APPENDIX E

Otay Ranch Resource Management Plan Phase 2

Otay Ranch

Phase 2
Resource Management Plan

JUNE 4, 1996

Otay Ranch
Phase 2 Resource Management Plan

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I. INTRODUCTION

The goal of the Otay Ranch Resource Management Plan is to establish a permanent preserve within Otay Ranch to protect and enhance biological, paleontological, cultural and scenic resources, maintain biological diversity, and promote the survival and recovery of native species and habitats.

This document compiles the many resource related studies, plans and programs required to be performed prior to the adoption of the initial Otay Ranch Sectional Planning Area (SPA). These tasks are collectively referred to as the Phase 2 Resource Management Plan (Phase 2 RMP).

A. Background

1. Phase 1 Resource Management Plan

The initial Otay Ranch Resource Management Plan (RMP) is a comprehensive plan for the preservation, enhancement and management of sensitive, natural and cultural resources within Otay Ranch. The RMP was adopted by the County of San Diego and City of Chula Vista, concurrent with the enactment of the Otay Ranch GDP. For the purpose of clarity, this document refers to the initial RMP as the Phase 1 RMP.

The Phase 1 RMP identifies an open space system as a permanent 11,375 acre Resource Preserve dedicated to the protection and enhancement of multiple resources present on Otay Ranch (Exhibit 1). The Otay Ranch Resource Preserve also connects large areas of open space through a series of wildlife corridors.

LEGEND

- Preserve Area
- Vernal Pool Preserve Area
- Sensitive Resource Study Area
- Restricted Development Areas
- Potential Avian Corridor

Upper Otay Reservoir

Lower Otay Reservoir

1" = 5400'

Otay Ranch Phase 2 Resource Management Plan

11,375-Acre Resource Preserve

EXHIBIT 1

In addition to the preserve, other "restricted development" areas and parks have been designated in the Otay Ranch GDP. Combined, over 13,000 acres or 62% of Otay Ranch is to be preserved as open space or parks.

2. Phase 2 Resource Management Plan

The Otay Ranch General Development/Subregional Plan (GDP/SRP) provides that the Phase 1 RMP is to be implemented through the Phase 2 RMP. Unlike the Phase 1 RMP, the Phase 2 RMP is not a single plan or document, but rather a process. That is, the Phase 2 RMP encompasses a series of tasks that must be performed over time throughout implementation of the Otay Ranch General Development Plan.

Some Phase 2 RMP tasks are fully satisfied upon the completion of a single study or the creation of a plan (i.e. Otay Valley Parcel Cultural Resource Survey). Other Phase 2 RMP tasks must be completed as a condition of approval of subsequent Otay Ranch SPAs (i.e. SPA Level Cultural Resource Site Testing). Still other Phase 2 RMP tasks must be performed over time, even if there are no pending discretionary actions (i.e. the Biota Monitoring Program).

Accordingly, it is incorrect to assume that adoption of this document constitutes satisfaction of all Phase 2 RMP requirements. Instead, this document is a collection of the implementation studies, plans and programs which must be performed or processes which must be initiated as a condition of approval of the initial Otay Ranch SPA.

B. Document Organization

As a dynamic planning process, it is difficult to organize the Phase 2 RMP into a single report. Therefore, this document should be viewed as a status report on the Phase 2 RMP tasks at the time of approval of the initial Otay Ranch SPA.

Subsequent SPAs must re-examine the status of many of the Phase 2 RMP tasks. Additionally, some Phase 2 RMP tasks need not be started until the processing of subsequent SPAs, or the occurrence of some other event, such as adoption and implementation of the Otay Valley Regional Park Plan.

This document reflects the fluid nature of many of the topics addressed and therefore is organized to combine tasks which have similar substantive characteristics or procedural requirements.

The document is organized into five chapters.

The first chapter, "Introduction," contains background materials and addresses administrative topics. The chapter discusses the background of the Phase 1 and 2 RMPs, the organization of this document, the manner in which State and Federal Resource Agencies have been consulted, the relationship of the RMP to the MSCP, and the RMP amendment process and procedures.

The second chapter addresses activities related to preserve management, conveyance and funding. This chapter addresses the selection of the Preserve Owner/Manager, a Preserve Conveyance Plan and Preserve Funding Plan. The Otay Ranch GDP/SRP requires approval of these three Phase 2 RMP tasks by both the City of Chula Vista and the County of San Diego prior to adoption of the initial Otay Ranch SPA.

The third chapter contains the Ranch-wide Phase 2 RMP Studies, Plans and Programs. The chapter divides these efforts into two categories:

- Ranch-wide Phase 2 RMP Studies
- Ranch-wide Phase 2 RMP Plans and Programs

"Phase 2 RMP Studies," review tasks which provide a data base from which plans and programs are prepared. Once completed, these studies will generally not be revisited. "Phase 2 RMP Plans and Programs" are those efforts which generally require a continuing commitment to implementation.

Four of the "Phase 2 RMP Studies" were completed prior to the adoption of the original Otay Ranch GDP/SRP, and require no further action. These studies include:

- Vernal Pool Study;
- Wildlife Corridor Study;
- Raptor Study; and
- Resource Identification and Mapping.

The fourth chapter contains the SPA One Phase 2 RMP Studies, Plans and Programs. This chapter contains those efforts which solely focus on the SPA One Planning Area. The Community Garden Plan and Trails Plan are also addressed in the SPA One Parks, Recreation, Open Space and Trails Master Plan and in the Overall Design Plan (ODP).

The fifth chapter identifies tasks listed in the Phase 2 RMP which are not required to be performed as part of the initial SPA plan. These tasks are referenced in this document to acknowledge their importance and to

assure that they are not overlooked later. Those tasks include:

- Otay Valley Riparian Habitat Restoration Plan;
- Demonstration Agriculture Plan; and
- The Otay Valley Regional Park Active Use Plan.

Each of these three tasks relate to future uses within the Otay Valley. The Otay Valley is currently the subject of study by the Otay Valley Regional Park JEPA. These tasks will be performed after completion of that joint planning effort.

Several of the Phase 2 RMP Studies, Plans and Programs are of such scope and size that they cannot be comfortably contained in a single document and are therefore presented as appendices to this document. The appendices are as follows:

- Appendices F1. 1995 Contribution to Ongoing California Gnatcatcher and Cactus Wren Studies, Dudek 1995 (Gnatcatcher and Cactus Wren Studies)
- Appendices F2. Report on the Flora of the Otay Ranch Vernal Pools 1990-1991, San Diego County, California, Dudek 1992 (Vernal Pool Study)
- Appendices F3. Baldwin Otay Ranch Wildlife Corridor Study, Ogden, 1992 (Wildlife Corridor Study)
- Appendices F4. Otay Ranch Raptor Management Study, Ogden 1992 (Raptor Study)

- Appendices F5. Otay Valley Parcel Cultural Resources Systematic Survey, Smith 1995 (Cultural Resources Survey)
- Appendices F6. Vernal Pool Preservation Management Plan, Dudek 1995 (Vernal Pool Management Plan)
- Appendices F7. Range Management Plan, Dudek/Wright 1995
- Appendices F8. Otay Ranch Coastal Sage Scrub and Maritime Succulent Scrub Habitat Replacement Master Plan, Dudek 1995 (Coastal Sage Scrub Master Plan)
- Appendices F9. SPA One 1994/1995 Biological Data Base, Dudek 1995 (SPA One Biological Data Report)
- Appendices F10. Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Otay Ranch Sectional Planning Area One and Annexation Project, Smith 1995 (SPA One Cultural Resources Site Analysis)
- Appendices F11. Biota Monitoring Program, Dudek 1995
- Appendices F12. Preserve Owner/Manager JEPA

To foster a clearer understanding of the Phase 2 RMP document, Exhibit 2 provides a listing of all the Phase 2 RMP tasks. This exhibit identifies those tasks that are discussed more thoroughly in an appendix, those tasks which were completed concurrent with the adoption of the Otay Ranch GDP/SRP, those tasks which are also addressed in one of the SPA One documents and those tasks which were not performed as part of the initial SPA, but must be performed as a condition of a subsequent approval.

Exhibit 2
Phase 2 Resource Management Plan Tasks

Title	Appendix To Phase 2 RMP	Comment
INTRODUCTION		
Background		
Document Organization		
Resource Agency Consultation		
Relationship to MSCP		
RMP Amendments		
Procedures for Ongoing Species Listings		
PRESERVE MANAGEMENT, CONVEYANCE, FUNDING		
Preserve Owner/Manager	F12	
Preserve Conveyance Plan		
Preserve Funding Plan		
RANCH-WIDE PHASE 2 RMP STUDIES, PLANS AND PROGRAM		
Ranch-Wide Phase 2 RMP Studies		
California Gnatcatcher and Cactus Wren Studies	F1	
Vernal Pool Study	F2	Completed as Part of GDP/SRP
Wildlife Corridor Study	F3	Completed as Part of GDP/SRP
Raptor Study	F4	Completed as Part of GDP/SRP
Resource Identification and Mapping		Completed as Part of GDP/SRP
Otay Valley Parcel Cultural Resources Survey	F5	
Ranch-Wide Phase 2 RMP Plans and Programs		
Vernal Pool Management Plan	F6	
Range Management Plan	F7	
Coastal Sage Scrub Master Plan	F8	
Coastal Sage Scrub Pilot Restoration Program		
Biota Monitoring Program	F11	
Conceptual Infrastructure Plan		
Nature Interpretive Center Site Analysis		
SPA ONE PHASE 2 RMP STUDIES, PLANS AND PROGRAMS		
Biological Resources Study	F9 - A, C, D	
Wetland Delineation	F9 - B	
Riparian Restoration Plan		
Native Grassland Restoration Plan		

Exhibit 2 (Concluded)

Title	Appendix To Phase 2 RMP	Comment
Preserve Edge Plan		
Cultural Resources Site Testing	F10	Located in the SPA One EIR Plan
Community Garden Plan		Located in the SPA One Plan, Park Master Plan
Trail Plan		Located in SPA One Plan, ODP, Park Master Plan
TASKS PERFORMED BY LATER SPAs		
Otay Valley Riparian Habitat Restoration Plan		Condition of Later Approvals
Demonstration Agriculture Plan		Condition of Later Approvals
Otay Valley Regional Park Active Use Plan		Condition of Later Approvals

C. Resource Agency Consultation

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language relative to consultation with resource agencies:

> Policy: If feasible, negotiate a Memorandum of Agreement (MOA) (or separate memoranda) with the resource agencies concurrent with the Phase 2 RMP. The purpose of the MOA shall be to achieve concurrence on the RMP management approach and facilitate obtaining necessary Federal and State permits for the project at a later date. (GDP/SRP Page 385; Phase 1 RMP Page 118)

Events have, in large part, overtaken this policy. Over the last four years, the City of San Diego and participating jurisdictions, including the County of San Diego and the City of Chula Vista, have endeavored to prepare and adopt the Multi-Species Conservation Plan (MSCP), (see discussion below). The draft MSCP plan was released for public review in May 1995, followed by release of the Draft EIR/EIS.

The adopted Otay Ranch land plan, EIR and RMP are consistent with the draft MSCP preserve boundaries. The Otay Ranch land plan, when coupled with the requirements of the Program EIR and the RMP, meets or exceeds the MSCP performance standards for virtually every species or habitat of concern (see Exhibit 3).

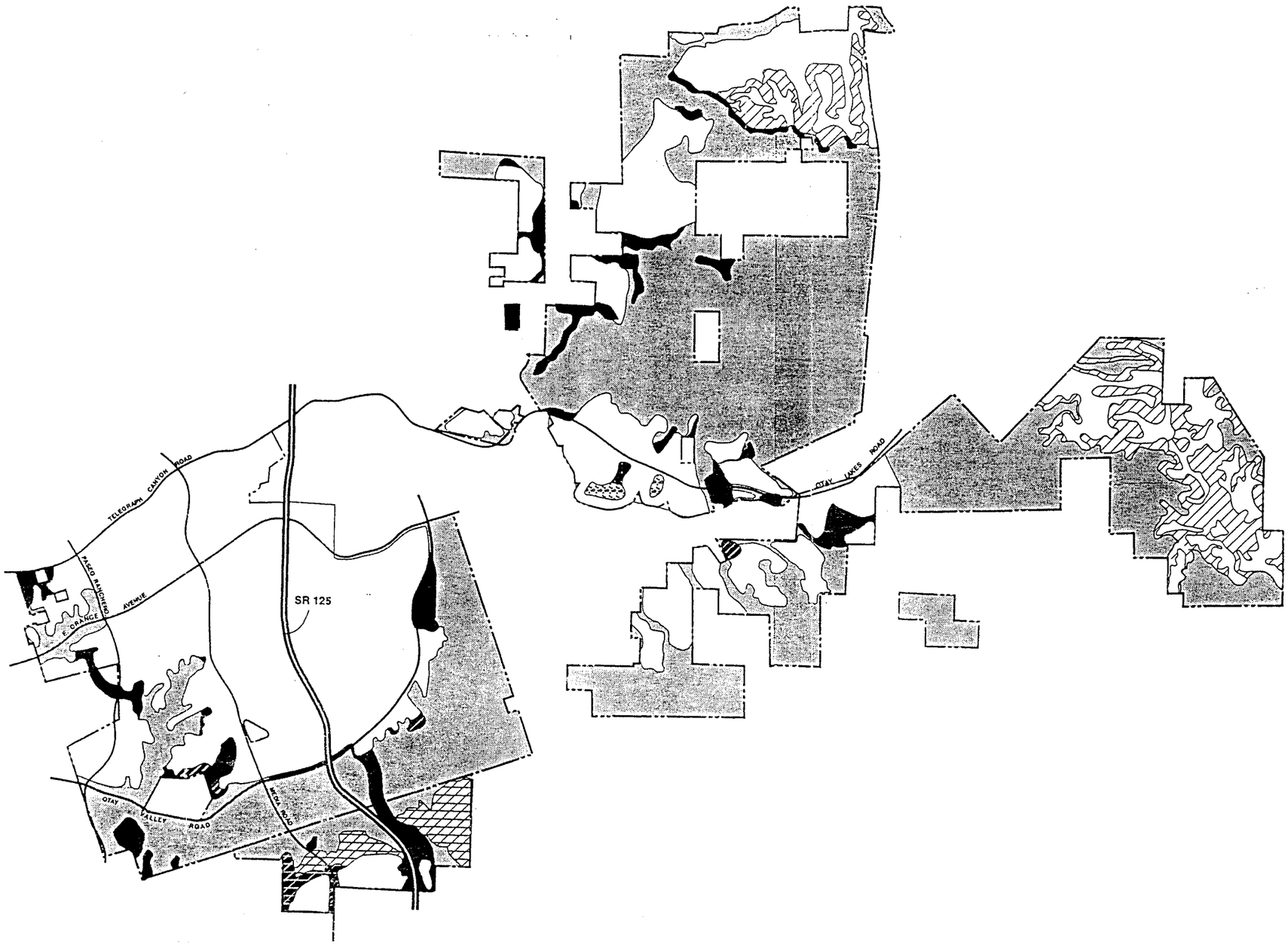
As part of the public review process for both documents, the U.S. Fish and Wildlife Service and California Department of Fish and Game issued a joint letter expressing concerns about various portions of the proposed MSCP. The correspondence focused, in

part, on the Otay Ranch Land Plan and preserve boundaries. The state and federal agencies expressed their desire that some areas planned for development be included within the MSCP preserve area. The correspondence addressed the following areas:

- South of the Otay Valley
- Development adjacent to and within Salt Creek
- Development south and east of Lower Otay Lakes (Village 15)
- Development north of Lower Otay Lakes (Village 13 - Resort)
- Development near Thornmint within the Otay Ranch Resort site. (Village 13)
- Development within Proctor Valley (Village 14)
- Development from the northern and middle areas of the Inverted "L" (Village 14)
- Development and Road Crossings in the Otay Valley

Implementation of the agencies' recommendations would result in a loss of 3,651 homes, unless relocated in other "development bubbles" within the Ranch and an increase in the Otay Ranch open space and park lands from ±13,000 acres to ±15,000 acres (over 72% of Otay Ranch).

In response to stated concerns, discussions were held amongst the property owners, the City of Chula Vista, the County of San Diego and the state and federal resource agencies. The Baldwin Company responded to the agencies' letter in correspondence dated May 15, 1995. The response noted that the state and federal agencies commented on the Otay Ranch Phase I Progress Plan, not the adopted General Development



Legend

- Otay Ranch Management Preserve Area
- Addition to Management Preserve Area
- Vernal Pool Preserve Area
- Addition to Vernal Pool Preserve Area
- Sensitive Resource Study Area
- Addition to Sensitive Resource Study Area
- Limited Development Area
- Addition to Limited Development Area

North

0 2500 5000

Note: All locations are approximate.

Otay Ranch Phase 2 Resource Management Plan

Land Plan Changes Between Phase 1 Progress Plan and the Adopted Otay Ranch GDP/SRP

EXHIBIT 3

Plan. As a consequence, the agencies' correspondence did not take into account the numerous changes made to the land plan between the Phase I Progress Plan and the adopted Otay Ranch GDP/SRP. Exhibit 3 depicts the land plan changes made between the Phase I Progress Plan and the adopted Otay Ranch GDP/SRP.

It was also noted that the state and federal agencies' comments looked solely at the land plan and did not consider (1) topography; (2) the requirements of the Otay Ranch Program EIR; (3) the requirements of the Otay Ranch Phase 1 RMP; and (4) the public benefit resulting from the creation of a managed preserve system with an identified funding source.

Below is a summary of the agencies' comments and an analysis of how the land plan, EIR, and RMP responded to the comments.

1. Otay River Valley

a. Resource Agencies' Comment

Eliminate development south of Otay Valley in order to preserve Otay Mesa mint, California Orcutt grass, little mouse tail (historical location), variegated dudleya, prostrate navarretia, San Diego fairy shrimp, Riverside fairy shrimp, western burrowing owl and other grassland species.

b. Analysis

The developable areas south of the Otay Valley which impact vernal pool and grassland areas, and which were included in the Phase I Progress Plan, were deleted in the approved land plan. Development was moved south of the proposed Otay Mesa vernal pool

preserve. The Otay Ranch CEQA Findings and Phase 1 RMP subject the project to minimum standards for the protection of this habitat and the species as highlighted below:

Vernal Pools. The project preserves 95% of all large or high-quality, high-value vernal pool complexes and 95% of all other vernal pools. This includes preservation of the "J" series of pools on the Otay Mesa. The effect upon the impacted 5% of the habitat is substantially lessened by restoration/enhancement of damaged vernal pool habitat within disturbed areas of the preserved vernal pool complexes so that no net loss of vernal pool habitat area occurs. A minimum 100 foot wide buffer around all preserved vernal pool complexes and associated watersheds is required.

Navarretia - The project preserves 100% of the known locations of the species and retains all of the portion of the J29 pool on the Otay Mesa with Navarretia. The Program EIR concluded that impacts to this species have been reduced to below a level of significance.

