with monitoring of human trail use, and will be integrated with educational and public awareness efforts, and other trail management prescriptions.

The trails management program is composed of eight elements, which are described below. In addition, the public use and trails management plan addresses other public access issues, such as dogs and cross country travel, in Section 7.3.3.2.2. The eight elements, detailed in the following sections, are summarized here: (1) use of existing trails, which will remain open all year; manipulation of use levels on some trails may occur as part of the research program; (2) initiation in Plan year 1 of a research program designed to ascertain bighorn sheep response to, and any significant adverse impacts from, recreational trail use in the Santa Rosa and San Jacinto Mountains. This research may include manipulation or limitation of use levels or closures on selected trails as an element of the study design to address specific hypothesis-based research questions; (3) gathering of data on human trail use, primarily on trails within sensitive bighorn sheep lambing habitat and other trails as appropriate. A year-round mandatory self-issue permit system for selected trails, and other methods as appropriate, will be part of the human use monitoring program. Ongoing monitoring of bighorn sheep populations will be expanded to include regular monitoring of the distribution, abundance, recruitment, survival and cause-specific mortality of bighorn sheep throughout the Plan Area; (4) closure of three trails from June 15 through September 30 to minimize the potential impediments for access to water by bighorn sheep and other wildlife during the hot season; (5) deferral of construction of new trails, pending the results of the initial research program, monitoring of trail use, and monitoring of bighorn sheep populations; (6) implementation of a public awareness and education program; (7) annual review of the effectiveness of the public use and trails management program, including results of monitoring, research, and trail management prescriptions. This annual review will consider prudent management actions, including potential trail closures, in response to scientific data or sheep population declines below identified threshold levels; and (8) rerouting and decommissioning of trails to protect sensitive resource values, pending results of the five-year research program.

Due to specific resource concerns associated with the Art Smith Trail and the Mirage Trail, management actions to benefit Peninsular bighorn sheep recovery are addressed separate from the Trails Plan and will be initiated prior to issuance of the Take Permits. These actions include rerouting the easternmost segment of the Art Smith Trail to incorporate the southern Schey Trail; restricting access to Dead Indian Canyon and the decommissioned segment of the Art Smith Trail, including the constructed segment of the trail that begins at the Art Smith Trailhead and proceeds westerly along the south side of Dead Indian Canyon; constructing the Hopalong Cassidy perimeter trail; closing the upper portion of the northern Schey Trail; providing an alternate access to the Mirage Trail; closing the upper Mirage Trail; and implementing an education, signage, and enforcement program to support these actions. Environmental documentation for, and approval of, these actions are separate from the Trails Plan.

The Trails Management Subcommittee will annually review effectiveness of the overall public use and trails management program. Annual review will include progress reports and recommendations from the researcher(s) working on bighorn sheep within the Plan Area; an assessment of bighorn sheep population trends; recreational trail use data; compliance with the hot

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season closures, mandatory self-issue permits, and other trail management prescriptions; and other new data acquired.

Until such time as the initial phase of the monitoring and research program is completed [see Trails Management Program Elements (2) and (3) above], the annual review will consider the best information available to evaluate the public use and trails management program and any effects on the Peninsular bighorn sheep. Best information available will include, but is not limited to, Peninsular bighorn sheep demographic data, results from ongoing agency monitoring programs, and interim results of the monitoring and research program.

The Subcommittee will make recommendations to both the RMOC and the Santa Rosa and San Jacinto Mountains National Monument Advisory Committee regarding modifications to the public use and trails management program. The RMOC will make recommendations to CVCC for the portions of trails on non-federal land. The Monument Advisory Committee will make recommendations to BLM and USFS regarding trails on federal land. See Section 6.3 for additional information regarding the Trails Management Subcommittee. Authorization for new trails, unidentified existing trails, and decommissioning and removing trails will be evaluated through a Section 7 consultation on federal lands.

Trails are available for use by all means of non-motorized conveyance (e.g., on foot, bicycle, horse, etc.), except for certain trails that are closed to bicycles.

Construction and use of new perimeter trails described in this section will be a Covered Activity unless research results indicate that the proposed trails would adversely affect bighorn sheep. Current analysis indicates that these perimeter trails will not substantially impact Peninsular bighorn sheep populations, nor result in Take. Additional research will be conducted through Element 2 (described above) to further analyze impacts to Peninsular bighorn sheep from recreational trail use, thereby confirming and expanding upon previous impact assessments. Proposals to construct perimeter trails and other new trails will be deferred until the initial phase of the monitoring and research program has been completed. This deferral will ensure that trail conditions (e.g., use levels) are as consistent as possible once the research and monitoring programs are initiated. Once the research is completed, perimeter trails will be constructed unless the research results indicate that perimeter trails will substantially impact Peninsular bighorn sheep. Subsequent CEQA and/or NEPA analysis of these trails will also be required.

An alignment for a trail connecting the interpretive loop trail south of the Santa Rosa and San Jacinto Mountains National Monument Visitor Center with the northwest portion of La Quinta Cove has been identified and is known as the Palm Desert to La Quinta Connector Trail. Portions of the preferred alignment traverse areas used by wild sheep. Therefore, the portion of the Palm Desert to La Quinta Connector Trail between the Visitor Center and the *Living Desert* will be a Covered Activity when the research program evaluating the effects of recreational trail use on wild sheep in the Conservation Area and a subsequent research program evaluating the effects of this portion of the Connector Trail on captive sheep at the Bighorn Institute have been completed. When research is pursued on the captive sheep at the Bighorn Institute, the permission of the Bighorn Institute will be obtained prior to the study being initiated. If impacts to wild and/or captive breeding populations would result as determined through the research programs and Feasible mitigation measures cannot be implemented to reduce impacts, then all or a portion of the preferred alignment of the Connector Trail will not be constructed. If research results are less than

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definitive, then wildlife management principals, professional judgment, and the best available science will be used to assess impacts and develop mitigation measures. Mitigation measures will be considered that will reduce potential adverse impacts to levels that are less than significant. Subsequent CEQA and/or NEPA analysis of the Connector Trail will be conducted.

Future proposals for new trails in the Santa Rosa and San Jacinto Mountains Conservation Area, other than the identified perimeter trails, will be addressed on a case-by-case basis, subject to existing regulations, policies, and land management plans. Such trail proposals will require an Amendment to the Plan with Wildlife Agency concurrence.

Trails will be rerouted to protect sensitive resource values (e.g., cultural resources, wildlife habitat, soils) where feasible. “Feasible” trail reroutes are those that can be accomplished without extraordinary expenditures or efforts, i.e., the benefits derived are commensurate with the expenditure of funds and/or the level of effort. Reroutes are assumed to replace, not augment, trails or trail segments.

Identification of trails to be rerouted to protect bighorn sheep will be based on habitat use patterns, home ranges, and distribution of bighorn sheep and other available research. Proposals regarding specific reroutes will be considered on a case-by-case basis, except as pertains to segments of the Goat Trails, the Guadalupe Trail, and a portion of the North Lykken Trail (see below). Outside Essential bighorn sheep Habitat, proposals for trail reroutes will also be addressed on a case-by-case basis.

Because the Santa Rosa and San Jacinto Mountains Conservation Area provides Essential Habitat for the Peninsular bighorn sheep, the Plan also must address other forms of public access and use on non-federal land in addition to trails. Prior to Permittees’ authorizing cross-country travel, camping, pets, pack stock, Murray Hill facilities, noncommercial/noncompetitive organized group activities, non-motorized commercial recreation activities, motorized commercial recreation activities, competitive recreation events, motorized-vehicle use of trails, or other similar activities, they shall develop a management plan that describes consistency with Conservation Objectives and protection of Peninsular bighorn sheep and other biological resources. This plan will be developed as part of the RMUP for the Santa Rosa and San Jacinto Mountains Conservation Area.

Trails in Conservation Areas outside the Santa Rosa and San Jacinto Mountains have been established primarily in association with existing parks, preserves, and Wilderness areas. These trails are considered as Allowable Uses under the Plan and are those portions of the following trails not on federal land:

- A system of trails on the Thousand Palms Preserve
- The Pacific Crest National Scenic Trail traversing the Snow Creek/Windy Point and Stubbe and Cottonwood Canyons Conservation Areas
- Trails on non-federal lands within Dos Palmas Preserve/ACEC

**Conditionally Compatible Uses**

The conditionally compatible public access uses within the Conservation Areas consist of trails, facilities, and passive recreational activities. The primary public access component within the Conservation Areas will be trails. In addition to the trails, trailheads, and interpretive facilities in Conservation Areas, passive recreational activities will also be Allowable Uses within the Conservation Areas. These include passive recreation activities that do not impact land within the Conservation Areas and cause minimal disturbance to biological resources. Passive recreation includes hiking, bird watching, photography, and under specified locations identified in the following guidelines, mountain biking, horseback riding, picnicking, scientific research, and hunting. Other activities associated with public access and recreation that will be Allowable Uses include the installation of signs and barriers.

Excessive or uncontrolled access within the Conservation Areas can result in Habitat degradation and disruption of breeding and other critical wildlife functions at certain times of the year. In order to provide sufficient protection for natural and biological resources within the Conservation Areas, policies and guidelines have been developed to regulate the public access Covered Activities described above. These guidelines are separated into two categories: (1) siting and design and (2) operations and maintenance, and are described in Section 7.3.4.2.

Before a new trail or other public access facility can be constructed in a Conservation Area, the lead agency will submit the proposal to the appropriate RMUC and the Trails Management Subcommittee for review and comment. The project will be subject to CEQA/NEPA review. Approval of the trail or other public access facility will require a Minor Amendment to the Plan.

**Participating Special Entity**

Any public service facility provider, such as a utility company or a public district, including, but not limited to, a school, water, or irrigation district, that operates facilities and/or owns land within the Plan Area may request Take Authorization for its activities from CVCC pursuant to the Permits as a Participating Special Entity. Such activities must be consistent with the terms and requirements of the Permits, the Plan, and the IA. The process for submitting an application, review by CVCC and the Wildlife Agencies, and granting of Take Authorization is delineated in Section 11.7 of the IA. Participating Special Entities shall contribute to Plan implementation through payment of a fee or other appropriate mechanism based on the type of proposed activity, which shall be applicable to all activities in the Plan Area.