Riverside Fairy Shrimp - The project preserves 100% of occupied habitat of this species; requires a focused study of the distribution and abundance of the species within vernal pool habitat on Otay Ranch at the SPA level; and requires implementation of a mitigation plan that is to include a number of specifically identified requirements, including a 100 foot buffer around all preserved vernal pool complexes and associated watersheds.

San Diego Fairy Shrimp - The project preserves 95% of occupied habitat for this species, while requiring all of the same site-specific analyses and mitigation plans identified with regard to the Riverside fairy shrimp above.

California Orcutt Grass - The requirements of the RMP and CEQA findings require 100% preservation of this species.

Variegated Dudleya - The project preserves 75% of this species on site, including representative populations from each of the three large parcels that comprise the Otay Ranch. In addition, all impacted plants are to be transplanted to appropriate habitat and clay soils within the same parcel. The Program EIR concluded that impacts to this species have been reduced to below a level of significance.

Burrowing Owl and other Grassland Species - The Otay Ranch project is required to preserve 80% of native grassland and 59% of all non-native grassland. These standards far exceed the standards to be met by the proposed MSCP, which preserves only 37% of grassland.

Otay Mesa Mint - The project, through RMP Policy 2.9, preserves 100% of this species.

2. Salt Creek

a. Resource Agencies' Comments

Pull development back from Salt Creek to provide buffers and avoid impact to habitat inside drainages in order to preserve California gnatcatcher and coastal cactus wren.

b. Analysis

This is an area where the Phase I Progress Plan differs significantly from the adopted GDP/SRP. In response to the resource agencies' earlier comments, development was pulled back significantly from the

Salt Creek area to avoid gnatcatcher and cactus wren habitat. Hunte Parkway was realigned to avoid a concentrated area of habitat. This plan change eliminated 460 homes and 93 acres of development. Moreover, the entire Salt Creek Canyon area was placed into the open space preserve with specific requirements prohibiting structures from intruding into those areas.

The minimum habitat and species preservation standards for coastal sage, cactus wren and gnatcatchers imposed upon the Otay Ranch project exceed MSCP performance as follows:

Coastal Sage Scrub/Gnatcatcher - The project is designed to preserve 70% of the coastal sage scrub on site and 52% of the documented gnatcatcher pairs and individuals. The CEQA findings and Phase 1 RMP specifically identify Salt Creek as being one of the significant areas to be preserved. In addition, 1,300 acres of Otay Ranch coastal sage are to be restored, including a minimum of 56 acres of maritime succulent scrub. A detailed Coastal Sage Scrub Revegetation Plan has been prepared as part of Phase 2 RMP (see Appendix F8). A minimum 100 foot buffer area around all preserved coastal sage scrub is required. In total, the 70% habitat preservation standard, coupled with the 1,300 acres of restoration (i.e., approximately 15% additional habitat) results in approximately 85% of the coastal sage being preserved and/or restored. By way of comparison, the proposed MSCP targets only 60% of the coastal sage as being preserved.

Cactus Wren - The Phase 1 RMP and CEQA Findings of Fact require Otay Ranch to meet a standard of "no loss of viable cactus wren populations." In addition, the Otay Ranch is required to reassess cactus wren impacts at the SPA level and conduct focused surveys to determine abundance and distribution. Specific areas of CSS/MSS that are to be enhanced or restored

include the agricultural lands on the mesa and in ravines bordering the west side of Salt Creek Canyon and the agricultural land, non-native grasslands and disturbed CSS habitat along the north slope of the Otay Valley.

3. Southeast of Lower Otay Lakes

a. Resource Agencies' Comments

Eliminate development southeast of Lower Otay Lake in order to resolve general preserve design and coastal sage scrub/California gnatcatcher connectivity issues, and preserve Thorne's hairstreak, willowy monardella, variegated dudleya, San Diego goldenstar and Orcutt's bird's beak.

b. Analysis

Species - With regard to the species of concern identified as justifying this recommendation, the CEQA Findings of Fact and Phase 1 RMP establish strict standards.

Thorne's Hairstreak - The approved plan preserves 100% of occupied habitat. In addition, focused surveys must be conducted at the SPA level and a mitigation plan must be prepared and implemented which will avoid impacts to occupied habitat and preserve all occupied habitat in natural open space. A Fire Management Plan must also be prepared and implemented in an effort to avoid destruction of the Tecate cypress habitat.

Willowy Monardella - The project preserves 100% of this species on site. Standards also require that the intact population must be monitored for 5 years to assure that indirect impacts do not jeopardize the

population. Remedial measures must be implemented to ensure preservation of the intact population. The Otay Ranch EIR concluded that any impacts to this species have been reduced to below a level of significance.

Variegated Dudleya - Discussed above.

San Diego Goldenstar - The project preserves 54% of known point occurrences for the species on site, including representative populations from each of the three parcels. Corms and soil must be salvaged and species introduced into appropriate soils and habitat in protected open space within the same parcel. In addition, (a) sensitive plant surveys must be conducted to quantify acreage of occupied habitat and plant densities or population sizes for each SPA; (b) a mitigation plan must be implemented which requires an experimental phase and a maintenance and monitoring program; and (c) indirect impacts to a preserved population of the goldenstar must be avoided or minimized by providing (1) buffer areas at a minimum of 50 feet in width; (2) water runoff diversion; and (3) a fire management plan.

Orcutt's Bird's Beak - While the approved land plan southeast of Lower Otay Lake may appear to create a significant impact to the canyon southeast of the lake that currently hosts Orcutt's bird's beak, the CEQA Findings not only require 75% preservation of all Orcutt's bird's beak throughout the project, but also specifically require avoidance of all impacts to the population of Orcutt's bird's beak in the canyon south of the San Diego Air Sports Center. All of these canyon slopes are required to be included in the open space preserve. The Program EIR concluded that all impacts to Orcutt's bird's beak have been reduced to below a level of significance.

Coastal Sage/Preserve Design Issues - With regard to issues of general preserve design and coastal sage

scrub/California gnatcatcher connectivity, the project -- through the CEQA Findings -- is required to comply with comprehensive wildlife corridor criteria identified in the Baldwin Otay Ranch Wildlife Corridor Study conducted by Ogden in 1992 (Appendix F3). The Baldwin Otay Ranch Wildlife Corridor Study identified the existing linkages between large habitat areas on the Otay Ranch as well as offsite, and developed detailed recommendations as to how those linkages could be preserved. The species chosen as focal target species -- i.e., the species to be preserved -- were the California gnatcatcher, the cactus wren, the mule deer, the mountain lion and the bobcat. The explicit goal of the study is: "to retain the linkages between the San Ysidro Mountains, Jamul Mountains and San Miguel Mountains," (Baldwin Otay Ranch Wildlife Corridor Study, Page 1-9), it being specifically recognized that "corridors are....necessary for [the] conservation" of the gnatcatcher (Baldwin Otay Ranch Wildlife Corridor Study, Page 1-5, citing Atwood 1990, Rea and Weaver, 1990).

4. North of Otay Lake

a. Resource Agencies' Comments

Reduce development north of Otay Lake in order to resolve general preserve design and gnatcatcher/coastal sage scrub connectivity issues, reduce edge effects to vernal pools with little mousetail and potential fairy shrimp habitat, and to adequately preserve variegated dudleya, narrow-leaved night shade, and San Diego thornmint.

b. Analysis

Significant changes were made between the Phase I Progress Plan and the approved plan to address these

concerns. With regard to general preserve design and connectivity issues, development that was proposed in the Phase I Progress Plan was deleted to preserve the rim-to-rim topography of the canyon and adjacent knoll which form the principal regional corridor between the Jamul Mountain and the San Ysidro Mountain. Likewise, the K6 vernal pools were placed into a special study area to avoid development until it is determined if the resources are of such significance to require preservation. As to the specific species of concern identified by the Service and the Department:

Variegated Dudleya - Discussed above.

Narrow-Leaved Night Shade - The Jepson Manual now concludes that the narrow-leaved night shade is no longer a valid taxon. Regardless, the project is designed to preserve 75% of this species and is required to reestablish the plant in disturbed areas with suitable soils or introduce it in suitable open space. In addition, (a) sensitive plant surveys must be conducted to quantify acreage of occupied habitat and plant densities or population sizes for each SPA; (b) a mitigation plan must be implemented which requires an experimental phase and a maintenance and monitoring program; and (c) indirect impacts to a preserved population of the goldenstar must be avoided or minimized by providing (1) buffer areas at a minimum of 50 feet in width; (2) water runoff diversion and (3) a fire management plan. The EIR concluded, based on all the above, that impacts to this species have been reduced to below a level of significance.

San Diego Thornmint - This is an example of how the land plan, alone, would appear to indicate that populations of San Diego thornmint in the area north of Otay Lake are impacted. The CEQA Findings, however, require that the project preserve 95% of the overall species on site and specifically require that the largest thornmint population in the area north of

Lower Otay Lake (i.e., approximately 10,000 individuals) be preserved in its entirety. In addition, the project is required to introduce thornmint on appropriate soils throughout the project by salvaging seeds of impacted populations and engaging in nursery propagation. The EIR concluded, based on all the above, that impacts to this species have been reduced to below a level of significance.

5. Proctor Valley

a. Resource Agencies' Comments

Eliminate development from the Proctor Valley area in order to resolve general preserve design and gnatcatcher/coastal sage scrub connectivity issues and to adequately preserve narrow-leaved night shade and potential fairy shrimp habitat.

b. Analysis

This is another area where extensive revisions were made between the Phase I Progress Plan and the final approved plan. The revisions were specifically made for purposes of resolving general preserve design and gnatcatcher/coastal sage scrub connectivity issues.

- Significant areas of development were eliminated from the proposed development in central Proctor Valley on both the northerly and southerly boundaries of the regional wildlife corridor.
- The proposed conference center in the middle of the Proctor Valley Parcel was eliminated to avoid any encroachment into the wildlife corridor.
- Development in the Inverted "L" was eliminated from the ravine and moved well back onto the ridgetop so that animals could access the ravine which leads them northwest over the saddle and into the Sweetwater Reservoir.
- All of the proposed housing along the ridgetop above the lake at the southerly entrance to Proctor Valley, and the southern most portions of the proposed development

bubble in central Proctor Valley, were eliminated to reduce impacts to coastal sage and the local wildlife corridor from Jamul Mountain to Proctor Valley.

With these revisions, the Proctor Valley regional wildlife corridor became an extensive linkage, with a required minimum of 1,300 feet at the northwest end to 2,200 feet at the southeast end. Rim-to-rim topography is to be protected and buffers provided. Proctor Valley Road is required to be elevated across ravines and Otay Lakes Road is to be bridged over the corridors as recommended in the Otay Ranch Wildlife Corridor Study.

6. River Valley Road Crossings

a. Resource Agencies' Comments

Reduce development and road crossings in the Otay Valley, including the south slope in order to enhance preserve design and connectivity along the river valley and protect Otay tarplant.

b. Analysis

The entire 3,000 acre Otay Valley on the Otay Ranch is included in the open space preserve. Otay Valley Road was moved during the GDP planning process, at the suggestion of the Service and the Department, to north of the river valley and up on to the ridgetop. Likewise, development was eliminated from the elevated benches above the River Valley. The only potential development remaining in the valley is the specification in the General Development Plan that up to 400 acres of active use can be included in the Otay Valley Regional Park.

With regard to the proposed road crossings, Alta Road right-of-way has been reserved, but the road will not be built unless traffic in the County's East Otay Mesa Specific Plan justifies it. All crossings, including Alta Road, if it is ever built, must comply with the recommendations of the Wildlife Corridor Study, particularly with regard to bridging.

With regard to Otay tarplant, the project preserves 80% of the species on site. In addition, 50 foot buffers are required to avoid indirect impacts to preserved populations, and a mitigation plan providing for an experimental phase and maintenance and monitoring program must be implemented. Based on all of these requirements, the Program EIR concluded that impacts to Otay tarplant have been reduced to below a level of significance.

D. Relationship to the Multi-Species Conservation Plan (MSCP)

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Implementation Measure: Preservation and restoration activities shall be consistent with the guidelines of any applicable regional open space/resource protection program and shall result in equal or greater overall habitat values than occur under existing conditions. (GDP/SRP, Page 362)

If adopted, the Multi-Species Conservation Program could be the "applicable regional open space/resource protection program" governing Otay Ranch.

The MSCP was initiated in July 1991. The planning project was originally intended to meet the mitigation requirements resulting from the expansion of the Metropolitan Sewer System. Since then, the program has been revised and expanded to address the broader mitigation needs of both the public and private sectors. The City of San Diego is the Project Manager for the MSCP. The study area includes ten cities in addition to the City of San Diego, including the City of Chula Vista and portions of the unincorporated San Diego County.

The MSCP creates a new process for the issuance of federal and state permits and other authorizations under the Federal and State Endangered Species Act (ESA) and the Natural Communities Conservation Plan (NCCP) Act of 1991. The plan emphasizes the protection and management of habitats rather than focusing on preservation efforts on one species at a time.

In the spring of 1995, The City of San Diego released the draft MSCP and Draft Environmental Impact Report/Environmental Impact Statement for public review. The Draft MSCP Plans include a Multiple Habitat Planning Area (MHPA) map which provides generalized designation of areas which would be placed in a regional preserve system. The adopted Otay Ranch Land Use Plan is consistent with the regional preserve system designated in the MSCP's MHPA.

1. Comparison of the RMP to the Draft MSCP-Performance

The Otay Ranch Land Use Plan, when coupled with the Otay Ranch RMP and the Mitigation Measures imposed by the Otay Ranch Program EIR, meets or exceeds virtually all the preservation standards contained in the MSCP, as depicted in Exhibit 4.

Exhibit 4
Comparison of MSCP and Otay Ranch Resource Protection Performance

HABITAT/SPECIES	MSCP	OTAY RANCH
Riverside Fairy Shrimp	66% (Points), 66% (Major Pops)	100%
Otay Mesa Mint	96% (Points), 91% (Major Pops)	100%
California Orcutt Grass	75% (Points), 43% (Major Pops)	100%
Prostrate Navarretia	69% (Points), 75% (Major Pops)	100%
Little Mousetail	58% (Points), 45% (Major Pops)	100%
Willowy Monardella	27% (Points), 47% (Major Pops)	100%
San Diego Thornmint	79% (Points), 86% (Major Pops)	100% of large pop North of lake 95% Overall
Cactus Wren	74% (Points), 83% (Major Pops)	100% -- "no loss of viable Cactus Wren populations"
Thorne's Hairstreak	97%	100%
Orcutt's bird's beak	83% (Points), 50% (Major Pops)	100% of Major Pop S East of Lake 75% Overall
Grassland	37%	80% Native Grassland 59% Non-native Grassland
Burrowing Owl/ Grasshopper Sparrow	37% of grassland	80% Native Grassland 59% Non-native Grassland
Otay Tar Plant	73% (Points), 71% (Major Pops)	80%
Maritime Succulent Scrub	51%	80% preserved, additional 56 acres restored.
Narrow-Leaved Night Shade	74% (Points), 75% (Major Pops)	75%
Variegated Dudleya	76% Points, 61% (Major Pops)	75%
Coastal Sage Scrub	60%	70% preserved, additional 15% restored
Gnatcatcher	68% (Points), 60% of habitat	52% (Points), 70% of habitat
San Diego Goldenstar	63% (Points), 57% (Major Pops)	54%

Subsequent to the release of the MSCP, the State Department of Fish and Game and the U.S. Fish and Wildlife Service expressed concerns about the proposed MSCP preserve including portions of the preserve design for Otay Ranch. Their areas of concern are discussed in Section C above.

The relationship between the MSCP and RMP infrastructure plans and policies is discussed in Section V.6 "Conceptual Infrastructure Plan."

2. MSCP SubArea Plan

The draft MSCP provides that implementation of the plan is through subarea plans. The City of Chula Vista and the County of San Diego have initiated efforts to prepare a subarea plan for South San Diego County, including Otay Ranch. The Chula Vista City Council and the County Board of Supervisors have directed that the subarea plan reflect the plans, data, policies and requirements contained in the Otay Ranch Phase 1 RMP. Below is an outline of the recommended components of a subarea plan.

Exhibit 5
MSCP SubArea Plan Outline

- Description of Subarea.
- Written description of subarea including area, population, general features (urban area, suburban area, rural area, etc.), amount of habitat remaining within subarea.
- Written description of Multi-Habitat Planning Area (MHPA) within subarea location, core and/or linkage area, habitat types - referencing maps may simplify this effort.
- Map(s) showing MHPA and remaining habitat within the subarea.
- Covered species list including justification (in most instances this can be accomplished by referencing the MSCP)

- Land use considerations adjacent to MHPA

  Description of existing land uses within MHPA

  - Land use planning issues adjacent to the MHPA. This section should include: (1) the types of new development which, from a compatible land use standpoint, could or should be sited next to the MHPA; (2) project design considerations needed to contain the impacts of the land use within the project boundaries; (3) fencing, lighting and signage requirements needed to confine development impacts to the project site; and (4) fuel management needs on the proposed development property to protect the new development.
- Roads proposed through the MHPA.
- Design considerations to reduce impacts.
- Culvert/bridge specifications to maintain habitat linkages within MHPA.
- Preserve Management.
- Schedule for the preparation of a Preserve Management Plan.
- Proposed compatible activities with MHPA (be specific and include locations and acres). These activities could include passive recreation (horse and hiking trails), camping/picnicing, brush management, utility corridors, etc.
- Planning criteria for non-hard-line areas.
  - Interim and long-term protection of the MHPA and funding.
  - Description of measures (zoning, ordinances, etc.) which will be implemented to provide interim protection.
  - Goals and schedule for achieving permanent protection.
  - Mitigation goals and criteria for projects affecting covered species inside and outside of MHPA.
  - Regional/local funding for MHPA acquisition (including specific acreage goals if applicable) and management.

- Analysis of subarea's consistency with biological preserve design criteria in the MSCP.
- Finding of Consistency with the MHPA.
- Processing for amending subarea plan.
    - Like exchanges and minor modification of MHPA boundaries.
    - Changes in MHPA which improve linkage/core areas.
    - Changes in MHPA which require amendments to the state and federal take authorizations.

E. Resource Management Plan Amendments

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Policy: Provide a regulatory framework for future permitting by resource agencies and amendments to the RMP. (GDP/SRP Page 386; RMP Policy 9.6-9.8)

Policies 9.6-9.8 of the RMP describe procedures for RMP amendments. Key features of the RMP amendment process include the following:

- An RMP amendment shall be required if a change is proposed that would substantially reduce the size or substantially revise the location of the Preserve boundary.
- An RMP amendment shall be required if a change or delay is proposed in the conveyance of all or portions of the Preserve to the Preserve Owner/Manager (POM).
- An RMP amendment shall be required for any permanent or interim land use within the Preserve that is not specifically permitted by Policies 6.1-6.8 and 8.1-8.4 of the RMP.
- Minor Preserve boundary modifications do not require an amendment to the RMP.
- The procedures for an RMP amendment shall be the same as those for a SPA amendment and shall require a noticed public hearing by the legislative body having jurisdiction over the land use affected by the amendment.
- All RMP amendments shall be subject to review and comment by the POM, the City of Chula Vista and the County of San Diego.

- Any amendment to the RMP is viewed as discretionary.

1. San Diego County

Within the County of San Diego, the following procedures shall be followed when processing an amendment to the RMP:

a) The Department of Planning and Land Use shall be responsible for preparation and processing of such an amendment. The amendment shall be prepared in consultation with the City of Chula Vista. The Department shall prepare a report which analyzes the impacts of the proposed amendment.

b) The Director shall notice affected Community Planning Groups and public agencies and advertise a public hearing before the Planning Commission. After considering recommendations of the staff, City of Chula Vista, public agencies and interested persons, the County Planning Commission shall hold a public hearing on the proposed amendment, the Planning Commission may approve, modify or disapprove the proposed amendment.

c) Upon receipt of the Planning Commission's recommendation, the Board of Supervisors shall hold a public hearing on the proposed amendment, and may approve, modify or disapprove the proposed amendment.

d) Notice of the hearings by the Planning Commission and the Board of Supervisors shall be given by publication of the subject, time, date and place thereof in newspaper of

general circulation within the County at least ten days prior to the hearing.

e) A privately-initiated amendment to the RMP shall be considered as a privately-initiated amendment to a Large Scale Project (Specific Plan) only for purposes of collecting a deposit to recover all costs to the County associated with processing such application in accordance with Schedule E of Section 362 of the San Diego County Administrative Code. Where the Director of Planning and Land Use determines that the deposit required by ordinance is clearly and substantially in excess of the amount necessary for processing, a lower initial deposit amount may be submitted based on the Director's estimate of expected total processing costs.

2. Chula Vista City

Within the City of Chula Vista, procedures for amending the RMP shall follow those established for amending a General Development Plan, as discussed in Chula Vista Municipal Code Section 19.48.070, listed below:

> "A. Following its public hearing, the city council may adopt an amendment to the zoning ordinance establishing a P.C. zone, or may deny the proposed amendment. The city council shall make no modification of the proposed amendment as recommended by the planing commission unless and until such modification has been referred to the planning commission for additional study, report and recommendation. Such additional study, report and recommendation shall be made by the planning commission within forty days of the date of the referral, unless and except as the

city council may grant the planning commission additional time for its review of the matter.

"B. At the time of adoption of a P-C zone amendment, the city council shall adopt, by resolution, the general development plan as defined in Section 19.48.040.

"C. Following the adoption of the P-C zone amendment and the general development plan, all development within the district shall thereafter be in substantial conformity with the adopted general development plan or such modifications thereto as may have been approved."

F. Procedures for Ongoing Species Listing

Ongoing habitat and population studies of the California gnatcatcher and cactus wren are required by Policy 1.2 of the Phase 1 RMP. The purpose of this section is to identify a methodology for performing the ongoing studies of the California gnatcatcher and cactus wren, and a general procedure for dealing with new species listings.

Although habitat management plans such as the State of California Natural Community Conservation Plan (NCCP) and countywide subregional resource management plans (MSCP) are designed to minimize the need for future listings of species as threatened or endangered pursuant to state and federal endangered species acts, changes in status of sensitive species will continue to occur as new information accumulates regarding their populations, distributions, and vulnerabilities.[1] These changes may result in the listing of new species or in the elevation in status of candidate species. For some species, changes in status may require no additional action. For others, focused surveys on a SPA-by-SPA basis may be necessary; and for a few species, ranch-wide assessments may be necessary to provide more encompassing recommendations of specific management actions.

The geographic configuration of the preserve provides protection for a wide variety of sensitive species, including those listed as threatened and endangered by the California Department of Fish and Game (CDFG) and US Fish and Wildlife Service (USFWS); those identified as "species of special concern" by the CDFG; species recognized as "candidates" for listing by the USFWS; and plant species recognized as sensitive by

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1 Obligation of local governments and property owner relative to future listings may be altered through the MSCP process.

the California Native Plant Society (CNPS). Policy 2.8 of the RMP requires that a minimum of 75% of the Otay Ranch populations of USFWS Category 2 candidates be included within the preserve. Policy 2.7 requires that a minimum of 75% of the Otay Ranch populations of plant species on List 1B and List 2 of the CNPS, and a minimum of 50% of those on List 3 and List 4 be included in the preserve. An exception to this is the preservation of San Diego golden-star (*Muilla clevelandii*) and Munz's sage (*Salvia munzii*), both of which are CNPS List 2 species. Because both are common on the Ranch, 50% was determined in the Phase 1 RMP to be adequate to ensure their long-term viability. The following procedure is recommended to deal with ongoing species listings during the buildout of Otay Ranch. At the time individual SPA Plans are proposed within Otay Ranch, the current status of sensitive species within Otay Ranch will be reviewed and surveys will be conducted as required by the protocols described below.[2]

1. State or Federal Listing of Category 1 or Category 2 Candidates

The RMP mandates a high level of preservation of the Otay Ranch populations of all USFWS Category 1 and Category 2 candidates. For many species currently recognized as Category 1 or Category 2 candidates, the existing knowledge of their abundance and distribution on the ranch is considerable. The only changes required in dealing with these species would be the requirement of specific focused surveys for any of these "elevated" taxa at the SPA-level. Surveys would be conducted on a SPA-by-SPA basis within SPAs containing suitable habitat for the particular species under consideration.

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[2] The provision discussed in this section are subject to revision consistent with the requirements and/or assurance included in the MSCP Subregional Plan if/when adopted.

2. State or Federal Listing of CNPS List 1b and List 2 Species and CDFG Species of Special Concern

The RMP mandates high level preservation of the Otay Ranch populations of all CNPS List 1B and List 2 plant species and CDFG species of special concern. For many species currently recognized as CNPS List 1, List 2 and CDFG Species of Special Concern, the existing knowledge of their abundance and distribution on the Ranch is considerable. The only changes required in dealing with these species would be the requirement of specific focused surveys for any of these taxa at the SPA-level. Surveys would be conducted on a SPA-by-SPA basis within SPAs containing suitable habitat for the particular species under consideration.

If San Diego golden-star or Munz's sage become listed, re-examination of the species' distributions on the Ranch would be required. Because the existing data base may not be adequate, a ranch-wide survey would be required to accurately define their distributions. Once the ranch-wide survey is completed, additional protection would likely need to be provided to ensure appropriate preservation in accordance with state and/or federal regulations.

3. State or Federal Listing of CNPS List 3 and 4 Species

In the unlikely event that a CNPS List 3 or List 4 species becomes listed as threatened or endangered by the CDFG or the USFWS, re-examination of the species distribution on the Ranch would be required. Because the existing data base may be inadequate if they are listed as threatened or endangered, a ranch-wide survey would be required to more accurately define their distribution. Once the ranch-wide survey is completed, additional protection may need to be provided to ensure appropriate preservation in accordance with state and/or federal regulations.

4. Species Elevated to Candidate Status

Elevation of a species currently not considered sensitive by existing listing authorities or from CNPS List 3 or 4 to candidate status by the USFWS is indicative that either known populations are seriously declining or it is suspected (but not known) that the species is declining as a result of habitat loss. Because it is uncertain whether these species eventually will be listed, there is less urgency in accurately determining their ranch-wide distribution. Hence, focused surveys at the SPA level would be an appropriate way of dealing with these taxa. If impacts of greater than 25% of the SPA-level population of a "new" candidate species would occur as a result of construction within a specific SPA, the landowner should initiate a ranch-wide survey to demonstrate that 75% of the Otay Ranch population would be preserved. There is likely to be extremely limited distributional data available for a species not previously recognized as sensitive.

Recent examples of species "elevated" to Category 2 status support this recommendation. In 1990, the San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) and northern red-diamond rattlesnake (*Crotalus ruber ruber*) were recognized by the USFWS as Category 2 candidates. Based on survey work over the past 2-3 years, these species are considerably more widespread than was believed initially. In addition, there are no established protocols or reliable methods for conducting surveys for these animals.

5. Special Cases

The listing of any species as threatened or endangered that is of extremely limited distribution because of specific habitat requirements, should require a ranch-wide survey of the specific habitat type. An example of a species that falls into this category is the arroyo toad (*Bufo microscaphus californicus*). The arroyo toad is

restricted to riparian areas in southern California. Habitat requirements include sandy stream terraces adjacent to shallow pools. Factors contributing to the decline of the toad include dam construction, artificial flow regulation, habitat inundation, suction dredging, off-road vehicle activity, predation by introduced aquatic species, and isolation and fragmentation of populations. Because of the limited amount of area requiring surveys and the highly sensitive nature of the animal (e.g., it potentially could be adversely affected by upstream activities some distance from the habitat), ranch-wide surveys would be required for this species.

Other species of extremely limited distribution may include those restricted to grasslands, vernal pools, clay soils, etc. Whenever species with these limited environmental tolerances are listed as threatened or endangered, a ranch-wide survey of appropriate habitat should be conducted. Because of the limited amount of these kinds of habitats on the Ranch, these surveys should not represent a significant burden.

6. Summary of Procedures for Addressing Ongoing Species Listings

Exhibit 6 below summarizes the procedures for addressing ongoing species listings during the buildout of Otay Ranch.

Exhibit 6
Summary of Procedures for Addressing Ongoing Species Listings

Current Status of Species	Elevated to	Procedure
Category 1 or 2	Endangered or Threatened Listing	SPA level survey on SPA-by-SPA basis for SPAs within appropriate habitat.
CNPS List 1B or 2; CDFG Species of Special Concern	Endangered or Threatened Listing	SPA level survey on SPA-by-SPA basis for SPAs within appropriate habitat.
CNPS List 3 or 4	Endangered or Threatened Listing	Ranch-wide survey.
Not currently considered sensitive by listing authorities or CNPS List 3 or 4	Candidate Status	SPA level survey on SPA-by-SPA basis for SPAs with appropriate habitat; ranch-wide survey if SPA would affect >25% of the species.
Special cases	Endangered or Threatened Listing	Ranch-wide survey restricted to narrowly defined appropriate habitat.
San Diego goldenstar and Munz's sage	Endangered or Threatened Listing	Ranch-wide survey.

7. Arroyo Southwestern Toad

In conformance with the provisions above, a review of previous surveys and a focused survey of habitat likely to support the endangered arroyo southwestern toad (ARTO) was conducted. Although the Otay Valley is not projected to be developed, riparian restoration activities might have an adverse effect on the ARTO if it were present.

The ARTO is a small, light green, gray or tan toad with warty skin and dark spots. Most of the

population in San Diego County is located in the eastern and southeastern portions, predominantly within or adjacent to the Cleveland National Forest.

II. ACTIVITIES RELATED TO RESOURCE PRESERVE MANAGEMENT, CONVEYANCE AND FUNDING

The goal of the Otay Ranch Resource Management Plan is to establish a permanent resource preserve dedicated to the protection and enhancement of the biological, paleontological, cultural and scenic resources of the ranch, maintenance of long-term biological diversity, and the assurance of the survival and recovery of native species and habitats within the resource preserve.

The Phase 1 RMP requires the City of Chula Vista and the County of San Diego to perform three tasks necessary to initiate the Resource Preserve prior to the approval of the first Otay Ranch SPA. They are:

1. The selection of a Preserve Owner/Manager;
2. The adoption of a conveyance and restoration schedule; and
3. The identification of a funding plan.

These three tasks are reviewed in this chapter.

A. Preserve Owner/Manager (POM) (Appendix F12.) Preserve Owner/Manager JEPA

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policies:

> Policy: Select a Preserve Owner/Manager who is acceptable to the City of Chula Vista and the County of San Diego. Advice of the U.S. Fish and Wildlife Service and the California Department of Fish and Game will be sought prior to final selection of a Preserve Owner/Manager. (GDP/SRP Page 372-373; RMP Policies 5.1, 5.2)
>
> Policy: The Preserve Owner/Manager shall be selected prior to or concurrent with approval of the first SPA in the Phase 2 RMP. (GDP/SRP Page 372-373; RMP Policies 5.1, 5.2)
>
> Policy: The Preserve Owner/Manager may be a local government, a public resource agency, a non-profit organization, or any other entity or entities acceptable to the landowner, City of Chula Vista and County of San Diego. (GDP/SRP Page 372-373; RMP Policies 5.1, 5.2)
>
> Policy: The Preserve Owner/Manager may be an entity or entities working in a cooperative arrangement to fulfill the duties of the Owner/Manager. (GDP/SRP Pages 372-373; RMP Policies 5.1, 5.2).

The Preserve Owner/Manager (POM) will oversee the day-to-day and long-range activities within the Resource Preserve. The POM will take an active role in the maintenance and enhancement of biological resources, the development of educational programs, and the implementation of Phase 1 and 2 RMP policies

related to management of the resource preserve. The POM will participate in the decision-making processes for all activities and amendments to the GDP or RMP or both that potentially effect the integrity of the resource preserve.

The duties and responsibilities of the POM may include, but not be limited to, the following:

- Maintenance and enhancement of all resources through the prevention of further disturbance, including controlling access to the resource preserve, prohibiting off-road traffic, enforcing "no trespassing" rules, and curtailing activities that degrade resources, such as grazing, shooting, and illegal dumping;
- Monitoring of resources to identify changes in the quality and quantity of sensitive resources and habitats to assure compliance with the adopted mitigation monitoring and reporting program;
- Implementation and monitoring of restoration activities, as appropriate (it is understood that some restoration activities may be carried out by individual Otay Ranch developers in coordination with the Preserve Owner/Manager);
- Implementation of maintenance activities including removal of trash, litter, and other debris, maintenance of trail systems, removal and control of exotic plant species (weeds), and control of cowbirds through trapping efforts;
- Development of educational facilities and interpretive programs;
- Implementation and/or coordination and accommodation of research programs;

- Coordination with local jurisdictions, resource agencies, and adjacent ownerships;
- Coordination with the Otay Valley Regional Park JEPA or subsequent park planning entity, regarding issues associated with Otay Valley Regional Park;
- Enforcement activities;
- Review of RMP Amendments, Resource Preserve boundary adjustments, infrastructure plans, plans for active recreational uses within the resource preserve, plans for land uses adjacent to the resource preserve and other activities/studies as identified in the RMP;
- Develop and implement a strategy that facilitates effective, long-term management of the resource preserve consistent with the goal of the RMP;
- Development and implementation of a management program to ensure no reduction in habitat values and no adverse impacts to biological resources occur within the resource preserve;
- Establish a comprehensive monitoring program for the biota of the resource preserve in conjunction with the Phase 2 RMP;
- Develop and implement an annual monitoring program designed to identify changes in quality and quantity of on-site biological resources, including sensitive wildlife species, sensitive plant species, and sensitive habitat types; and
- Coordination with the MSCP, NCCP, or other adopted subregional habitat planning programs to assure consistency with regional conservation efforts and plans.

The City of Chula Vista and the County of San Diego identified the following as desirable qualifications for the Preserve Owner/Manager.

- At least 5 years of demonstrated experience managing biological resources including listed species;
- At least 5 years of previous experience with law enforcement or the ability to contract with law enforcement agencies;
- At least 5 years previous experience with access control;
- Demonstrated ability to interact effectively with local and regional conservation agencies, recreational agencies and the local community;
- Prior experience in conducting or coordinating with individuals involved in ongoing scientific research;
- Demonstrated ability to coordinate continued monitoring efforts of the resource preserve's biota, as shown by staff experience and existing programs;
- Cultural resource management experience;
- Demonstrated experience in long-term management of large open space areas with numerous sensitive species;
- Demonstrated ability to efficiently manage personnel and finances over a long-term;
- Demonstrated experience or ability to establish and operate environmental, educational and interpretive programs;
- Demonstrated ability and willingness to cooperate with local and regional agencies and direct experience in working with

governing boards and/or advisory committees representing such agencies; and

- Demonstrated ability to coordinate community volunteer and community outreach programs.

1. Background

Starting in January of 1995, the County of San Diego and the City of Chula Vista pursued a "Request for Qualification" (RFQ) process to identify a Preserve Owner/Manager. The Chula Vista City Council approved a draft RFQ on February 14, 1995. The County Board of Supervisors approved a similar RFQ on March 7, 1995. Five entities or coalition of entities responded to a joint RFQ. In May 1995, representatives from the City of Chula Vista and the County of San Diego conducted candidate interviews. The California Department of Fish and Game and U.S. Fish and Wildlife Service, the Otay Valley Regional Park Citizen Advisory Committee and representatives from the property owners participated in the interview process.

After the interviews, the City and County jointly concluded that the role of the Preserve Owner/Manager needed to be better defined and that the cost of operating the resource preserve needed to be more precisely calculated. It was further concluded that none of the candidates, acting alone, demonstrated the range of skills and experience necessary to permanently perform the POM function. Additionally, many of the candidates expressed discomfort at being asked to make a long term commitment to a 11,375 acre resource preserve without better definition of the resource preserve and attendant POM responsibilities.

In response to these issues, the City and the County agreed that it is desirable to select themselves as preserve owner/manger until greater information is known about the scope and nature of the resource preserve. The allocation of POM responsibilities was jointly prepared by a City Council Ad Hoc Committee comprised of the Acting County Planning Director, the Acting County Parks Director, the Chula Vista Parks Director and the Executive Director of the Chula Vista Nature Interpretive Center.

2. POM Management Structure

The following are the elements of the Otay Ranch POM Management Structure.

- The City of Chula Vista and the County of San Diego jointly name each other as the Otay Ranch Preserve Owner/Manager (reviewed every 5 years).
- The City of Chula Vista and the County of San Diego execute a joint powers agreement to delineate their respective roles and responsibilities (Appendix 12).
- Property conveyed to the interim POM be conveyed to the City and the County with an undivided interest.
- The City of Chula Vista and County of San Diego jointly exercise responsibility and authority to review and comment on the various tasks, plans and programs identified in the RMP.
- The Board of Supervisors designates the Chief Administrative Officer to exercise the review and comment authority described above.

- The Chula Vista City Council designates the Chula Vista City Manager as authorized to exercise the review and comment authority described above.
- The responsibility for the various RMP tasks be generally allocated to the City and the County according to the following broad classifications:
    - Environmental Education - City of Chula Vista
    - Research - City of Chula Vista
    - Resource Protection, Monitoring and Management - County of San Diego
    - Recreation - City of Chula Vista
    - Law Enforcement - Shared responsibility based on jurisdiction
- The City of Chula Vista and the County of San Diego would retain independent authority to contract with other parties to perform their respective allocated tasks.

Exhibit 7 below contains an organization chart illustrating the relationships between the City of Chula Vista, the County of San Diego and the various POM functions.

Exhibit 8 below delineates and allocates the responsibilities consistent with the categories listed above, according to specific GDP/RMP identified POM tasks. The Appendix F12 contains the draft Otay Ranch Preserve Owner/Manager JEPA.