***E.S.8 MSHCP Reserve Lands Management and Monitoring***

Section 8 describes a framework for the implementation of a Monitoring program, Management Program, and Adaptive Management to provide for the Conservation of species and natural communities in the Reserve System and a Monitoring Program to assess the condition of species and natural communities in the Reserve System. The framework Management Program addresses ongoing responsibilities and Adaptive Management approaches. This framework is adaptive and subject to modification as system stressors change and as new information on how to

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better manage Reserve Lands to achieve the species and habitat goals becomes available. The Monitoring Program will be implemented in phases starting with the collection of baseline data, which will be used to evaluate conceptual monitoring strategies followed by implementation of long-term species and natural communities monitoring. The Monitoring Program will also be adaptive to ensure that new protocols and techniques can be incorporated as appropriate. The goals in making future modifications to the Monitoring Program will be to improve efficiency and increase the reliability of the data. The Monitoring Program data will be used both to determine if the Plan is meeting its Conservation Objectives and to identify the need for and the success of Adaptive Management of Reserve Lands.

The Monitoring and Management Program is designed to: (1) demonstrate that the Plan is achieving its Conservation Goals and Objectives for the Covered Species and conserved natural communities; (2) specify the primary components of Reserve Lands management; and (3) identify how Adaptive Management strategies will be used to address changes in Habitat condition, natural communities and/or species health (distribution and numbers). These changes may be the result of anthropogenic and natural forces. The Management and Monitoring Program focuses on identifying changes in identified conserved natural communities and Covered Species condition (numbers, distribution, etc.) and what factors may be causing the identified changes. The data from the program will help identify the thresholds that would trigger when Adaptive Management actions are appropriate and test their efficacy.

### **Monitoring Program**

The Monitoring Program will provide scientifically reliable data on: (1) the status and spatial and temporal dynamics (amplitude and magnitude) of key ecosystem components for the Covered plant and animal Species and conserved natural communities, and (2) the threats to these species and conserved natural communities. The program will also identify, develop, and evaluate the extent to which, management practices and policies are sustaining the plant and animal species and conserved natural communities covered under the Plan. This includes the collection and analysis of scientifically reliable data to enable Conservation Area managers to identify threats and to assess the effectiveness of management actions.

The detailed monitoring protocols will be developed during the first two (2) years of implementation and will be modified based on the baseline data collect during the first monitoring cycle and thereafter as appropriate.

Monitoring efforts have been ongoing on some of the Existing Conservation Lands, in some cases for many years. These monitoring efforts contribute to the base of knowledge used to develop this Monitoring Program.

### **Baseline Phase of Monitoring Program**

Initially the Monitoring Program will gather quantitative baseline data for all Covered Species for which such quantification is possible. The primary objective of the baseline phase will be to conduct baseline surveys and to develop and test methods and protocols. It will be used to test methods to aggregate these species in a manner that increases monitoring efficiency. The baseline phase will also be used to assess the potential for integration of monitoring for species, conserved natural communities, and ecological processes. The need for this baseline phase stems

from the essential requirement to distinguish natural fluctuations in population size from those with anthropogenic causes. Identifying trigger points for management actions without the ability to separate the effects of natural fluctuations from anthropogenic threats can be problematic. An additional objective during this first phase will be to determine if certain Covered Species, habitat level variables, or landscape metrics can serve as effective surrogates, umbrella species, or other indicators, for species groups or associations within natural community assemblages. Partially or completely meeting this objective could significantly reduce monitoring costs without losing critical information necessary to manage and protect the species and communities included in the MSHCP Reserve System.

### **Monitoring at Multiple Scales**

The body of scientific literature on ecological monitoring is largely focused on individual species. It does not provide explicit methods directly applicable to tracking multiple species or give clear guidelines for monitoring Habitats and assessing trends. In this regard, theory is lagging behind the need for monitoring large-scale systems. Therefore, it is necessary to create a system that is flexible enough to adjust to each species situation, but is formal enough to allow evaluations of entire preserves -- an ecosystem approach.

Threat monitoring is woven into the framework at all levels of monitoring. Threats operate at different and often multiple scales concurrently, including landscapes, natural communities, and in the case of diseases, at the level of individual species. Known threats are identified in the conceptual models; potential new threats will be identified as scientists evaluate monitoring data, recent literature, and report their field observations from the Plan Area.

*Species-level monitoring* aims to provide data on the extent to which Conservation Goals for species are being met. Species monitoring will involve tracking Covered Species and invasive species that may pose a threat to Covered Species. This monitoring needs to sample in both space and time, to address both distribution and trends in Covered Species. It also tracks species responses to resource fluctuations and the level at which threats are affecting species.

*Landscape-level monitoring* focuses on geographically large areas with functional ecosystem processes and coarse-scale conservation targets. Landscapes are defined at a scale that includes multiple ecosystems, natural communities, and/or where there is a transfer of energy, or movement of nutrients or materials between those units. Landscape monitoring includes regional weather, Essential Ecological Processes, and groundwater levels. It also includes satellite-based evaluations of the extent of changes in vegetation/natural community polygons over time. This monitoring focuses on processes that affect the condition and dynamics of landscapes.

*Natural community-level monitoring* focuses on the local-scale threats to conserved natural communities and Habitats, such as non-native invasive species. Natural community level monitoring will involve two primary elements. The first of these is refinement and update of the Natural Communities Map and the species distribution models originally developed in the reserve design process for the Plan. The refinement of the current Natural Communities (vegetation) Map will better describe the occurrence and distribution of both conserved natural communities and the Covered Species that depend on them. The second element for conserved natural communities monitoring is the evaluation and development of a “Rapid Assessment” of several natural community-level characteristics and trends (e.g., CNPS 2003).