Exhibit 7
POM Organization Chart

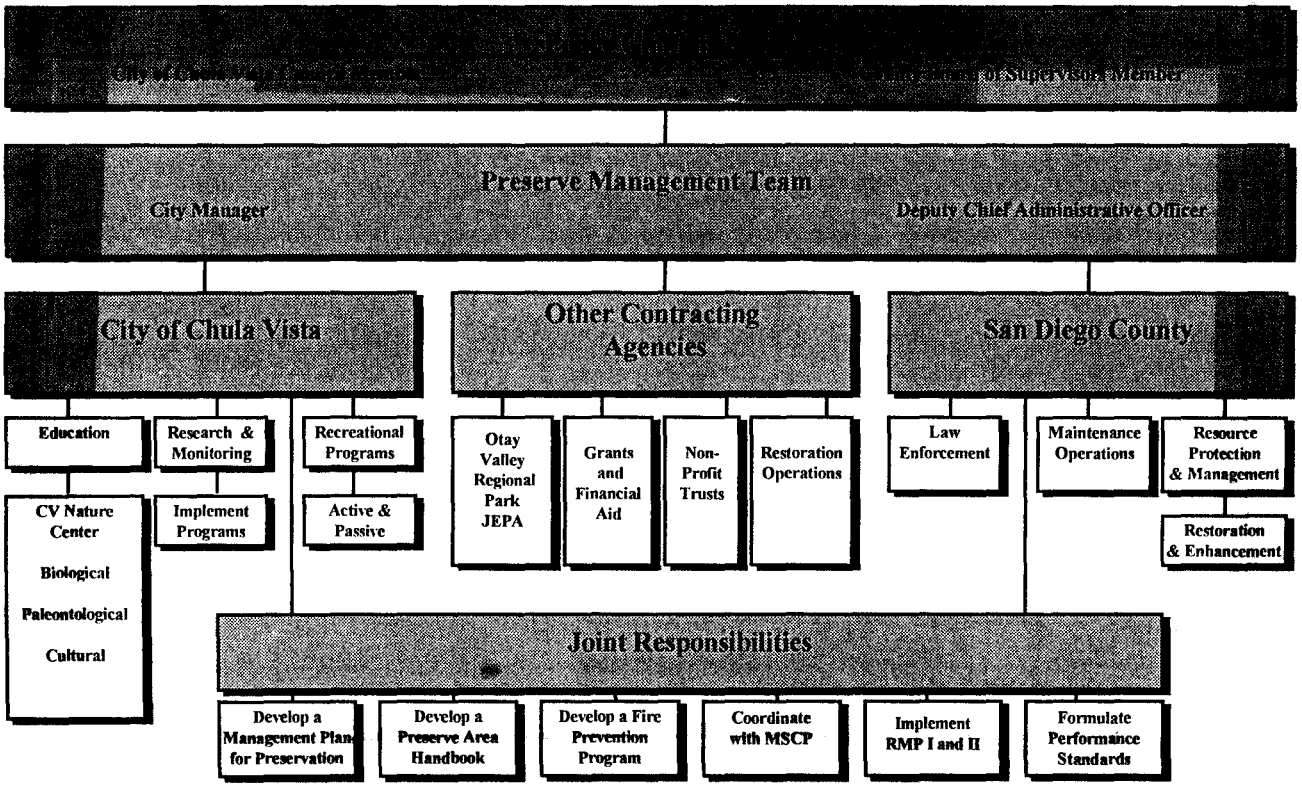

Exhibit 8
Preserve Owner/Manager Tasks

GDP Identified POM Task	Environmental Education	Research	Resource Protection, Monitoring and Management	Recreation	Law Enforcement
Policy 3.2 Restoration programs intended to mitigate for disturbance of sensitive habitats associated with development of Otay Ranch shall be funded and designed by the landowner in coordination with the Preserve Owner/Manager and the appropriate jurisdiction. Implementation of such restoration programs shall be by an appropriate entity acceptable to the Preserve Owner/Manager and the appropriate jurisdiction. (RMP, Page 82)			Coordinate Restoration with POM		
Policy 3.3. Restoration programs may be implemented for purposes other than compensation of impacts associated with development of Otay Ranch. Such programs shall be funded, designed and implemented by the Preserve Owner/Manager or other entity acceptable to the Preserve Owner/Manager. (RMP, Page 82)			Restoration Banking Governed by POM		
Policy 5.2. Standards: Responsibilities of the Preserve Owner/Manager shall include, but not be limited to, the following: Maintenance of existing high quality resources through the prevention of further disturbance, including controlling access to the preserve, prohibiting off-road traffic, enforcing "no trespassing" rules, and curtailing activities that degrade resources, such as grazing, shooting, and illegal dumping.			Prevent Degradation of Preserve Resources		
Monitoring of resources to identify changes in the quality and quantity of sensitive resources and habitats.			Monitor Resource Preserve		

GDP Identified POM Task	Environmental Education	Research	Resource Protection, Monitoring and Management	Recreation	Law Enforcement
Implementation and monitoring of restoration activities, as appropriate (it is understood that some restoration activities may be carried out by individual Otay Ranch developers in coordination with the Preserve Owner/Manager).			Coordinate Restoration		
Implementation of maintenance activities including removal of trash, litter, and other debris, maintenance of trail systems, removal and control of exotic plant species (weeds), and control of cowbirds through trapping efforts.			Maintain Resource Preserve		
Development of educational facilities and nature interpretive programs.	Develop Educational Programs				
Implementation and/or accommodation of research programs.		Accommodate Research			
Coordination with local jurisdictions, resource agencies, and adjacent ownerships.	Coordinate with Resource Agencies				
Coordination with the Otay Valley Regional Park JEPA, or subsequent park planning entity, regarding issues associated with Otay Valley Regional Park.	Coordinate with JEPA				
Enforcement activities.					Provide Law Enforcement
Review of RMP Amendments, Preserve boundary adjustments, infrastructure plans, plans for active recreational uses within the Preserve, plans for land uses adjacent to the Preserve and other activities/studies as identified in the RMP. (RMP, Pages 93-94)	Review RMP Amendments				
Policy 6.1. Provide resource-related educational and interpretive programs to increase public sensitivity to, and awareness and appreciation of resources within the Preserve, consistent with the goal of the RMP.					

GDP Identified POM Task	Environmental Education	Research and Monitoring	Resource Protection, Monitoring and Management	Recreation	Law Enforcement
1. Under the direction of the Preserve Owner/Manager, an interpretive center(s) shall be constructed to display and interpret the biological, paleontological, and cultural resources present on Otay Ranch. 2. Construct a native plant nursery and/or botanic garden to be used for public education of native plants and plant communities and for restoration activities. 3. The sale of educational materials, books, and plants shall be allowed. (RMP, Page 103)	Direct Interpretive Center				
4.	Construct Native Plant Nursery		Use Materials in Restoration		
5.	Educational Materials				
Policy 6.2. Standards: (1) Siting and design of active recreational uses shall be subject to review and comment by the Preserve Owner/Manager in consultation with the JEPA of the Otay Valley Regional Park and shall be consistent with plans for the Otay Valley Regional Park when adopted. (RMP, Page 103)				Consult with JEPA Regarding Recreation Design	
Policy 6.3. Standard: A qualified firm shall be hired to design and implement construction of a trails system through the Preserve, following review and comment by the Preserve Owner/Manager and resource agencies. (RMP, Page 104)	Construct Trail Design			Construct Trail Design	
Policy 6.5. Identify restricted use area within the Preserve. Standard: Public access may be restricted within and adjacent to wetlands, vernal pools, restoration areas, and sensitive wildlife habitat (e.g., during breeding season) at the discretion of the Preserve Owner/Manager. (RMP, Page 106).			Identify Restricted Use Areas		

GDP Identified POM Task	Environmental Education	Research and Monitoring	Resource Protection, Monitoring and Management	Recreation	Law Enforcement
Policy 6.6. Guidelines: Infrastructure plans and their implementation shall be subject to review and comment by the appropriate jurisdictions in coordination with the Preserve Owner/Manager. (RMP, Page 107)	Review Infrastructure Plans				
Policy 6.8. Ecologically necessary controlled burning may be permitted within the Preserve. Standard: Where and when it is deemed appropriate for the enhancement of biological resources by the Preserve Owner/Manager, and subject to review by the County of San Diego and the City of Chula Vista with advice from the resource agencies (USFWS, CDFG), controlled burning shall be conducted within the Preserve. (RMP, Page 113)			Authorize Controlled Burns		
Policy 7.1. All development plans adjacent to the edge of the Preserve shall be subject to review and comment by the Preserve Owner/Manager, the City of Chula Vista, and the County of San Diego to assure consistency with resource protection objectives and policies. (RMP, Page 114)	Review Edge Plans				
Policy 8.3. Construction activities associated with infrastructure necessary for implementation of an approved development plan shall be allowed as an interim activity. Standard: All construction activities shall take place in accordance with standards and criteria outlined in the conceptual infrastructure improvement plans as required in Policy 6. The improvement plans shall be subject to approval by the appropriate jurisdiction and review by the Preserve Owner/Manager. (RMP, Page 116)	Review Facility Construction Plans				

GDP Identified POM Task	Environmental Education	Research and Monitoring	Resource Protection, Monitoring and Management	Recreation	Law Enforcement
Policy 8.4. Develop a Range Management Plan Standard: A Range Management Plan, which will depict the allowable interaction between grazing activity and sensitive resources, shall be developed as part of the submittal of the first SPA in the Phase 2 RMP. Under this plan, the most sensitive areas (i.e., areas that support sensitive species) shall have restricted access either by fencing or other appropriate method. The plan shall be subject to review and comment by the Preserve Owner/Manager, the City and the County. (RMP, Page 117)	Review Range Management Plan				
Policy 9.6. Establish a procedure for amending the RMP. Standard: Following notice of public hearing, the RMP may be amended by the legislative body having jurisdiction over the use of land affected by the amendment, provided that all such amendments shall be subject to review and comment by the Preserve Owner/Manager, by the City of Chula Vista, and by the County of San Diego. (RMP, Page 119)	Review RMP Amendments				
Policy 9.8. Standard: All amendments to the RMP that would reduce the size or substantially revise the location of the Preserve boundary, or that would in any way delay the conveyance of all or portions of the Preserve to the Owner/Manager, shall require written approval by both the City of Chula Vista and the County of San Diego. (RMP, Page 121)	Review Changes to Preserve Boundaries				

B. Preserve Conveyance Plan

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Policy: Develop and obtain City and County approval (in coordination with the owner/manager) of a plan for the orderly conveyance of dedicated parcels of land to the Preserve. (GDP/SRP Page 376; RMP Policy 9.6-9.8).

The Phase 1 RMP outlines the standards and criteria that will guide design of the conveyance schedule, as follows.

- First priority shall be given to conveyance of highest quality resources (such resources may include vernal pools on Otay Mesa, Diegan coastal sage scrub habitat in the Salt Creek area, gnatcatcher population areas in the western San Ysidro and central Proctor Valley areas, or potential wetlands restoration areas in the Otay Valley [depending upon the status of regional park plans and wetlands restoration plans at the time Otay Valley parcels are conveyed]).
- First priority shall be given to conveyance of most vulnerable areas (i.e., those most subject to potential or ongoing disturbance);
- Conveyance shall occur in an orderly manner beginning with an identified "keystone" parcel (e.g., vernal pool areas, Salt Creek area, Otay Valley, central Proctor Valley, western San Ysidro) and proceed to the next logical block of land;

- Areas with restoration potential shall be conveyed early in order to begin long-term research and restoration activities early in the process (e.g., Otay Valley, vernal pool areas, potential Diegan coastal sage scrub/maritime succulent scrub restoration areas north and south of the Otay Valley);
- Cumulative acreage conveyed shall be greater than or equal to the cumulative acreage of the proposed SPA/Specific Plan development;
- General guidelines regarding in-kind mitigation and no net loss of wetlands shall be considered in the development of the conveyance schedule, particularly in the context of applicable State and Federal regulations (it is understood that in-kind mitigation may not always be the preferable approach to achieve the goal of establishing a functioning manageable Preserve);
- Applicable State and Federal regulations regarding protection of sensitive habitat and species shall be followed in the development of the conveyance schedule;
- The Preserve Owner(s)/Manager(s) shall participate in preparation of the conveyance schedule.

1. Conveyance

The purpose of the Conveyance Plan is to identify policies for the orderly conveyance of Otay Ranch land to the Preserve Owner/Manager. The Conveyance Plan is a dynamic planning tool that may be modified to reflect changing circumstances. Since the Conveyance Plan and the Financing Plan are interdependent, any modification of the Conveyance

Plan shall include an analysis of the effect of the change on the Financing Plan for the Resource Preserve.

Creation of the plan requires the resolution of three issues:

- How much land must each village convey to ensure the eventual conveyance of the 11,375 acre resource preserve to the POM?
- What governmental approval triggers actual conveyance of land to the POM?
- On a village by village basis, where will land be conveyed?

2. Conveyance By Village

On the surface, the question of how much land each village must convey is deceptively simple. The obvious answer is that each village should convey its proportionate share of the resource preserve. The GDP permits 11,524 acres of land to be developed and requires 11,375 acres of land to be conveyed for the resource preserve. Thus, it appears reasonable to conclude that for each acre of development, roughly one acre of preserve land should be conveyed.

However, this conclusion assumes that all land development in each village should have an equal obligation to convey land. This is not the case because some villages contain lands for facilities which will serve more than the residents of that village. Such facilities include local parks, schools, arterials, SR-125 and lands designated as a public use area (Otay Valley Water Reuse Site). This analysis refers to the lands as "common uses".

The common use problem is solved by deleting common use acreage from village development totals and apportioning the obligation to convey land for the development of such areas to all the villages.

A second allocation problem must also be addressed. Two planning areas contain "Limited Development Areas" (LDA) (Planning Area 16 [370 acres] and Planning Area 17 [795 acres]). LDA is a GDP land use designation within which "removal of native vegetation would be prohibited except as necessary for construction of roads and utilities." "Buildings or other structures, agriculture, landscaping, livestock, grazing, trash disposal or fences" are not allowed within these areas. However, the GDP provides LDAs may be included within private lots.

Thus, while these areas are restricted natural open space, they are deemed to be areas subject to development by the GDP acreage calculations. It would be unreasonable to require the conveyance of land to the resource preserve, upon the subdivision of LDAs (private open space) into private lots.

The LDA problem is solved by deleting the LDA acreage from the village development totals. This increases the preserve conveyance obligation for the remaining development areas of Otay Ranch.

Deleting LDA lands and common use lands alters the obligation to convey land from 1 acre conveyed per 1 acre of development to 1.188 acre conveyed per 1 acre of development. Under this approach, land would not be conveyed upon the development of "common use land" or the subdivision of LDA land into private lots.

Based upon the GDP land use designation, application of the principals discussed above would result in a conveyance obligation on a village by village basis as shown in Exhibit 9.

Exhibit 9
Preserve Land Conveyed - Forecasted by Village

Area	Total	LDA	Common	Total -(LDA + Common)	Conveyance
Village 1	904	0	29	874	1,039
Village 2	775	0	48	727	864
Village 3	318	0	5	314	373
Village 4	607	0	13	594	705
Village 5	493	0	26	467	555
Village 6	365	0	23	342	407
Village 7	412	0	94	318	377
Village 8	343	0	19	324	385
Village 9	364	0	20	344	409
Village 10	334	0	68	266	316
Village 11	455	0	70	385	458
Planning Area 12 EUC	439	0	49	391	464
Village 13 (Resort)	783	0	14	770	914
Village 14 (Proctor Valley)	829	0	21	808	960
Village 15 (San Ysidro West)	800	0	13	787	934
Planning Area 16 (Jamul)	1,117	370	2	744	884
Planning Area 17 (San Ysidro East)	1,611	795	2	815	968
Planning Area 18a	216	0	0	216	256
Planning Area 18b	70	0	0	70	83
Planning Area 19	20	0	0	20	24
SR 125	182	0	182	0	0
Public	20	0	20	0	0
Arterials	69	0	69	0	0
TOTALS	11,524	1,165	786	9,574	11,374

Exhibit 9 above, forecasts the conveyance obligation on a village-by-village basis applying the acreage data contained in the GDP/SRP.

However, it should be emphasized that as SPA plans are processed, the actual conveyance obligation may vary slightly from the forecast referenced above due to more precise planning and engineering.

Exhibit 10 below, illustrates how, based upon actual SPA One land plans, the amount of conveyance may differ slightly from the forecasted amount. These differences will not result in a change in the total acres eventually conveyed to the Resource Preserve.

The GDP identified the SPA One area (Villages One and Five) as containing 1,397 developable acres. Application of the conveyance methodology discussed above translates into a SPA One conveyance obligation of 1,594 acres.

However, the actual SPA One land plan permits development of 1,110 acres, which translates into a conveyance obligation of 1,243 acres. The differences between the GDP acreage and those contained in the actual SPA One land plan are attributable to the following considerations. The GDP Village One area included the lands west of Paseo Ranchero, the SPA One land plan does not. The actual alignment of the arterial road forming the boundary of the SPA One land plan differs slightly from the assumed alignment in the GDP. The SPA One land plan identifies schools and parks that are slightly larger than assumed in the GDP.

Exhibit 10
Difference Between SPA One Land Plan and GDP Identified Acreage (Acres)

Village Area	SPA Application[3]	Park	School	Net	Conveyance Obligation	GDP Forecast	Difference
Village One	619	22	10	587	697	1,039	
Village Five	491	21	10	460	546	555	
Total	1,110	43	20	1,047	1,243	1,594	
West Of Paseo Ranchero	265	0[4]	0[4]	265	315		
Total	**1,375**	**43**	**20**	**1,312**	**1,558**	**1,594**	**-36**

3. Conveyance Timing

The RMP provides that cumulative acreage conveyed should be greater than or equal to SPA acreage. It is self evident that actual conveyance cannot occur acre by acre, as development proceeds, but must occur through the conveyance of manageable and biologically meaningful blocks of land. Thus, the issue becomes what is a reasonable size block of land to be conveyed, and at what point in the development process should actual conveyance occur?

Conveyance of larger blocks of land cannot reasonably occur upon initial SPA approval, at the start of land development, because there is no revenue base from which to fund management of the conveyed land. Conversely, land should not be conveyed at the end of the development of a SPA because the public interest and RMP policies require that actual conveyance roughly parallels the time of impact (development).

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3 Based on the approved SPA One Plan.

4 Parks and school sites will be located in the area west of Paseo Ranchero. When a SPA involving that area is processed, those acreages will be incorporated into the analysis and conveyance obligation adopted.

This analysis recommends that actual conveyance occur as follows:

The applicant shall convey fee title, or upon the consent of the POM and any lien holder an easement restricting use of the land to those permitted by the RMP, to the POM upon the recordation of each final map for an amount of land equal to the final map's obligation to convey land to the Resource Preserve. Where an easement is conveyed, the applicant shall be required to provide subordination of any prior lien holders in order to ensure that the POM has a first priority interest in such land. Where consent and subordination cannot be obtained, the applicant shall convey fee title. Where fee title or an easement is conveyed, each tentative map shall be subject to a condition that the subdivider shall execute a maintenance agreement with the POM stating that is is the responsibility of the applicant to maintain the conveyed parcel until the Habitat Maintenance District has generated sufficient revenues to enable the POM to assume maintenance responsibilities. Where an easement is granted, each tentative map is subject to a condition that fee title shall be granted upon demand by the POM.