### **Management Program**

The goal of the Management Program, including Adaptive Management actions, is to provide for the Conservation of the Covered Species as anticipated by the Plan. To accomplish this goal requires on-going management activities on reserve lands such as fencing and fence maintenance, public use management, enforcement of appropriate laws and regulations, and the implementation of other actions identified in reserve management plans. Adaptive Management actions will also be implemented using an integrated multidisciplinary approach addressing management practices, evaluating management actions, and assessing threats using appropriate experimental approaches at species, natural community, and landscape levels. The Management Program includes:

- The development of a reserve management plan(s) within three (3) years of Permit issuance including evaluation of existing management activities.
- A research component that will be funded and implemented by the Permittees. Research needs will evolve over time and will be identified by the same process used to evaluate monitoring and management protocols and results.

### **Integration of the Management and Monitoring Programs**

The Monitoring Program and the Adaptive Management component of the Management Program must be integrally linked. The analyses of species and natural community monitoring data (and information regarding on-going preserve management issues) will be used to identify if and where Adaptive Management actions should be considered. If Adaptive Management actions are implemented, the Monitoring Program will need to evaluate the response of species and/or conserved natural communities to the Adaptive Management action. Linking the Monitoring Program with the implementation of Adaptive Management actions will require:

- Use of available data to structure a range of alternative response models to address a given threat or stressor affecting a Covered Species or natural community and evaluation of the models.
- Development of cost estimates, staffing needs, and schedules for implementation of Adaptive Management actions.
- Development of a program implementation structure which helps identify potential Adaptive Management options and associated monitoring to determine their effectiveness, and evaluates the Adaptive Management action for further use or modification. This implementation structure will include both MPA and staff and Land Managers.

### **Management and Adaptive Management of Reserve Lands**

The management of the Reserve System will integrate management of Existing and Additional Conservation Lands. The goal of the Management and Adaptive Management program is to implement management actions and prescriptions that ensure Conservation of the Covered Species and conserved natural communities within the Plan Area. Responsibilities for specific activities associated with reserve management are divided amongst the RMOC (Section 6.1.3), the Land Manager (Section 6.1.5), and the RMUCs (Section 6.1.4). Their responsibilities include

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facilitating consistent and continuing exchange of information among all individuals and committees involved in reserve management and monitoring. The specific responsibilities of each of these entities are detailed in the identified sections.

The MPA (Section 6.1.6) is responsible for coordinating with reserve managers to facilitate the exchange of Monitoring Program data. Likewise, the Land Manager has the responsibility to facilitate the exchange of information regarding all completed and proposed management and Adaptive Management actions. Annual reports are prepared by the Land Manager and MPA and require review by the CVCC, RMOC, and appropriate RMUCs. Section 8.7 describes the elements of the annual reports and the process for review and evaluation of these reports. The organizational structure also provides for input and recommendations from ISA on specific issues concerning scientific aspects of the Plan.

Management programs and plans already in place on Existing Conservation Areas will serve as the basis for the Management Programs for Additional Conservation Lands in the MSHCP Reserve System. As part of the Plan implementation, land management agencies will coordinate to bring their management programs into conformance with the goals of the Plan for Covered Species and conserved natural communities. Section 8.2.3 describes the Existing Conservation Lands and current management.

### **Proposed Management**

A framework for development of proposed management prescriptions, a process for their evaluation, and implementation of Adaptive Management actions on Reserve Lands has been developed. Management actions are subject to the Adaptive Management approach in that they will be evaluated and modified based on feedback from the Monitoring Program. Proposed management actions that are identified on Reserve Lands will be initiated by the Land Manager, the public or private land management agency, and/or the RMUCs with input from the RMOC. While each agency with land ownership within the Conservation Areas will have ultimate responsibility for managing their land, implementation of the Plan will reinforce the existing close coordination and cooperation in management of Reserve Lands. This coordinated management approach also incorporates feedback from the Monitoring Program.

On Reserve Lands, ongoing management actions will include:

1. Control of habitat disturbance from unauthorized OHV use or trespass in Conservation Areas, by installation of signage, fencing, and gates; patrolling; law enforcement; and installation of barriers.
2. Control of habitat disturbance from unauthorized dumping, by removal of non-organic debris, installation of barriers, gates, and fences.
3. Control of non-native or invasive species and other habitat restoration projects.
  - a. Control of tamarisk. Tamarisk is an exotic pest plant that competes with native species and reduces the habitat value for Covered Species including Peninsular bighorn sheep, least Bell's vireo, and other riparian birds. A program to control tamarisk has already been implemented in many areas within the MSHCP Reserve System (Thousand Palms Conservation Area, Dos Palmas Conservation Area, Santa Rosa and San Jacinto Mountains Conservation Area). This invasive species control project is considered as

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ongoing management because the need for tamarisk eradication and the techniques to it have already been determined.

- b. Control of cowbirds in riparian areas. Surveys done for the Monitoring Program in spring 2003 determined that cowbirds are present in all areas where riparian birds nest. Methodologies for cowbird control are well established and can be implemented in riparian Habitat areas.