Based on these principals and consistent with the adopted Village Phasing Plan, conveyance is forecasted to occur on a year-by-year basis as depicted in Exhibit 11.

Exhibit 12 below, contrasts the amount of land conveyed to the Resource Preserve over time with the anticipated acres of sensitive resources to be impacted by development. Because development is likely to occur on the Otay Valley Parcel during the initial stages of Otay Ranch development, where there are few sensitive resources, the preserve will receive substantial preserve land well in advance to any corresponding impacts.

Exhibit 11
Preserve Land Conveyed - Forecasted by Year

Year	Acres Conveyed	Cumulative
1	139	139
2	347	485
3	347	832
4	347	1,178
5	496	1,674
6	577	2,251
7	374	2,625
8	271	2,896
9	590	3,487
10	865	4,351
11	903	5,255
12	628	5,883
13	536	6,419
14	613	7,032
15	568	7,600
16	492	8,092
17	492	8,584
18	475	9,060
19	398	9,458
20	232	9,690
21	232	9,921
22	210	10,131
23	210	10,342
24	210	10,552
25	137	10,689
26	137	10,826
27	137	10,963
28	137	11,100
29	137	11,237
30	137	11,374

Exhibit 12
Contrast - Conveyance With Sensitive Resources Impact

Year	Cumulative Land Conveyed	Cumulative Sensitive Land Impacted	Land Conveyed Compared to Resources Impacted
1	139	0	139
2	485	0	485
3	832	0	832
4	1,178	71	1,107
5	1,674	180	1,494
6	2,251	289	1,962
7	2,625	398	2,227
8	2,896	488	2,408
9	3,487	639	2,848
10	4,351	954	3,397
11	5,255	1,272	3,983
12	5,883	1,497	4,386
13	6,419	1,715	4,704
14	7,032	1,939	5,093
15	7,600	2,111	5,489
16	8,092	2,284	5,808
17	8, 584	2,456	6,128
18	9,060	2,623	6,437
19	9,458	2,784	6,674
20	9,690	2,890	6,800
21	9,921	2,995	6,926
22	10,131	3,091	7,040
23	10,342	3,186	7,156
24	10,552	3,282	7,270
25	10,689	3,354	7,335
26	10,826	3,426	7,400
27	10,963	3,498	7,465
28	11,100	3,570	7,530
29	11,237	3,642	7,595
30	11,374	3,714	7,660

a. Fee-In-Lieu

The City of Chula Vista and County of San Diego shall establish, in consultation with the Preserve Owner/Manager, a program to collect fees in lieu of actual conveyance of land to the Preserve Owner/Manager. The fee-in-lieu program shall be designed to generate fee revenues sufficient to acquire identified preserve land in an amount equal to the acreage obligation of the project paying the fees. Fees shall be payable upon recordation of final maps. While fees may be held in trust by the jurisdiction imposing and collecting the fees, they shall ultimately be conveyed to the POM. The POM shall use the fees for preserve property acquisition. Fee revenues may not be utilized for any purpose other than preserve property acquisitions and the administration of said property acquisitions.

4. Conveyance Location

The RMP provides the following guidance regarding the location of conveyed land:

- Priority is given to high quality resources.
- Priority is given to most vulnerable areas.
- Conveyance should begin with "keystone" parcels (vernal pool areas, Salt Creek, Otay Valley, Central Proctor Valley, Western San Ysidro).
- Potential restoration areas should be conveyed early.

A key additional consideration is the practical constraints imposed by areas of ownership. Otay Ranch is currently owned by several parties.

Exhibits 14A & 14B comprise the Conveyance Plan based upon current ownership of developable and

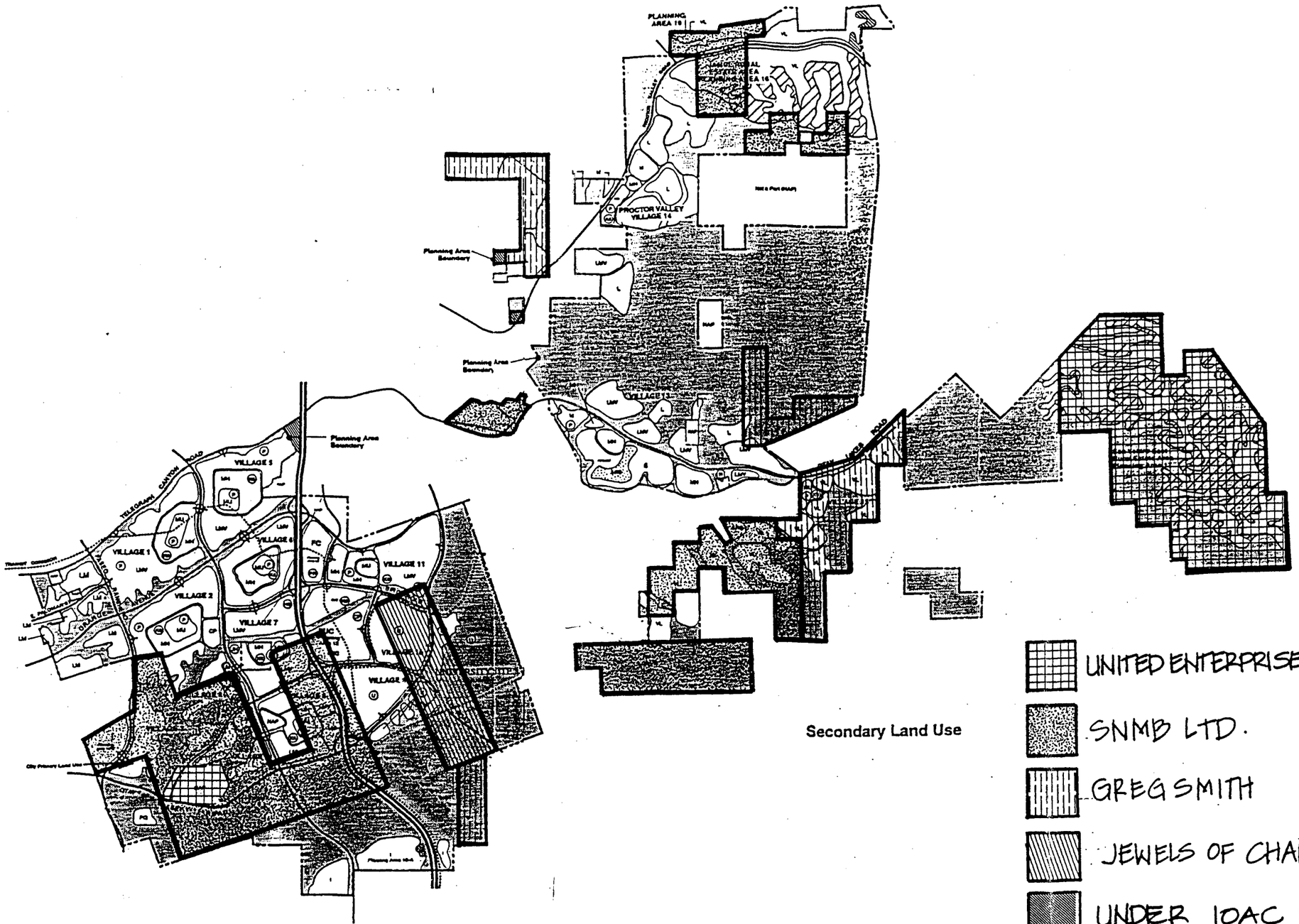
preserve acreages. Other potential alternatives may be developed which can achieve the GDP/SRP goals, policies and objectives, and respect ownership patterns. This Conveyance Plan shall be utilized to identify the lands to be conveyed for the initial Otay Ranch SPA. No other SPA Plan may be approved until the conveyance sequence and location is reviewed and potentially modified by the County of San Diego and the City of Chula Vista to reflect consideration that conveyed land be biologically viable, contiguous and economically feasible for management purposes. In making the decision, the impact of the conveyance on the Resource Preserve Financing Plan shall be considered. In addition, the properties conveyed shall follow the criteria of the GDP/SRP.

a. Permitted Uses

Uses permitted within conveyed land must comply with the provisions of the Otay Ranch General Development Plan. Seven broad categories of uses are permitted:

- Open space, including preservation, recreation and education, study and research, and management of environmental resources;
- passive recreation;
- infrastructure consistent with approved GDP/SRP plans
- interim agricultural uses consistent with the Range Management Plan;
- active recreation (up to 400 acres consistent with the Otay River Valley Regional Park Plan);
- a university within the areas designated within the Otay Ranch General Development Plan Land Use Map, but excluding structures within the Salt Creek Canyon; and
- an Interpretive Center.

The GDP/SRP allows certain uses in the Resource Preserve. The POM will allow any and all of these uses within conveyed lands subject to the criteria and conditions of the GDP/SRP. This Phase 2 RMP designated the City and the County to act as the POM for a 30 year duration, to be reviewed every five years. During this period, the POM will sell, lease or gift areas of conveyed land to a third party for the purposes of pursuing any of these permitted uses, upon direction by the City and County. The City and County may consider designating such a third party as the POM for such conveyed areas and for such uses.

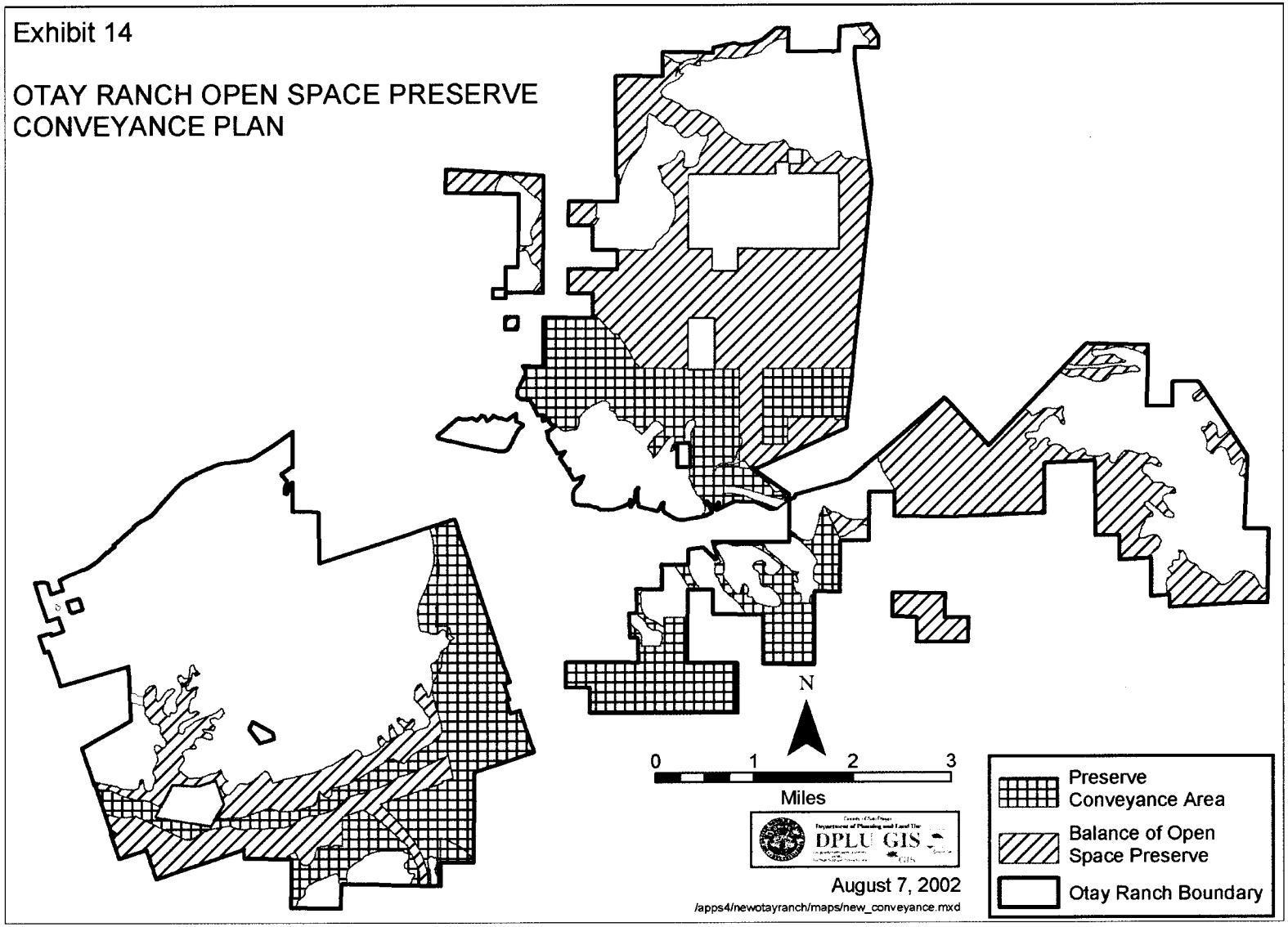


Otay Ranch Phase 2 Resource Management Plan

Ownership Map

EXHIBIT 13

REVISED ATTACHTMENT B1



5. Restoration Analysis

The Otay Ranch RMP and Findings of Fact require the restoration of 1,300 acres of coastal sage scrub (CSS) throughout the build-out of the Otay Ranch project. The Coastal Sage Restoration Master Plan (Appendix F8) identifies the candidate areas that are available for restoration.

The purpose of this analysis is to identify the obligation to restore coastal sage scrub and maritime succulent scrub (MSS) on a village-by-village basis.

a. Coastal Sage Scrub

As depicted in Exhibit 15 below, development of the Otay Ranch villages and planning areas would impact approximately 2,736 acres of coastal sage scrub. Another 529 acres of degraded coastal sage scrub (dCSS) would also be impacted. Thus, the total area of coastal sage scrub (of some variety or correlation) impacted through the development of Otay Ranch is approximately 3,322 acres.

This calculation assumes that all the area within a village shown within a GDP "development bubble" will be impacted. However, some of these areas may be preserved due to environmental or land use decisions made at the SPA and Tentative Map level of planning.

As discussed in the Conveyance Plan, the obligation to restore coastal sage scrub should relate to impacts to coastal sage scrub on a village-by-village basis. That is, for every acre of coastal sage scrub disturbed or destroyed within a village, the village applicant should be required to restore a compensating amount of coastal sage scrub elsewhere within Otay Ranch to ensure 1,300 acres of coastal sage scrub will be

restored at buildout. [The 1,300 acre figure reflects the requirement that 85% of Otay Ranch coastal sage scrub will be protected, 70% through preservation and 15% (1,300 acres) through restoration. If the preservation amount is greater, the restoration requirement will decrease.]

Under this approach, for every one acre of coastal sage habitat destroyed on a village-by-village basis, the applicant would be required to restore 0.4 acres of coastal sage scrub elsewhere in Otay Ranch. Exhibit 15 below depicts the resulting restoration obligation for this alternative.

Exhibit 15
CSS Restoration Allocation By Village

Village No.	CSS (Acres)	dCSS (Acres)	MSS (Acres)	TOTAL (Acres)	Restoration (Acres)
1	57	-	11	68	27.2
2	29	-	2	31	12.4
3	5	-	1	6	2.4
4	71	-	10	81	32.4
5	-	-	-	-	-
6	-	-	-	-	-
7	-	-	-	-	-
8	22	-	-	22	8.8
9	4	-	2	6	2.4
10	3	-	11	14	5.6
11	-	-	-	-	-
12	-	-	-	-	-
13	329	51	-	380	152
14	188	147	-	335	134
15	463	49	-	512	204.8
16	379	246	-	625	250
17	538	36	-	574	229.6
18a	10	-	-	10	4
18b	6	-	-	6	2.4
19	16	-	-	16	6.4
Circulation Element Roads	616	-	20	636	254.4
TOTALS	2,736	529	57	3,322	1,328.80

b. Maritime Succulent Scrub (MSS)

Otay Ranch contains approximately 285 acres of Maritime Succulent Scrub (MSS). The Otay Ranch GDP contemplates that approximately 56 acres of MSS would be disturbed through the development of Otay Ranch. Identical to the rationale discussed above in relationship to CSS, the obligation to restore MSS arises when the MSS habitat is disturbed or destroyed. The Otay Ranch RMP and Findings of Fact require that 56 acres of MSS be restored through the build-out of Otay Ranch. In order to ensure that 56 acres of MSS are restored, each village would have to restore 1 acre of MSS for every 1 acre of MSS taken within the village. Application of this ratio results in a village-by-village restoration obligation as depicted in the following Exhibit 16.

Exhibit 16
Maritime Succulent Scrub Allocation By Village

Village/Planning Area	Habitat Type	Area Impacted (Estimate)	Restoration Requirement (Acres)
Village 1	MSS	11	11
Village 2	MSS	2	2
Village 3	MSS	1	1
Village 4	MSS	10	10
Village 9	MSS	2	2
Village 10	MSS	11	11
Circulation Element Roads	MSS	20	20

C. Resource Preserve Funding Program

The Otay Ranch General Development Plan/Subregional Plan and the Phase One Resource Management Plan contain the following policy language:

> Policy: A draft funding program shall be submitted for review in conjunction with the review of the first SPA. The draft document shall be reviewed and adopted by the City of Chula Vista, County of San Diego, with the advice and consultation of the Preserve Owner/Manager, and interested agencies. A final funding program shall be adopted prior to or concurrent with the approval of the first SPA. The program shall include (1) all sources of funding (not reliant on City or County general funds); (2) a five-year management plan; (3) a five-year budget; (4) proposed staffing; and (5) provisions for availability of initial start-up funds upon conveyance of the first parcel to the Preserve. (GDP/SRP Page 379; RMP Policy 5.12)

1. Funding Program Context

Upon buildout of Otay Ranch and implementation of the Otay Ranch Resource Preserve, the 11,375 acre preserve will be the largest urban open space system in San Diego County. The preserve's proximity and relationship to adjacent Bureau of Land Management land and other open space systems provides the opportunity for the resource preserve to be part of an unparalleled open space system.

It is therefore foreseeable that the Otay Ranch resource preserve will evolve into a complex system within which a variety of activities will be performed

and relationships established. The purpose of this funding section of the Phase 2 RMP is to identify forecasted resource preserve costs, identify funding sources and prepare an anticipated budget for the preserve system. The primary focus of the funding plan is to specify the financial relationships between the Otay Ranch properties[5] and the resource preserve and Preserve Owner/Manager. However, this discussion should occur in a context of the relationship between the resource preserve and other activities. Specifically, the Resource Preserve Plan must consider the following topics.

- The multiplicity of interested parties.
- The relationship between the Resource Preserve and the Otay Valley Regional Park.
- The relationship between the Resource Preserve and the MSCP.
- The relationship between the resource preserve and opportunities to expand the preserve beyond those activities which are the responsibilities of the Otay Ranch properties (through enhanced services or regional benefits).

Exhibit 17 graphically organizes the multiplicity of issues and relationships related to the funding of the Preserve Owner/Manager and the resource preserve. The exhibit examines which entity is responsible for the performance of specific tasks and which entity is responsible for the funding of specific tasks.

The exhibit is divided between those tasks for which there is a nexus between the tasks to be performed and the Otay Ranch properties. In those instances where there is an established nexus, the Otay Ranch

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5 The phrase "Otay Ranch properties" refers to the current and future ownerships of Otay Ranch land and land based financing derived from Otay Ranch property.

properties are directly responsible for the performance of the task or responsible to provide the funding for the performance of the task by a third party (usually the Preserve Owner/Manager).

The exhibit also identifies tasks for which there are no nexus between the Otay Ranch properties and the resource preserve. These tasks are divided into three categories: enhanced, regional park, and regional benefit.

Enhanced tasks are those opportunities that may be present in the future to increase the Otay Ranch resource preserve boundaries or activities by providing funds for greater or new management, monitoring, research, restoration or educational programs. Enhancement opportunities could also include increasing resource preserve boundaries by preserve acquisition of otherwise developable property, or by expediting conveyance in advance of the established conveyance schedule. These enhancement opportunities are not the responsibility of the Otay Ranch properties but may be accomplished through, and by third parties (the MSCP, banking, grants, or General Fund contributions).

a. Regional Park

The Otay Ranch GDP imposes the obligation to convey 11,375 acres to the Preserve Owner/Manager on the property owners. Of this amount, up to 400 acres may be used for active recreation use within the Otay Valley Regional Park. The City of Chula Vista, the County of San Diego and the City of San Diego are currently jointly planning such a park.

The Otay Ranch GDP has not addressed the relationship between the Resource Preserve and the Regional Park planning effort. However, it is

anticipated that the Otay Ranch properties would convey land in fee to the Preserve Owner/Manager. The Resource Preserve Owner/Manager would hold title to the land, and permit (through a lease or some other instrument) the Regional Park to operate within the resource preserve.

Neither the GDP nor any other Chula Vista or County program require the Otay Ranch properties to fund the construction, operation or maintenance of a regional park facility. Additionally, while the Otay Ranch GDP requires the identification of a nature interpretive site, neither the GDP nor any other County or Chula Vista regulation require the Otay Ranch properties to directly construct such a center or pay for the construction, operation or maintenance of such a facility.

Thus, an issue to be addressed by the Joint Exercise of Power Authority (JEPA) at some future date is clarification of the relationship between the resource preserve and the regional park, and identification of funding sources for park construction, operation and maintenance.

Exhibit 17
Resource Preserve Funding/Performance Context

	Otay Ranch Properties Nexus		Non-Otay Ranch Properties Nexus		
Task	**Pre-Conveyance**	**Post-Conveyance**	**Enhanced***	**Regional Park**	**Regional Benefit*****
Property Acquisition	N/A	N/A	Performance: POM Funding: MSCP, Banking, Grants	N/A	Performance: POM Funding: MSCP, Banking, Grants
Capital Costs (trails, fences, etc.)	Performance and Funding: Property Owner	Performance: POM Funding: DIF or HMF or Other Assessment**	Performance: POM Funding: MSCP, Banking, Grants	Performance and Funding: Park Owner/ Operator	Performance: POM Funding: MSCP, Banking, Grants, General Fund, Contribution
Operations and Maintenance	Performance and Funding: Property Owner	Performance: POM Funding: DIF, HMF or Other Assessment	Performance: POM Funding: MSCP, Banking, Grants	Performance and Funding: Park Owner/ Operator	N/A
Revegetation/ Restoration	Performance and Funding: Property Owner (as related to impact mitigation)	Performance and Funding: Property owner (as related to impact mitigation)	Performance: POM Funding: MSCP, Banking, Grants	None required	Performance: POM Funding: MSCP, Banking, Grants, General Fund Contributions
Other Plans or Studies (vireo, grasslands, etc.)	Performance and Funding: Property Owner (SPA by SPA)	None required	Performance: POM Funding: MSCP, Grants	None required	Performance: POM Funding: MSCP, Grants

*Enhanced - Increases in preserve boundaries or activities by reducing development, expediting conveyance, providing enhanced or new management, monitoring, research, instructive or educational programs, maximization of impact avoidance.

**DIF - Development Impact Fee; HMF - Habitat Maintenance Fee

***The extent to which the preserve, its improvements and programs benefit residents beyond Otay Ranch.

b. Regional Opportunities

As discussed throughout this document, the Otay Ranch properties have an obligation to convey 11,375 acres to the Preserve Owner/Manager for the purposes of establishing a resource preserve. However, the creation of the resource preserve establishes a location and organizational framework within which properties other than Otay Ranch or entities other than Chula Vista and the County can contribute additional lands or resource preserve improvements to build an open space system of benefit to the entire region. Exhibit 17 depicts some specific opportunities for such contribution.

c. National Wildlife Refuge

In June 1995, the U.S. Department of Interior, Fish and Wildlife Service released the "Proposal for Wildlife Habitat Protection - Concept Plan for San Diego National Wildlife Refuge, San Diego County, California". The Concept Plan states that the U.S. Fish and Wildlife Service is studying a range of wildlife habitat protection alternatives in the San Diego region and is considering protecting some areas as part of the National Wildlife Refuge System. The Refuge System numbers more than 504 refuges throughout the United States, encompassing more than 82 million acres.

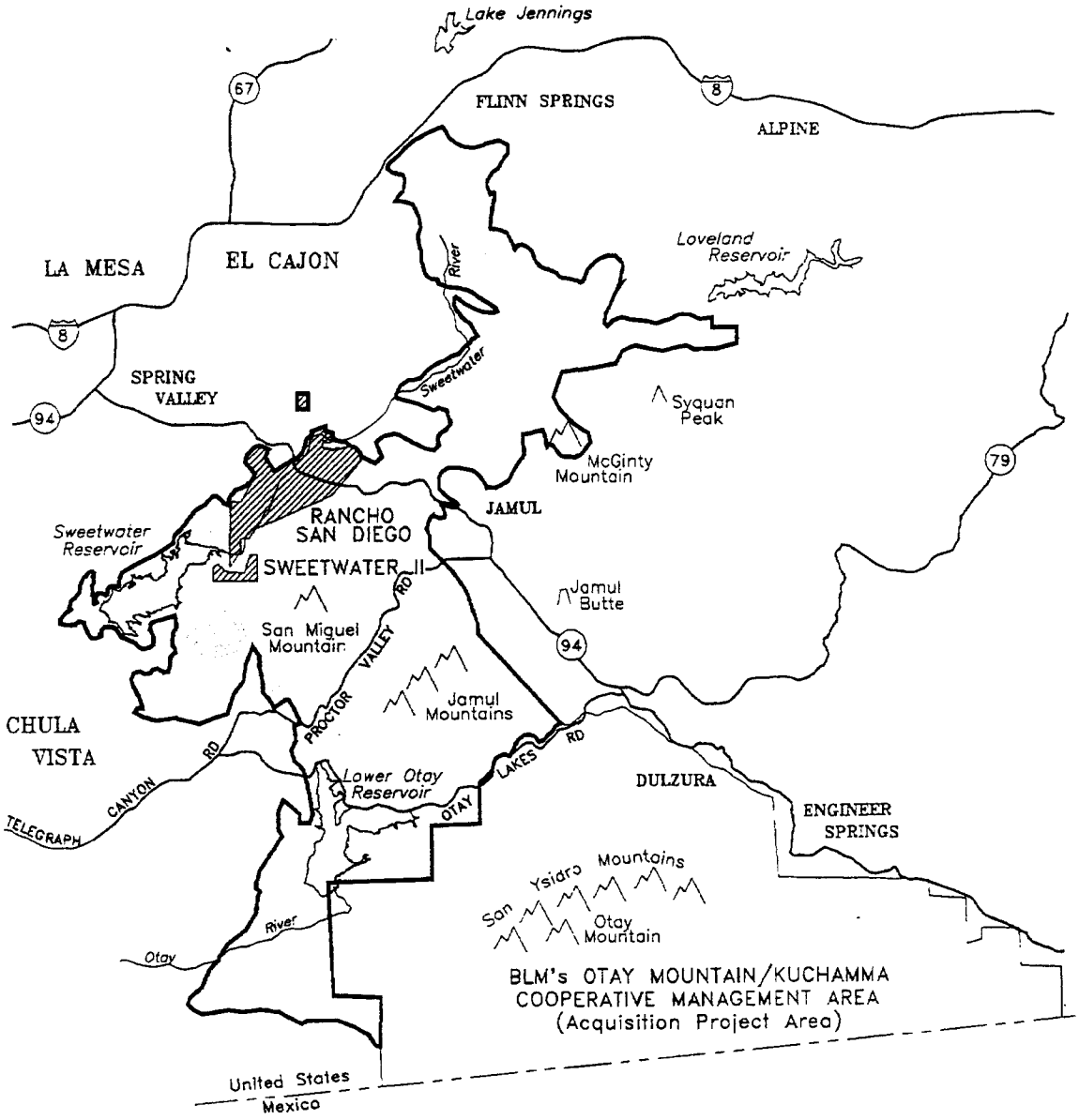
Within San Diego, there are two refuge complexes, the Sweetwater Marsh National Wildlife Refuge and the Tijuana Slough National Wildlife Refuge.

The Concept Paper proposes the San Diego National Wildlife Refuge to include 44,800 acres in the Otay/Sweetwater areas of San Diego County as depicted in Exhibit 18. The Otay/Sweetwater planning area stretches from Loveland Reservoir along the Sweetwater river to the Sweetwater Reservoir: encompasses San Miguel, Mother Miguel and Jamul Mountains; extends along the northern flanks of the San Ysidro Mountains and portions of Otay Mesa; and runs west of SR-94 between Jamul and Rancho San Diego.

The Concept Paper states that identification of a habitat protection area or refuge plan area does not place any new or additional regulatory burdens upon owners of land within the proposed refuge boundaries. Once land is placed within a National Wildlife Refuge, land does not become part of the refuge system until it is purchased or placed under agreement with individual land owners. The U.S. Fish and Wildlife

Service has a policy to acquire lands only from willing sellers. Lands acquired from the sellers are removed from the tax roles, however the Fish and Wildlife Service has a practice of reimbursing counties to reduce revenue loss due to federal acquisition of private property.

Exhibit 18
Proposed San Diego National Wildlife Refuge



Should portions of the Otay Ranch Resource Preserve be included in the San Diego National Wildlife Refuge, the duty to maintain and operate the Resource Preserve would become the obligation of the Fish and Wildlife Service. If this occurred, the obligation of developed Otay Ranch properties to fund these portions should be reconsidered.

d. Otay Ranch Properties

The Otay Ranch GDP established several tasks which are the direct or indirect responsibility of the Otay Ranch properties. Direct responsibility would be those tasks which would be performed by current or future Otay Ranch property owners. Indirect obligation would be those tasks which would be funded by current and/or future Otay Ranch property owners through a land based assessment. The broad tasks which are the responsibility of Otay Ranch property owners are as follows.

- Conveyance of land,
- Funding of the operation and maintenance of the resource preserve,
- Funding of a Biota Monitoring Program,
- Performance or funding of restoration programs.

Each of these is discussed below.

The Otay Ranch resource preserve funding program is based on the assumption that Otay Ranch properties will directly convey resource preserve land to the Preserve Owner/Manager without financial consideration.

Relative to capital costs, the Otay Ranch funding program is based on the assumption that prior to

conveyance of land to the Preserve Owner/Manager, it is the obligation of the Otay Ranch properties to construct fences necessary to protect the conveyed property. After conveyance of the property, it is the obligation of the Preserve Owner/Manager to perform capital improvements and the obligation of Otay Ranch properties to fund such improvements to the extent that there is a relationship between the improvements and the approved development (i.e., there is no obligation to fund regional park capital improvements or any capital improvements beyond those contemplated in the GDP).

It is the obligation of the Otay Ranch properties to maintain land before conveyance, sufficient to maintain the habitat value of the land as described in the Otay Ranch GDP. Subsequent to conveyance, it is the obligation of the Preserve Owner/Manager to perform operation and maintenance tasks. It is the obligation of the Otay Ranch properties to pay for operation and maintenance.

It is the obligation of Otay Ranch properties to revegetate and restore resource preserve lands to the extent required by the Otay Ranch GDP prior to conveyance. Subsequent to conveyance, the Otay Ranch funding plan assumes that it is the continuing obligation of the property owner to restore and/or revegetate land consistent with the requirements of the GDP through the direction of the Preserve Owner/Manager.

2. Cost

The creation and management of large scale resource management preserves is a relatively new phenomenon. Accordingly, it is difficult to identify anticipated preserve management costs. However,

review of existing literature and antibella experience identifies a likely range of costs.

a. County of San Diego

Since 1970, the County of San Diego Department of Parks and Recreation has acquired and managed more than 31,000 acres of open space parkland, including urban canyons, river courses, wetlands and meadows. The Department of Parks and Recreation is charged with responsibility for managing these lands. Their management tasks include trail management and construction, vegetation management, stream corridor improvement, vector control, open space management control, biological assessments and habitat restoration including the removal of exotic vegetation.

b. MSCP

The public review draft of the Multi-Species Conservation Program contains a section addressing the cost of operation, maintenance and program management. The MSCP document concludes that, based upon the information obtained from existing open space and habitat preserves, the average cost of preserve operation and maintenance is estimated to be $36.50 per year per acre. This cost includes brush and trail maintenance, fire prevention, fencing, predator control, range patrol, limited visitor and interpretive services, and amortized one time costs for equipment and facilities. The MSCP plan notes that wetland and riparian area management requires higher operation and maintenance costs than upland areas. Additionally, the MSCP plan notes that another $7.50 per acre, per year cost could be required for management and administration of the MSCP. This cost includes preserve planning, preserve administration and management of acquisition

programs. It is questionable whether all or part of this additional cost is necessary for the Otay Ranch resource preserve, since there are no acquisition or preserve planning costs associated with preserve management.

c. Center for Natural Lands Management

The Center for Natural Lands Management published a September 1994 study entitled "Habitat Management Cost Analysis." The report analyzes a series of existing habitat preserves and proposed habitat preserves. The report notes that the annual costs range from $17 to $460 per acre for existing projects and $8 to $529 per acre for a proposed project. Based upon a review of these costs, the report concludes that for a preserve containing more than 1,000 acres the cost per acre, per year should run between $10 to $75 per acre per year. The report notes that within this range of cost, projects with substantial capital improvements, a large proportion of wetlands, particularly created wetlands, or closely monitored endangered species would tend to fall at the high end of these ranges. It is important to note that the Otay Ranch resource preserve possesses none of these characteristics.

d. Santa Rosa Plateau Ecological Preserve

The "Habitat Maintenance Cost Analysis" prepared by the Center for Natural Land Management contains a series of case studies. One of those case studies appears to be similar to the Otay Ranch situation, the Santa Rosa Plateau Ecological Preserve. This preserve is located on the eastern side of the Santa Ana mountains in Murietta, CA. The 7,000 acre preserve property contains oak woodland, sage scrub and native grasslands substantially similar to the

content of the Otay Ranch resource preserve. The preserve is managed by the Nature Conservancy through a cooperative agreement with the Metropolitan Water District, the County of Riverside, the California Department of Fish and Game, and U.S. Fish and Wildlife Service. The Preserve also contains vernal pools, riparian tenaja, and chaparral communities, similar to Otay Ranch. Visitation to the preserve is encouraged. Visitor facilities include 15 miles of maintained hiking trails, signs, and a boardwalk. A docent program run by volunteers provides public education about the preserve. Much of the Preserve is managed by controlled burning every 5-20 years depending upon habitat type. Several restoration projects are underway and others have been concluded. These efforts include riparian and native grassland work. There is also work being done to eradicate exotic plant species.

The Nature Conservancy is responsible for funding management activities and managing the preserve, which includes a manager, staff and volunteer program. The County of Riverside is responsible for providing patrol, resource protection and other enforcement activities. The California Department of Fish and Game is responsible for helping manage the endowment which funds many of the tasks on the project.

The Nature Conservancy has arranged for four onsite staff members. A caretaker/biologist and an intern both work half time and a ranger dedicates 3/4 of his time to the Preserve. The total cost for the ongoing management of the Santa Rosa Plateau Ecological Preserve is about $243,000 per year or $35 per acre, per year.

e. Biota Monitoring Program Costs

Exhibit 19 below is a listing of budget estimates for biota monitoring[6] tasks within Otay Ranch.

Exhibit 19
Biota Monitoring Program Estimated Annual Costs

Year	Resource Monitoring
1	$113,100
2	$54,100
3	$94,100
4	$76,000
5	$126,100
6	$71,100
7	$56,100
8	$52,000
9	$66,000
10	$124,000
11	$49,000
12	$68,000
13	$52,000
14	$49,000
15	$140,000
16	$52,000
17	$59,000
18	$68,000
19	$52,000
20	$121,000
21	$68,000
22	$52,000
23	$121,000
24	$68,000
25	$52,000
26	$49,000
27	$68,000
28	$128,000
29	$45,000
30	$68,000

[6] The Biota Monitoring Plan is summarized in Section III.5 of this report and continued in its entirety in Appendix F11.

f. Conclusion

Based upon the analysis above, it is concluded that costs for management of the Otay Ranch Resource Preserve could run from $25 to $45 per acre, per year. For analytical purposes, it is assumed that the cost of the Otay Ranch Resource Preserve for operations and maintenance will be almost $35 per acre. This conclusion is reached because of the similarities of the Otay Ranch resource preserve and the Santa Rosa Plateau Ecological Preserve, and the estimated MSCP maintenance and operation costs.

In addition, it is assumed that the cost of the Biota Monitoring Program equals the costs summarized in the preceding exhibit. The assessed maintenance and operation expense, combined with the cost of the Biota Monitoring Program equate to approximately $41.60 per acre per year.

3. Funding Sources

The following is a discussion of four alternative assessment mechanisms to fund the improvement, maintenance, management and operation of a resource preserve.

a. Habitat Maintenance Assessment District

Government Code Section 50060-50070 was enacted in 1993 to provide for public financing of long term maintenance of natural habitat. Authorized expenditures under the program include: habitat creation, restoration, enhancement and maintenance. Legislation established the principle that the lot or parcel is presumed to benefit from the natural habitat if past or proposed development, or use of the lot or parcel has adversely affected or will adversely affect the habitat. A local legislative body may initiate the formation of a habitat maintenance assessment district. As is required in most assessment procedures, every property owner must be notified. Before levying the assessment, the local agency must hold a hearing. If the proposed assessment is opposed by more than 35% of the property owners, the procedures must be terminated. If the assessment is opposed by more than 15% of the property owners, the procedures must be abandoned or an election must be held and the assessment approved by a majority vote. If less than 15% of the property owners protest the assessment, the local agency may proceed with the assessment.

Once levied, the assessment may not be reduced or terminated if doing so would "interfere with the implementation of the habitat plan." This provision, unlike other assessment mechanisms, tends to create a

fairly permanent funding mechanism for habitat protection.

The statute provides that a habitat district can only be created after approval by the California Department of Fish and Game of a "plan for the conservation of natural habitat."