These management activities will be implemented on Additional Conservation Lands as they are added to the MSHCP Reserve System. They will be subject to evaluation of their efficacy and review of benefits and impacts, through the work of the Land Manager and the reserve management committees. Ongoing management activities such as habitat perimeter fencing and signing may need to be evaluated through Adaptive Management.

### **Adaptive Management**

In its simplest form, Adaptive Management is "learning by doing" (Walters and Holling 1990). More specifically, Adaptive Management is the application of the scientific method to management strategies. It requires the development of hypotheses, regarding for example either the impacts of potential threats and/or the efficacy of management actions to control those threats, testing of the hypotheses, and then either a restatement of the hypotheses and further evaluation, or the initiation of tested management actions on a wider scale. The Plan will utilize Adaptive Management strategies as applicable on Reserve Lands.

Adaptive Management can range from an experimental approach which involves monitoring the response of identified factors to a treatment where a control area is also evaluated to a broader view where monitoring is conducted within the context of hypothesis testing (Walters and Holling 1990, Holling 1999, Johnson 1999) to determine the effect of management. Hypotheses are generally based on insights derived from conceptual models.

The Adaptive Management Program will address management uncertainty, including the following issues:

1. Management action as responses to findings of the Monitoring Program in regards to unanticipated changes, in the needs of individual species, groups of species, or conserved natural communities, including fluvial and aeolian transport and sorting of sand.
2. Reserve and species management techniques and actions.
3. Enhancement of the conservation values of lands in the Conservation Areas.
4. Management actions to address Changed Circumstances as addressed in Section 6.8.3.

Linking the Monitoring Program with Adaptive Management actions will inform reserve managers of the status of Covered Species, conserved natural communities, and Essential Ecological Processes in a manner that provides data to allow informed management actions and decisions. Existing information about both the impact of threats and the management strategies for addressing those threats will be used extensively in designing the initial management program for each Conservation Area.

## **Ecosystem Models**

Section 8.2.5 presents an initial conceptual model that has been developed for the monitoring and management framework. Under this approach, Covered Species will be treated as affiliated with six natural community/habitat assemblages that are grouped due to similar natural processes and threat regimes. The broad habitat associations include aeolian sand, alluvial fan, riparian, marsh, alkali flat and playa, and mountain, each of which includes one or more of the 27 conserved natural communities included in the Plan Area. Within each of these habitat associations, monitoring and management protocols are provided at several scales: (1) landscape, (2) natural community/habitat, and (3) species. In many cases, these protocols involve measurements at multiple trophic levels. A process is proposed for evaluating monitoring results, for modifying monitoring protocols to provide more insightful data, and for recommending management actions. A variety of approaches will be evaluated to monitor landscapes, conserved natural communities, and species, during the baseline phase and on an ongoing basis.

The multiple scales designed into the framework should provide biologists and managers sufficient information to identify:

1. Natural patterns and fluctuations within the typical dynamics of this habitat assemblage.
2. The occurrence and extent of perceived threats within a time frame to enable managers to respond with appropriate management tools.
3. The range of impacts that stressors or threats have on site-specific habitat characteristics and species assemblages, across trophic levels.
4. The scope of impacts those threats have on the distribution of Covered Species across a landscape that includes multiple conservation sites, each with different physical attributes (climate, sand delivery sources and conduits, vegetation patterns).
5. Success or failure in the implementation of management actions aimed at controlling threats.

## **Data Storage & Analysis**

To enable managers and Wildlife Agencies to evaluate the efficacy of conservation measures, it is essential that collection of sufficiently robust monitoring data occurs. However, these efforts will be wasted if the data are not analyzed, evaluated, and stored in a manner that allows easy retrieval and understanding by all stakeholders. To ensure efficient and consistent data handling the following standard practices will be adopted:

1. At the beginning of each year, all MSHCP data collectors (reserve monitors, Reserve Managers etc.) will meet to discuss data collection protocols to ensure scientific validity and consistency through time. Field data forms used by various reserve monitors will be standardized.
2. As data are processed, all versions of a data set will be archived, from raw data to a fully checked and verified form. The methods and steps used to process data will be described. The primary purpose of this practice is to make it possible to recover from data mishandling during manipulation of the original source data. It also makes it possible to verify data processing methodologies at a later date should it become necessary.

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3. Metadata will accompany all data generated by this project. The current standard is the Federal Geographic Data Committee (FGDC) Metadata Standard. Any future standard will be agreed upon by the RMOC.

The responsibility for storing the official record associated with MSCHP compliance will rest with CVCC. The MPA will be responsible for compiling the data generated from the Monitoring Program. Copies of these data will be provided to the appropriate parties, including CDFG, USFWS, and BLM. A process of “mirroring,” maintaining identical copies of entire file systems on computer servers in different locations, will be followed. The mirrored file systems will create redundancy and will place the entire data set closer to those who use it most.

Coordination of data compilation will be the responsibility of the Biological Monitoring Program Administrator. Field crews will be responsible for entering the data collected during the field season into the program database and for verifying the integrity of the data. Once data are compiled, the database management personnel will be responsible for organization and storage. Data analysis will be handled by the data analysis team in conjunction with the program administrator. The analysis may involve nested integration of the monitoring levels (landscape, habitat, and species) to provide the robust power intended by the monitoring protocol design.