The statute also provides that an assessment cannot last more than 30 years and cannot exceed $25 per parcel (although the amount rises with the increases in the California Consumer Price Index after 1994). The obstacle created by the 30 year limitation can be overcome by reauthorizing the authority and assessment each year for another 30 years.

b. Lighting and Landscape Act of 1972

Streets and highway code sections 22500-22679 establish the Lighting and Landscape Act of 1972. The 1972 act allows local agencies to levy assessments to pay for, among other things, acquisition of open space, land and subsequent grading and landscape maintenance, including water. Unlike the Habitat Maintenance Act, the 1972 Act does not have a $25 per parcel assessment limit and does not require a Fish and Game approved habitat plan. A possible disadvantage to the use of this mechanism is that assessments levied under the 1972 act are not necessarily permanent. A local agency can eliminate the assessment at any time.

c. Community Facilities Act

Government Code Section 53311-53368 established the Mello Roos Community Facilities Act of 1982. The Act allows local governments to impose special taxes within the areas designated. These taxing districts

can be used to pay for acquisition of habitat property and for capital improvements for such lands. Bonds can be issued to raise money for these purposes. Mello Roos revenues can be used to pay ongoing personnel and maintenance costs associated with habitat.

The problem with the Mello Roos tax is that it can be reduced or eliminated upon the action of the local agency.

d. Development Impact Fee

The City of Chula Vista and/or the County of San Diego could impose a Development Impact Fee (DIF) upon new development within Otay Ranch to fund part or all of the costs of the resource preserve. DIFs are problematic funding sources for ongoing operation and maintenance, since the impact fee is a single payment while maintenance costs are a continuing obligation. Accordingly, DIFs should primarily focus upon capital costs or "start-up" costs within the resource preserve.

e. Revenue Source Recommendation

Based on the alternatives reviewed above, it is recommended that the Habitat Maintenance Assessment District (HMAD) authority be utilized as the revenue source for the Otay Ranch Resource Preserve, supplemented by the SPA One applicant's direct funding of initial monitoring activities, until land is conveyed to the Preserve Owner/Manager.

If the HMAD authority is not pursued, the preferred alternative mechanism is the Lighting and Landscape Act of 1972.

4. Resource Preserve Budget

The preceding sections identify the necessary data from which an Otay Ranch Resource Preserve budget can be calculated. Exhibit 9 identifies "the resource preserve land conveyed - forecasted by village." Exhibit 12 identifies "preserve land conveyed - forecasted by year." Exhibit 20 identifies the estimated cost for resource preserve monitoring activities. The preceding section assumes the cost for Otay Ranch maintenance operation will be $35 per acre. The preceding section also concludes the Habitat Maintenance District Authority should be utilized as the revenue source for the Otay Ranch Resource Preserve. State law limits this assessment to $25 per year per parcel (adjusted for inflation).

Based on these assumptions, the following thirty year forecasted budget for the Otay Ranch resource preserve is shown in Exhibit 20.

Exhibit 20 (Revised)
Otay Ranch Resource Preserve Budget
(In $1,000)

Year	Costs			Revenues			Balance	
	Resource Monitoring	Operation & Maintenance	Total Costs	Assessments	SPA One Assumption	Total Revenues	Annual Balance	Cumulative Balance
1	$ 113.1		$ 113.1	$ 15.1	$ 113.1	$ 128.2	$ 15.1	$ 15.1
2	$ 54.1	$ -	$ 54.1	$ 39.3	$ 54.1	$ 93.4	$ 9.3	$ 54.4
3	$ 94.1		$ 94.1	$ 66.0	$ 94.1	$ 160.1	$ 66.0	$ 120.4
4	$ 76.1	$ 41.2	$ 117.3	$ 94.1		$ 94.1	$ (23.27)	$ 97.1
5	$ 126.1	$ 58.6	$ 184.7	$ 121.4		$ 121.4	$ (63.29)	$ 33.8
6	$ 71.1	$ 78.8	$ 149.9	$ 148.0		$ 148.0	$ (1.92)	$ 31.9
7	$ 56.1	$ 91.9	$ 148.0	$ 174.1		$ 174.1	$ 26.1	$ 58.0
8	$ 52.1	$ 101.4	$ 153.5	$ 203.4		$ 203.4	$ 49.9	$ 108.0
9	$ 66.0	$ 122.0	$ 188.0	$ 232.2		$ 232.2	$ 44.1	$ 152.1
10	$ 124.0	$ 152.3	$ 276.3	$ 259.4		$ 259.4	$ (16.85)	$ 135.2
11	$ 49.0	$ 183.9	$ 232.9	$ 282.6		$ 282.6	$ 9.7	$ 185.0
12	$ 68.0	$ 205.9	$ 273.9	$ 309.4		$ 309.4	$ 35.5	$ 220.4
13	$ 52.0	$ 224.7	$ 276.7	$ 333.6		$ 333.6	$ 57.0	$ 277.4
14	$ 49.0	$ 246.1	$ 295.1	$ 357.8		$ 357.8	$ 62.7	$ 340.1
15	$ 140.0	$ 266.0	$ 406.0	$ 380.6		$ 380.6	$ (25.35)	$ 314.7
16	$ 52.0	$ 283.2	$ 335.2	$ 408.4		$ 408.4	$ 73.2	$ 387.9
17	$ 49.0	$ 300.5	$ 349.5	$ 431.7		$ 431.7	$ 82.3	$ 470.2
18	$ 68.0	$ 317.1	$ 385.1	$ 454.0		$ 454.0	$ 68.9	$ 539.2
19	$ 52.0	$ 331.0	$ 383.0	$ 474.3		$ 474.3	$ 91.2	$ 630.4
20	$ 121.0	$ 339.1	$ 460.1	$ 491.8		$ 491.8	$ 31.6	$ 662.0
21	$ 68.0	$ 347.2	$ 415.2	$ 499.4		$ 499.4	$ 84.2	$ 746.3
22	$ 52.0	$ 354.6	$ 406.6	$ 507.1		$ 507.1	$ 100.5	$ 846.8
23	$ 121.0	$ 362.0	$ 483.0	$ 514.8		$ 514.8	$ 31.8	$ 878.6
24	$ 68.0	$ 369.3	$ 437.3	$ 522.6		$ 522.6	$ 85.3	$ 963.9
25	$ 52.0	$ 374.1	$ 426.1	$ 528.2		$ 528.2	$ 102.1	$ 1,066.0
26	$ 49.0	$ 378.9	$ 427.9	$ 533.8		$ 533.8	$ 105.9	$ 1,171.9
27	$ 68.0	$ 383.7	$ 451.7	$ 539.4		$ 539.4	$ 87.7	$ 1,259.7
28	$ 128.0	$ 388.5	$ 516.5	$ 545.0		$ 545.0	$ 28.6	$ 1,288.2
29	$ 45.0	$ 393.3	$ 438.3	$ 550.7		$ 550.7	$ 112.4	$ 1,400.6
30	$ 68.0	$ 398.1	$ 466.1	$ 556.1		$ 556.1	$ 90.0	$ 1,490.5

The assumption relative to acres of land conveyed is based upon the adopted Otay Ranch Village Phasing Plan (maximum residential). The same phasing plan is utilized to forecast the rate of development per year.

The analysis assumes the "maximum residential" development of Otay Ranch. This assumes that residential development will occur in the university area (Villages 9 and 10) and within Village 3. If a university locates within Otay Ranch, then accommodations will have to be made for the university land use to contribute to the maintenance and operation of the resource preserve on an equitable basis, vis-à-vis, residential development. In a similar fashion, if Village 3 is developed as industrial instead of residential, accommodations will have to be made to ensure that the industrial development contributes to the Preserve Owner/Manager maintenance and operation in a manner comparable to the assumed residential contribution.

The number of dwelling units forecasted to be developed by year pursuant to the adopted Village Phasing Plan must be adjusted to reflect two considerations, (1) non-residential parcels and (2) apartment development. Each of these is discussed below.

The Village Phasing Plan assumes construction of 27,059 residential dwelling units. However, Otay Ranch contains many uses other than residential, such as commercial, industrial, community purpose, public use, etc. Of the 10,360 acres of Otay Ranch deemed to be developable (exclusive of limited development areas), about 6,551 acres are designated for residential uses. Accordingly, residential parcels will be supplemented by parcels for non-residential uses. For the purposes of preparing the budget, it is assumed that the non-residential supplement equals 5% of the residential dwelling units or 1,353 additional parcels.

The number of forecasted residential parcels must also be adjusted since some of those units will be developed on single, undivided parcels (apartments). For the purpose of analysis, it is assumed that 50% of residential units will be developed on single, non-divided parcels (this would reduce the total number of parcels by 6,180).

Applying the 5% increase in parcels to accommodate non-residential uses and the 50% reduction in parcels for multi-family units to accommodate apartments results in a net reduction in the number of units of 4,828 units. This means that the cost of funding the resource preserve would have to be allocated over 22,230 parcels, or a 17.8% reduction in the number of parcels when measured against the 27,059 parcels contained in the Village Phasing Plan. Application of this factor results in the budget depicted in Exhibit 20 above.

The budget above reflects a second modification. As development occurs in the initial years, total assessment revenues are relatively modest. For example, in Year 1 it is assumed that revenue assessments total $15,576. This is followed by Year 2 revenues of $40,651. This creates a problem because a Biota Monitoring Program will cost approximately $90,000 per year. Clearly, if the Biota Monitoring Plan was financed from the assessment revenues, a deficit would occur during the initial years of the resource preserve system. To avoid this deficit, it is recommended that the SPA One applicant directly fund the performance of the Biota Monitoring task until the initial preserve conveyance occurs (estimated to be in Year 3).

III. RANCH-WIDE PHASE 2 RMP STUDIES, PLANS AND PROGRAMS

This chapter contains the Ranch-wide Phase 2 RMP studies, plans and programs, organized into two categories:

- Ranch-Wide Phase 2 RMP Studies
- Ranch-Wide Phase 2 RMP Plans and Programs

The Ranch-wide Phase 2 RMP Studies section, reviews studies which provide a data base from which plans and programs are prepared. Once completed, these tasks will not be revisited.

Four of the "Phase 2 RMP Studies" were completed prior to adoption of the original Otay Ranch GDP/SRP and require no further action. These studies include:

- Vernal Pool Study
- Wildlife Corridor Study
- Raptor Study
- Resource Identification and Mapping

The Phase 2 RMP Plans and Programs section includes those efforts which generally require a continuing commitment to implementation.

A. Ranch-Wide Phase 2 RMP Studies

1. Ongoing California Gnatcatcher and Cactus Wren Studies (Appendix F1.) 1995 Contribution to Ongoing California Gnatcatcher and Cactus Wren Studies

The Otay Ranch General Development Plan and Phase One Resource Management Plan contain the following policy language:

- Policy: The following studies shall be completed by the landowner prior to or concurrent with the first SPA in the Phase 2 RMP. Habitat and Population Studies on California Gnatcatcher and Cactus Wren (ongoing studies over 35-year period). (GDP/SRP Page 359; RMP Policy 1.2)

a. Purpose

The purpose of ongoing studies of the coastal California gnatcatcher (*Polioptila californica californica*; CAGN) and the cactus wren (*Campylorhychus brunneicapillus*; CAWR) is to obtain data to be used to assess the long-term viability of these species on the Ranch and to provide additional insight into habitat requirements. A primary focus of these studies is to detect significant changes (versus annual population fluctuations) in the population status of these species.

Data from long-term habitat and population studies will demonstrate if the goals of the RMP are being met for long-term viability of CAGN and CAWR. Monitoring may provide feedback on management activities, resulting in recommendations for changes or improvements in restoration and management strategies. In addition, long term studies aid the scientific community by contributing basic knowledge

on the productivity and demography of the species and their relationship to the habitat.

One of the goals of the RMP is to provide long-term protection for CAGN and CAWR. Uniform population surveys of selected study sites will demonstrate if the ranch-wide population numbers of these two species are being maintained within the usual year-to-year fluctuation. The long-term studies will be accomplished through a systematic and regular sampling program. Such a program will entail detailed studies at a selected number of sites rather than large and labor intensive studies of the entire Ranch.

b. Methodology

Habitat and population studies will be conducted within ten (10) study plots of approximately 100 acres. Five of the plots will be located in areas believed to be of particular significance for gnatcatchers and cactus wrens. Areas for these study plots include Salt Creek Canyon, the Otay River Valley, Poggi Canyon, western San Ysidro Mountains, and southwestern Jamul Mountain. Five additional plots are scattered randomly throughout the Preserve where coastal sage scrub is present.

Each study plot will be surveyed for CAGN and CAWR following the presence/absence survey guidelines of the U.S. Fish and Wildlife Service once a year for five years and then once every three years through the buildout of the Ranch. The USWFS guidelines require three surveys of each 100-acre polygon, at least one week apart, during the breeding season (15 February through 15 July). The surveys should be conducted between January and April to avoid problems in over counting when juveniles are present.

In addition to the surveys of the ten study plots described above, a walkover ranch-wide survey of

CAGN/CAWR will be conducted every five years beginning in 2000. The ranch-wide survey will be conducted during the spring and consist of one pass through the entire ranch to estimate ranch-wide population of CAGN and CAWR and to identify new CAGN or CAWN occupation areas, if any. Once every 10 years, a random survey will be undertaken, based on a scope to be prepared by the Preserve Owner/Manager (POM) and reviewed by the City and County. The purpose of the 10-year studies will be to examine population trend analyses. The first 10-year study will take place in 2005.

During future surveys, CAGN and CAWR locations will be recorded on 200'-scale topographic maps, and information about the sighting will be recorded. A data sheet will be used to record the vegetation and site specific description of the CAGN or CAWR location, and will include the following:

- General and specific location of sighting.
- Weather conditions.
- Number, status, sex, and age of individuals.
- Site description: slope, aspect, elevation.
- Vegetation description: type, three dominant species, height, percent cover, percent gap, percent bare ground, percent herbaceous species.
- General comments, including nest location (if found), behavior, presence of cowbirds, etc.

Vegetation and CAGN/CAWR data from the study plots will be compiled and analyzed during the year they are captured. The analyses will include comparisons of current data with data from previous years. A regression analysis will be conducted, with an emphasis on identifying long-term trends rather than short-term phenomena.

In addition to the foregoing analyses, spring surveys for CAGN and CAWR will be conducted on a SPA-by-SPA basis at the time development is proposed within those SPAs. Surveys would be conducted only in those SPAs with a potential for occupation by these species.

c. 1995 Contribution to Ongoing CAGN and CAWR Studies

For 1995, the contribution to ongoing CAGN and CAWR studies includes identification and mapping of the ten, 100-acre study plots for the surveys beginning in 1996 and described above, along with documentation of the previously unpublished data from the Otay Valley Parcel compiled for the NCCP Scientific Review Panel (Appendix F1). The data and mapping points will be evaluated to eliminate points that represent "double-counting" of CAGN or CAWR. These results will provide a conservative estimate of the population size on the Ranch and identify areas of occupation.

A summary report will be prepared which presents the composite, multi-year (1989-1993) population results, including the spatial distribution throughout the Ranch. The numbers derived from the review serve as a baseline for the CAGN and CAWR population size within each parcel, and form the basis for monitoring ongoing potential future "take" of CAGN and CAWR. Future monitoring of ranch-wide or SPA-level populations will also be compared to this baseline.

d. Research Applications

Habitat studies will be used for analyses of correlations between vegetation characteristics of occupied habitat and the presence of CAGN and/or CAWR. Within each 100-acre study plot, four permanent line-intercept vegetation transects 100 meters long will be

established. Permanent transects will be randomly located within the study plot at the onset of the studies. For each line-transect, vegetation data will be compiled each year. Vegetation data to be obtained include percent cover of the vegetation, number of individuals of each dominant shrub (frequency), percent cover of each dominant shrub (dominance), relative density, canopy height, and the species' importance value. In addition, the vegetation information collected for each CAGN and/or CAWR location may be included in some habitat relationship analyses.

2. Vernal Pool Study (Appendix F2.) Report on the Flora of the Otay Ranch Vernal Pools 1990-1991, San Diego County, California

The Otay Ranch General Development Plan and Phase 1 Resource Management Plan contain the following policy language:

- Policy: The following studies shall be completed by the landowner prior to or concurrent with the first SPA in the Phase 2 RMP... Vernal Pool Study. (GDP/SRP Page 359; RMP Policy 1.2)

The Phase 2 RMP requirement to prepare a Vernal Pool Study was satisfied in 1993 as part of the Otay Ranch GDP/SRP. The adopted plan and attendant EIR incorporates the data and analysis from the "Report on the Flora of the Otay Ranch Vernal Pools, 1990-1991, San Diego County, California," prepared by Dudek and Associates. This report is Appendix F2 of this document.

3. Wildlife Corridor Study (Appendix F3.) Baldwin Otay Ranch Wildlife Corridor Study

The Otay Ranch General Development Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: The following studies shall be completed by the landowner prior to or concurrent with the first SPA in the Phase 2 RMP... Wildlife Corridor Study. (GDP/SRP Page 359; RMP Policy 1.2)

The Phase 2 RMP requirement to prepare a Wildlife Corridor Study was performed in 1993 as part of the Otay Ranch GDP/SRP. The adopted plan and attendant EIR incorporates the data and analysis from the "Baldwin Otay Ranch Wildlife Corridor Studies," prepared by Ogden Environmental and Energy Services. This report is Appendix F3 of this document.

4. Raptor Study (Appendix F4.) Otay Ranch Raptor Management Study

The Otay Ranch General Development Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: The following studies shall be completed by the landowner prior to or concurrent with the first SPA in the Phase 2 RMP... Raptor Foraging/Habitat Study. (GDP/SRP Page 359; RMP Policy 1.2)

The Phase 2 RMP requirement to prepare a Raptor Study was satisfied in 1993 as part of the Otay Ranch GDP/SRP. The adopted plan and attendant EIR incorporated the data and analysis from the "Otay Ranch Raptor Management Study", prepared by Ogden Environmental and Energy Services. This report is Appendix F4 of this document.

5. Resource Identification and Mapping

The Otay Ranch General Development Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: Identify sensitive and significant biological, cultural, paleontological, agricultural, and scenic resources within Otay Ranch that require protection and/or management. (GDP/SRP Page 359; RMP Policies 1.1, 1.5, 1.6, 1.7)
>
> Policy: Identify major land forms within Otay Ranch. (GDP/SRP Page 361; RMP Policies 1.1, 1.5, 1.6, 1.7)
>
> Policy: Incorporate existing and updated vegetation maps, sensitive species distribution maps, biological reports, the vernal pool report, the wildlife corridor study, the raptor habitat/foraging study, and all other pertinent data presented in studies by ASI, RECON, MBA, Ogden, and Dudek into the identification of resource areas. (GDP/SRP Page 359; RMP Policies 1.1, 1.5, 1.6, 1.7)

All key resource areas have been identified pursuant to initial and updated resource studies as part of the Otay Ranch Program Environmental Impact Report prepared by Ogden Environmental and Energy Services and adopted by the County Board of Supervisors and the Chula Vista City Council concurrent with the adoption of the Otay Ranch GDP/SRP.