### **Program Reporting and Evaluation**

Annual monitoring reports that summarize the results of each year’s monitoring efforts will be provided to the RMOC, RMUCs, and the Land Manager. The MPA will be responsible for preparing and distributing these reports. The Biological Monitoring Report will include, at a minimum, the following:

1. Objectives for the Monitoring Program for that year
2. Effects on Covered Species and conserved natural communities
3. Location of sampling sites
4. Methods for data collection and variables measured
5. Frequency, timing, and duration of sampling for the variables
6. Description of the data analysis in terms of what, how, and by whom
7. Evaluation of progress toward achieving measurable biological goals and objectives
8. Suggested changes/feedback for Adaptive Management
9. Cause-and-effect relationships
10. Results of data analysis
11. The priorities for next year

The MPA will be responsible for reviewing the annual reports working in cooperation initially with the program biologists, the Land Manager and RMUCs. The administrator, Land Manager, and the respective RMUCs will evaluate the results of annual monitoring, and will address relevant questions including the following:

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1. Are the protocols providing data with sufficient resolution to detect significant changes? If not, what alternatives are available? Proposals for changes should be considered, discussed, modified per the discussion, and agreement on an implementation strategy should be reached.
2. Do any of the data collected with respect to species or conserved natural communities indicate early signs of decline or degradation (independent of natural fluctuations in resources) in response to the changed occurrence of known threats? If so, are more precise data required? How should the monitoring design be modified to acquire more precise data?
3. What are the appropriate management responses and ways to implement them? If no management responses are readily available, proposals and funding for research to develop and test potential management tools should be recommended.
4. Do monitoring data indicate management actions have been effective? What are the appropriate measures of success in response to a management action? Is the design and placement of monitoring stations sufficiently sensitive to measure management effects when they occur? If the management tools are ineffective, propose and fund research to develop and test new tools.
5. Are data analyses sufficient to answer the questions above? Is the nested integration of data on landscape, natural community, and species level monitoring occurring? Does it provide the desired level of resolution and understanding? If not, review procedures, and if necessary, fund training for data analysts and lead biologists on appropriate data analysis tools.

This annual Biological Monitoring Report review and evaluation will result in an analysis of the results and a series of recommendations. The results of the initial review process will be presented to the RMOC.

### **Work Plan, Schedule, and Budget**

Section 8.8 describes the work plan, personnel needs, and budget for the baseline monitoring phase (years 1 – 5) and the long-term monitoring phase (ongoing), and for the Management Program. The cost estimates for the implementation of both the monitoring and management components of this program are dependent on assumptions regarding how, and by whom, these tasks will be completed. Since this is, by definition, an adaptive program, change is inevitable.

Detailed budgets for biological monitoring, land management, and Adaptive Management are presented in Section 8.8.3. The total costs for these are included in the cost summary in ES 5 above.

## ***E.S.9 Species Accounts and Conservation Measures***

The following conservation approaches involve acquisition, biological monitoring, and Adaptive Management actions that will be used to achieve Conservation of the Covered Species.

1. Conserve, restore, and manage sustainable populations in as many Core Habitat areas as Feasible within the Plan Area. The maximum number of Core Habitat areas available is delineated for Conservation. Tables 9-1a and 9-1b shows the Conservation Areas where each species is conserved and identifies Core Habitat areas.
  - 1a. Within Core Habitat areas, maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.
2. Conserve Other Conserved Habitat, representative of the range of environmental conditions within which the species is known to occur. Incorporate a range of environmental gradients (e.g., slope, elevation, aspect) and high habitat diversity to provide for shifting species distributions.
3. Provide for population fluctuation, which may include spatial shifts through time as a result of responses to local environmental conditions. Provide opportunities for dispersal and resultant genetic and demographic exchange among populations, which fosters genetic diversity.
4. Protect Essential Ecological Processes that sustain Core Habitat and Other Conserved Habitat areas. Essential Ecological Processes, including sand source areas and sand transport systems, hydrological systems, watershed features, and flooding regimes, will be protected.
5. Maintain Biological Corridors and Linkages among Core Habitat areas to sustain the effective movement and interchange of organisms between habitat areas inside and outside the Plan Area to the Maximum Extent Feasible.
6. Implement a Monitoring Program that identifies trends in species and community level resources protected under the Plan.
7. Implement an Adaptive Management Program that includes species-specific actions to secure and enhance habitat quality and provide for long-term population viability.
8. Identify activities, and any restrictions on those activities, allowed within Conservation Areas that are compatible with the Conservation of species, habitats, conserved natural communities, and their associated ecological functions.
9. Control threats, which may include habitat fragmentation, invasive plant and animal species, OHV use, and edge effects.

The application of these measures throughout the Plan Area varies depending on the species. Section 9 in the Plan describes individual Conservation Strategies for each species together with background information on the species. These species Conservation Strategies are arranged by taxonomic group, beginning with plants. The individual species accounts include all

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Species Conservation Goals and Objectives that relate to each of the Covered Species, such that a summary of the conservation approach for each species is found in Section 9.

Tables 9-1a and 9-1b in Section 9.1.3 provide a summary of the occurrence of each Covered Species within each Conservation Area. They also provide a description of whether modeled Habitat for a given species involves Core Habitat or Other Conserved Habitat, or both. The number of acres of each habitat type to be conserved is also provided. These tables are intended to provide an overview of the Habitat for each Covered Species to be conserved within each Conservation Area.

The plants proposed for coverage include two federal Endangered Species, the Coachella Valley milkvetch and the triple-ribbed milkvetch, and three species with no official status, Little San Bernardino Mountains linanthus, Mecca aster, and Orocopia sage. Some of the features of the biology of plant species warrant special note with regard to the general Conservation Strategies. General measures common to all of these plants are listed below and measures specific to a given species are described in the Species Conservation Goals and Objectives, and the species-specific Adaptive Management discussion for each plant in Section 9.2.

1. Maintain Essential Ecological Processes for plants, including pollination, seed dispersal, soil characteristics, mycorrhizal relationships, and nitrogen fixation.
2. Restore and enhance degraded Habitat, using native vegetation only, as necessary according to monitoring results.
3. Evaluate whether establishment of a seed bank to guarantee against extinction is needed.

The two insect species covered under this Plan are the Coachella Valley giant sand-treader cricket and the Coachella Valley Jerusalem cricket, both endemic to the Coachella Valley and the Plan Area. Some of the features of the biology of insect species warrant special note with regard to the general Conservation Strategies. General measures common to both of these insects are listed below, and measures specific to either species are considered in the individual species descriptions in Section 9.3.

1. Maintain habitat features and ecological processes essential to insects, including availability of food plants and suitable local environmental conditions such as vegetation and soil microclimates.
2. Limit, to the maximum extent Feasible, general application of pesticides or other toxic chemicals within Conservation Areas. Application of pesticides or toxic chemicals outside Conservation Areas should be designed to avoid contamination within Conservation Areas.
3. Restore and enhance degraded Habitat as necessary according to monitoring results.

The only fish species covered under this Plan is the desert pupfish. Conservation measures specific to the desert pupfish are found in Section 9.4. The only amphibian covered under this Plan is the federally endangered arroyo toad. Conservation measures specific to the arroyo toad are found in Section 9.5.

Three species of reptile are covered under this Plan: the desert tortoise, listed as threatened by the federal and state governments; the Coachella Valley fringe-toed lizard, listed as a state



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Endangered and a federally Threatened Species; and the flat-tailed horned lizard, a species proposed for federal listing. General measures common to all of these reptiles are listed below and measures specific to a given species are considered in the Conservation Strategy for each of the species in Section 9.6.

1. As part of the Monitoring and Adaptive Management Program, evaluate the impact of “artificial” perches for predators, including power poles and landscape trees, along the edges or adjacent to Conservation Areas. Some evidence from the Thousand Palms Preserve suggests that predation rates may be increased due to these artificial perches.

Eleven bird species are covered under this Plan. The birds include species that are resident in the Coachella Valley, including the burrowing owl, California black rail, crissal thrasher, and Le Conte’s thrasher. A number of the species are migratory, occurring in the Coachella Valley primarily during migration, or during the nesting season. The migratory species include the gray vireo, Yuma clapper rail, and five riparian bird species, including the least Bell’s vireo, southwestern willow flycatcher, summer tanager, yellow warbler, and yellow-breasted chat. For the riparian bird species, consideration was given in the conservation plan to Habitat used for breeding and Habitat used during migration. General measures common to all of these birds are listed below and measures specific to a given species that are not addressed in the general conservation measures are listed as species-specific conservation measures in Section 9.7.

1. Avoid impacts to Habitat during nesting season, generally from February through July, for all bird species.

The mammals covered under the Plan are the federally endangered Peninsular bighorn sheep, and three small mammals with no formal status, the Palm Springs pocket mouse, the Coachella Valley round-tailed ground squirrel, which has recently been given federal candidate for listing status, and the southern yellow bat. Measures specific to a given species are described in Section 9.8.

## ***E.S.10 Natural Community Accounts and Conservation Measures***

The natural communities conserved under the Plan provide the Habitats for the Covered Species. Conservation of these natural communities also includes Conservation of the rich biological diversity of the Plan Area on an ecosystem-wide basis, consistent with the state’s Natural Community Conservation Plan Act goals.

The following conservation approaches involve acquisition, biological monitoring, and Adaptive Management actions that will be applied to achieve Conservation of the natural communities.

1. Conserve, restore, and manage representative stands of each natural community in one or more Conservation Areas. The maximum number of available natural community stands is delineated for Conservation wherever feasible. Table 10-1 shows the Conservation Areas where each natural community is conserved and identifies the number of acres conserved.

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2. Conserve natural community occurrences representative of the range of environmental conditions within which the community is known to occur. Incorporate a range of environmental gradients (e.g. slope, elevation, aspect) and high habitat diversity.
3. Protect Essential Ecological Processes that sustain conserved natural communities. Essential Ecological Processes, including the sand source areas and sand transport systems, hydrological systems, including watershed features and flooding regimes, and fire regimes will be conserved.
4. Implement a Biological Monitoring and Adaptive Management Program to contribute to maintenance of conserved natural communities within Conservation Areas. Additional research on natural community composition, ecology, and dynamics may be included in these actions.
5. Restore and enhance degraded natural communities, using native species only, as necessary according to monitoring results.
6. Identify activities, and any restrictions on those activities, allowed within Conservation Areas that are compatible with the Conservation of species, habitats, and conserved natural communities, and their associated ecological functions.
7. Control threats, which may include habitat fragmentation, invasive plant and animal species, alteration of ecological processes, including hydrological regimes and sand transport, OHV use, and edge effects.

Table 10-1 in Section 10.1.3 provides a summary of the occurrence of each natural community within each Conservation Area. The number of acres of each natural community to be conserved is also provided. This table is intended to provide an overview of the natural communities to be conserved within each Conservation Area.

For each of the seven sand-affiliated communities included in the Plan, Section 10.2 contains a natural community Conservation Strategy and a natural community account, including natural community characteristics, typical species, and significant threats. General conservation measures, which are common to all these sand dune and sand field types, are listed below.

1. Conserve the sand source/transport systems to ensure sustainability of the sand dunes and sand fields. Maintain, and enhance where feasible, aeolian (wind-blown) and fluvial (water-borne) sand transport systems and existing hydrological regimes.
2. Control disturbance and compaction of sand dunes and sand fields.
3. Avoid stabilization of sand dunes due to spread of non-native plant species and effects from adjacent Development.

Section 10.3 contains a summary description, including natural community characteristics, typical species, and significant threats, for the three desert scrub communities included in the Plan. General conservation measures, which are common to all these desert scrub types, are listed below.

1. This natural community may be subject to increased fire frequency as a result of invasive annual grasses and other non-native plant species. As part of the Adaptive Management

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and Monitoring Plan, establish a research element that addresses the impact of non-native species.

2. This natural community is adaptively managed, according to an approved Adaptive Management and Monitoring Plan, which would include management to prevent damage from OHV activity and other threats.

Section 10.5 contains a summary description, including natural community characteristics, typical species, and significant threats, for each of the four chaparral communities included in the Plan. General conservation measures, which are common to all these chaparral types, are listed below.

1. As part of the Adaptive Management and Monitoring Program, evaluate the need to manage fire to avoid senescence of vegetation due to fire suppression. Develop appropriate fire management prescriptions for chaparral natural communities. This may include the use of prescribed fire and/or standards for controlling wildfires to maintain or restore these communities.
2. Essential Ecological Processes, including fire regimes, are protected to ensure sustainability of the community. Please refer to the Section 4.3 subsections for specific goals for ecosystem processes.

Section 10.6 contains a summary description, including natural community characteristics, typical species, and significant threats, for the two marsh communities proposed for coverage in the Plan. General conservation measures, which are common to these marsh types, are listed below.

1. Ecological processes, including water availability, are protected to ensure sustainability of the community. Please refer to the Section 4.3 subsections for specific goals for ecosystem processes.
2. To the extent activities are under Plan authority, maintain water levels, water quality and proper functioning condition of ponds, springs, and other wetlands.
3. Control of non-native plants, particularly tamarisk, is implemented.
4. As part of the Monitoring and Adaptive Management Plan, complete hydrologic studies for the Salt Creek area to determine if the water sources for marsh areas are adequately protected or if additional water sources may be needed.
5. This natural community is adaptively managed, according to an approved Adaptive Management and Monitoring Plan.

Section 10.7 contains a summary description, including natural community characteristics, typical species, and significant threats, for each of the four riparian communities and the desert fan palm oasis community proposed for coverage in the Plan. Riparian communities are considered to be at great risk throughout Southern California (Bowler 1990, Davis et al. 1996). General conservation measures, which are common to all these riparian types, are listed below.

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1. Ecological processes, including flooding regimes and water table continuity, are protected to ensure sustainability of the community. Please refer to the Section 4.3 subsections for specific goals for ecosystem processes.
2. To the extent activities are under Plan authority, maintain water levels, water quality and proper functioning condition of springs, streams, and other natural water sources that support these conserved natural communities.
3. Riparian Habitat along the Whitewater River channel from Indio south that is currently subject to periodic removal during maintenance of the Channel to maintain flood capacity will be replaced by the establishment of permanent riparian Habitat as a result of an agreement, and/or Plan participation, with the CVWD.
4. Remove and control invasive non-native plants, including tamarisk and arundo (very limited in occurrence).
5. This natural community is adaptively managed, according to an approved Adaptive Management and Monitoring Plan.
6. As part of the Monitoring and Adaptive Management Plan, complete hydrologic studies for the Salt Creek area to determine if the water sources for marsh areas are adequately protected or if additional water sources may be needed.

Section 10.8 contains a summary description, including natural community characteristics, typical species, and significant threats, for desert dry wash woodland and mesquite bosque. General conservation measures, which are common to these dry wash community types, are listed below.

1. Ecological processes, including flooding regimes, are protected to ensure sustainability of the community. Please refer to the Section 4.3 subsections for specific goals for ecosystem processes.
2. Potential changes, including proposed Development, are evaluated based on the impacts to the watershed, or drainage basin, for dry wash communities.
3. Reduce and control the spread of non-native tamarisk and other invasive species.

Section 10.9 contains a summary description, including natural community characteristics, typical species, and significant threats, for each of the two pinyon and juniper woodland communities proposed for coverage in the Plan. General conservation measures, which are common to both of these communities, are listed below.

1. Through the Monitoring and Adaptive Management program, develop appropriate management prescriptions for pinyon-juniper woodland natural communities. This may include the use of prescribed fire and/or standards for controlling wildfires to maintain or restore these communities.