6. Otay Valley Parcel Cultural Resources Survey (Appendix F5.) Otay Valley Parcel Cultural Resources Systematic Survey

The Otay Ranch General Development Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: In conjunction with the first SPA in the Otay Valley Parcel, complete cultural resource studies to assess cultural resources throughout the Otay Valley Parcel. (GDP/SRP Page 359; RMP Policy 1.314)

A systematic survey of the cultural resources in the Otay Valley Parcel has been completed as part of the Phase 2 RMP. The results of the survey are presented in Appendix F5 to this report, "Otay Valley Parcel Cultural Resource Systematic Survey," (Brian Smith and Associates, 1995).

B. Ranch-Wide Phase 2 RMP Plans and Program

1. Vernal Pool Preservation and Management Plan (Appendix F6.) Vernal Pool Preservation Management Plan

The Otay Ranch General Development Plan and Phase 1 Management Plan contain the following policy language:

> Policy: Develop a vernal pool restoration plan. (GDP/SRP Page 365; RMP Policies 2.9, 3.7)
>
> Policy: If feasible, opportunities and plans for mitigation banks shall be developed in conjunction with preparation of wetlands enhancement plans for Otay River Valley and the vernal pool preservation plan in conjunction with the Phase 2 RMP and the first SPA. All revenue generated by wetlands mitigation banks shall be used to fund Preserve activities. (GDP/SRP Page 366; RMP Policies 2.9, 3.7)
>
> Policy: Investigate the possibility of habitat enhancement and re-introduction of quino checkerspot (*Euphydryas editha quino*) in the Vernal Pool Preserve during the submittal of the Phase 2 RMP. (GDP/SRP Page 366; RMP Policies 2.9, 3.7)

The Phase 1 RMP contains the following implementation requirements and performance standards concerning vernal pool preservation.

Policy: Preservation of a minimum of 95% of the vernal pool habitat on the Ranch supporting vernal pool indicator species (as defined in the vernal pool report). Necessary State and/or federal permits would be obtained in accordance with Section 404 of the Clean Water Act, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game implementing Section 1600 of the California Fish and Game Code. (GDP/SRP Page 365; RMP Policies 2.9, 3.7)

Standards

a. Establish a Vernal Pool Preserve of no less than 330 acres on Otay Mesa south of the Otay River to include all vernal pools identified by the California Department of Fish and Game (Bauder 1986) as J23, J24, J35, J30, and identified sensitive portions of J29.

b. Preserve a minimum of 95% of the Otay Ranch distribution of the State- and federally-listed endangered San Diego button-celery (*Eryngium aristulatum var. parishii*), and 100% of the State- and federally-listed Otay Mesa mint (*Pogogyne nudiuscula*) in locations identified in the vernal pool report (Dudek 1992).

c. Assure the continued survival of little mousetail (*Myosurus minimus var. apus*) and spreading navarretia (*Navarretia fossalis*) on Otay Ranch through preservation of present known localities for these species on the Ranch plus a combination of enhancement, restoration and management efforts.

d. Develop a vernal pool restoration plan to achieve the follow:

   - restore the biota of individual, badly degraded vernal pools;
   - increase diversity and frequency of native biota in all disturbed vernal pools;
   - preserve and enhance vernal pools on K-6 where little mousetail occurs;
   - reduce effect of alien plants;
   - enhance the populations of sensitive species;

- stabilize soils on mounds and in watershed areas;
- provide research and educational opportunities..

The SPA One applicant has addressed these policies and standards through the preparation of the Vernal Pool Preservation and Management Plan, Appendix F6 to this document.

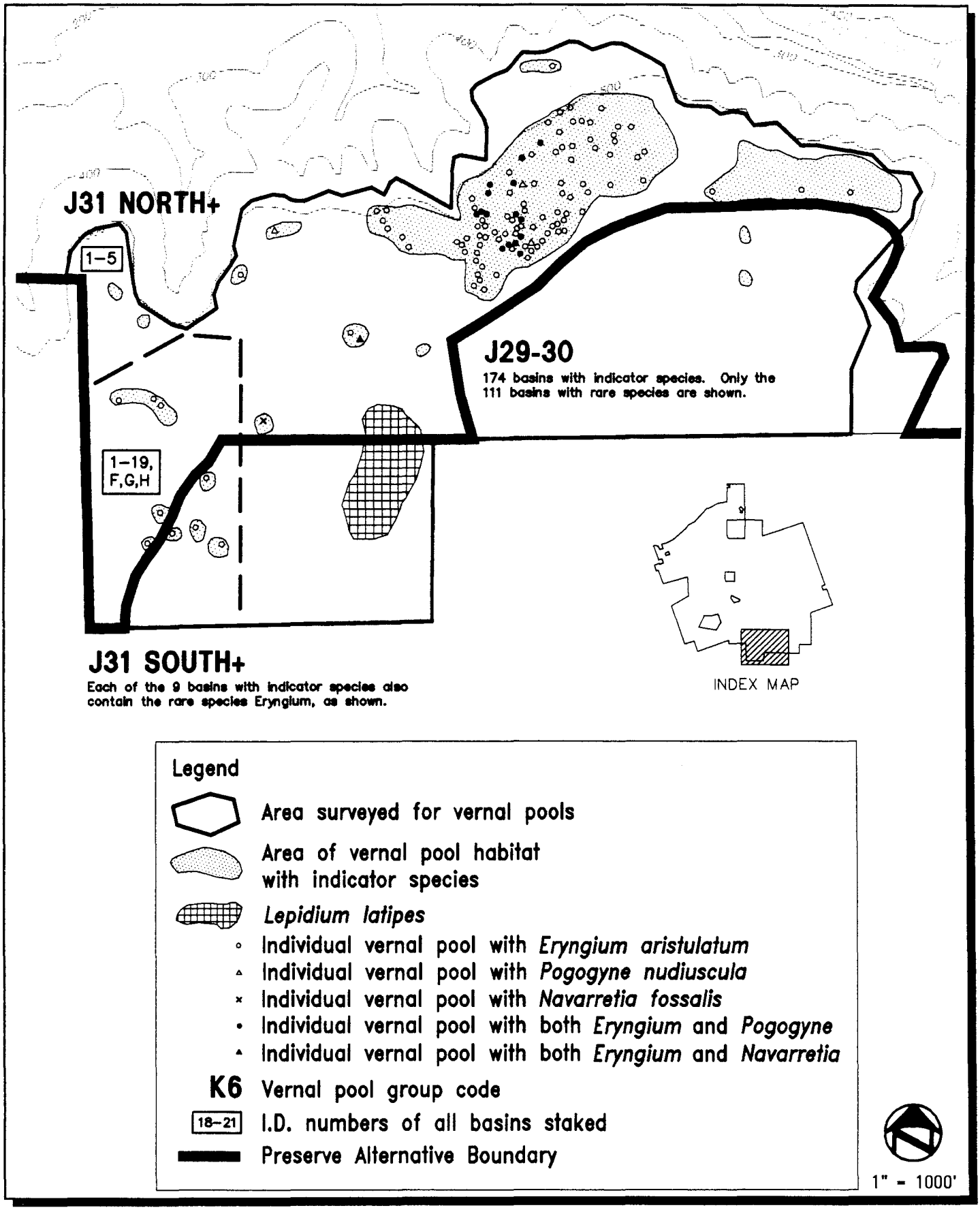
a. Vernal Pool Preservation Boundaries

In conformance with Policy 2.9 of the Otay Ranch Resource Management Plan, the boundaries of the conceptual Vernal Pool Preserve have been refined and formalized. The preserve must be located on Otay Mesa south of the Otay River, include greater than 330 acres, and include all vernal pools identified by the California Department of Fish and Game (Bauder 1986) as J23, J24, J25, J30, and sensitive portions of J29.

Two alternative designs/configurations for the Vernal Pool Preserve have been developed, one of which will be incorporated into the final draft of the Vernal Pool Preservation and Management Plan. Both alternatives are based on modifications of the boundary contained in the GDP and the RMP.

Alternative 1 (Exhibit 21) includes preserve boundary modifications based solely on the existing cumulative data base. The boundaries of this alternative conform reasonably well with those identified in the Otay Ranch GDP and the RMP, with two minor modifications. The narrow, linear portion of the preserve that formerly extended north-south along the western edge of La Media Road has been eliminated from the Vernal Pool Preserve. The northern portion of an area formerly identified for industrial development has been added to the Vernal Pool Preserve. The linear area was

eliminated because following development it would represent a slender peninsula of highly degraded vernal pool habitat between La Media Road and the industrial development that would be highly subject to edge effects and other forms of indirect impacts. Hence, the benefits of protecting the area (i.e., a modest amount of highly degraded vernal pool habitat supporting no sensitive species) would be far outweighed by the cost of its preservation and management. The area added to the Vernal Pool Preserve was included because it was recently documented to support considerable populations of spreading navarretia (*Navarretia fossalis*) and little mousetail (*Myosurus minimus*), both of which are exceedingly rare on the Ranch.



Otay Ranch Phase 2 Resource Management Plan

Vernal Pool Preserve - Alternative 1

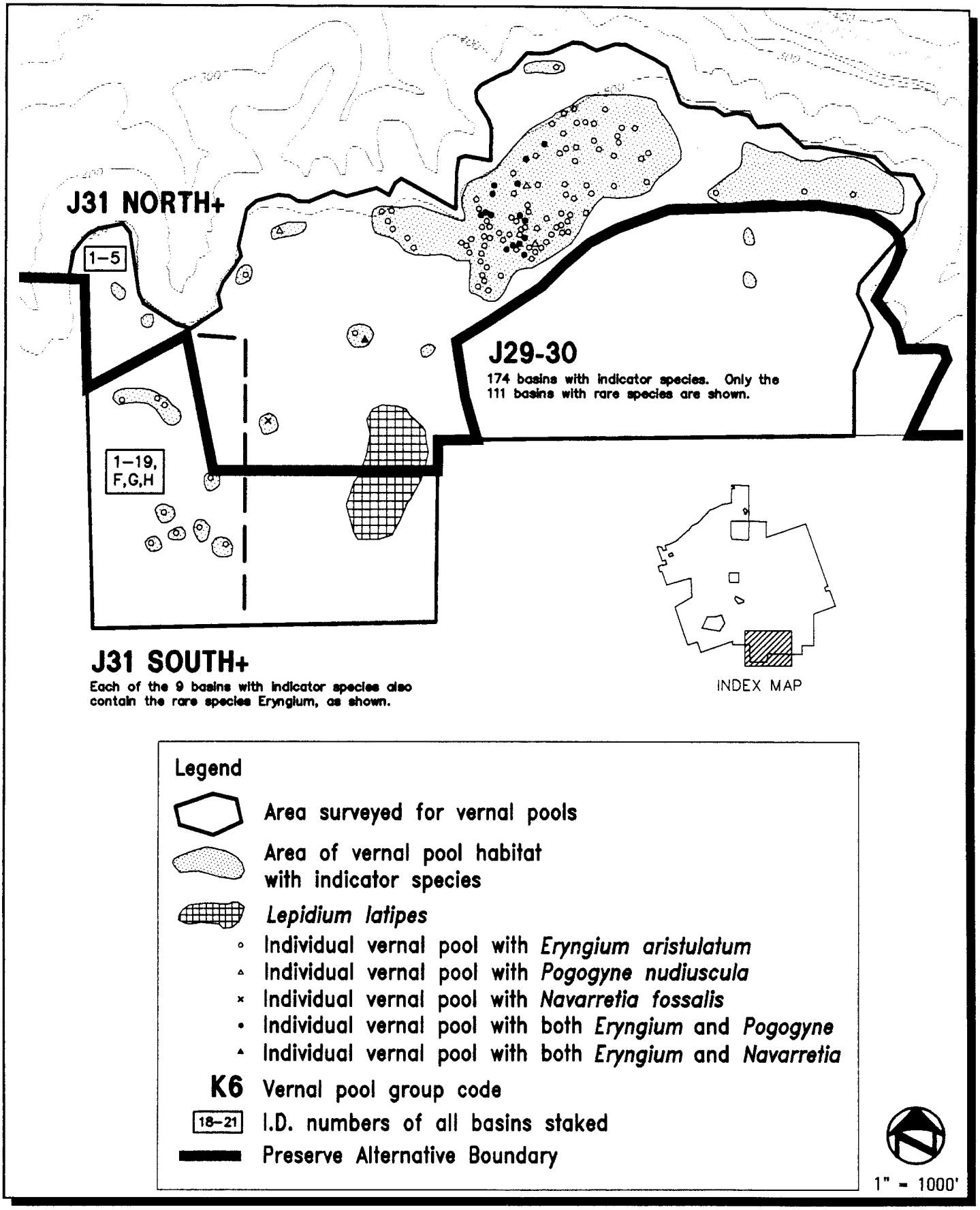
EXHIBIT 21

Alternative 2 (Exhibit 22) includes preserve boundary modifications based on a more pragmatic assessment of the value of including specific areas within the Vernal Pool Preserve, focusing on existing conditions and future management needs. The boundaries of this alternative include three deviations from the GDP/RMP Vernal Pool Preserve. The narrow, linear portion of the preserve that formerly extending north-south along the western edge of La Media Road has been eliminated; the northern portion the industrial development area has been added (with a 50-foot buffer from the nearest pools); and the entire western edge of the conceptual preserve (from the RMP) has been eliminated. In this alternative, highly degraded areas (previously farmed and lacking vernal pool topography) have been excluded because the high cost of management and enhancement would far exceed the value of preservation of the small populations of sensitive plants. Exotic plant removal would require extensive work, and recreation of vernal pool topography may be impossible.

Under either preserve design, the Vernal Pool Preserve would include over 400 acres of vernal pool landscape, and would capture 100% of the known distribution of Otay Mesa mint, 95% of the Otay Ranch distribution of San Diego button-celery, the only known extant populations of spreading *navarretia* on the Ranch, a large population of little mousetail (the only known locations for this species outside the preserve is K6), the single historical Otay Ranch location for California Orcutt grass, the single known Otay Ranch location of Riverside fairy shrimp, and numerous pools that support San Diego fairy shrimp.

The boundaries of the conceptual Vernal Pool Preserve identified in the RMP and refined above were based on the assumption that SR-125 would extend through Johnson Canyon. However, only two alternatives for SR-125 currently are under consideration (the Brown Field and Brown Field Modified), both of which would effect the boundary of the Vernal Pool Preserve. If

either of these alternatives is adopted, the Vernal Pool Preserve should include the degraded vernal pool habitat to the west of the proposed industrial development area (Alternative 1) in order to increase the capture of San Diego button-celery (4 or 5 small populations) and little mousetail (1 population).



Otay Ranch Phase 2 Resource Management Plan

Vernal Pool Preserve - Alternative 2

EXHIBIT 22

The final Vernal Pool Preserve boundary cannot, therefore, be selected until a final determination of the alignment of SR-125 has been made by CalTrans.

b. Vernal Pool Management

The general management and monitoring duties outlined in the Vernal Pool Preservation and Management Plan will be the responsibility of the Preserve Owner/Manager. These include a variety of tasks such as:

- Inhibiting additional degradation (through fencing, elimination of cattle grazing, and access control);
- Establishing protocols for the use of pools for research and education (e.g., who is permitted and what activities are allowed);
- Development of specific monitoring strategies for determining changes in flora and fauna of the pools (e.g., when, why, who); and
- A minimal amount of general enhancement activities (e.g., trash removal).

c. Vernal Pool Impacts

The Otay Ranch property owner(s) will be responsible for the active restoration and enhancement of vernal pool habitat only in association with impacts to vernal pools. The Final Program Environmental Impact Report for Otay Ranch (1992) indicated that a total of 14 acres of vernal pool habitat would be lost as a result of implementation of the Otay Ranch GDP. The EIR indicated that acreage of vernal pool habitat represents the circumscribed concentrations of vernal pools and the intervening Mima mound topography, and that this area is substantially greater than the vernal pool

surface area. Because the circumscribed areas include the Mima mound topography for each potentially affected area, the 14-acre impact is interpreted to reflect the total amount of vernal pool watershed affected. Because mitigation for impacts to vernal pools will be based on a number of factors, including vernal pool surface area, area of watershed, and quality of the pools, there is a need to more accurately identify (both quantitatively and qualitatively) potential impacts in order to estimate future mitigation requirements, if only in a conceptual manner.

In the highest quality vernal pool areas on the Ranch, there are approximately 15-20 vernal pools per acre. Based on an average of 200 square feet of pool surface area per pool, each acre potentially could support about 0.07-0.09 acre of vernal pool surface area. However, in the more disturbed areas and areas of lower quality vernal pools, vernal pool surface area is significantly less per acre. In order to quantify the approximate impact acreage of vernal pool surface area potentially lost by implementation of the GDP, the following methodology was utilized: (1) a list was compiled of all vernal pool complexes on or adjacent to Otay Ranch (Table 1); (2) pools potentially directly impacted by implementation of the GDP were identified by overlaying the approved GDP on maps illustrating the locations of vernal pools; and (3) vernal pool surface area of potentially impacted pools was calculated using the dimensions provided in the "Hydrology and Flora of Otay Ranch Vernal Pools" report (Table 2). For pools of the M2 complex, data accumulated for the biological analysis of SPA One were used to quantify potential impacts. For pools of the J30 complex, data collected for the SDG&E Pipeline 2000 project (Dudek 1994) were used to quantify potential impacts.

Implementation of the Otay Ranch GDP potentially would result in the loss of 37 vernal pools encompassing 16,814 sq. ft. (0.38 acre) of vernal pool surface area scattered over approximately 14.0 acres of vernal pool

habitat. The largest impacts to vernal pool surface area would be realized in the J30 (7,721 sq. ft., Otay Mesa Series) location and K8+ (6,296 sq. ft., Lower Otay Lakes - North Series) complexes. Together, these two areas encompass nearly 90 percent all the vernal pool surface area potentially lost. Modification of the boundary of the Vernal Pool Preserve, in conformance with policy 2.9 of the RMP, would result in the preservation of all of the J30 pools (7,721 sq. ft., Otay Mesa Series location), leaving a total potential impact of 8,993 sq. ft. (0.21 acre) scattered over approximately 14 acres.

The loss of the K8+ complex (6,296 sq. ft.; 12 pools, Lower Otay Lake - North Series) constitutes approximately 70 percent of all potential vernal pool surface area loss on the Ranch (following modification of the Vernal Pool Preserve boundary). Although designated as a Special Study Area, this complex supports no sensitive plant species and has been burned and heavily grazed historically, resulting in a highly disturbed landscape. The 12 pools identified in this complex support a total of six vernal pool indicator species; one pool was documented to support San Diego fairy shrimp. Of the remaining 30 percent of the vernal pool surface area potentially disturbed by the GDP, only K6 supports any sensitive species -- it supports a small population of little mousetail (*Myosurus minimus*).

d. Vernal Pool Mitigation

In summary, the total anticipated impact is the loss of 25 vernal pools encompassing 0.21 acre of vernal pool surface area over approximately 14 acres of vernal pool habitat. The impacted pools are of low quality, for the most part. San Diego fairy shrimp, a widespread species in vernal pools on the Ranch, would be lost from one pool in the K8+ complex and little mousetail would be lost from the K6 complex. Mitigation measures

available to Otay Ranch for these impacts include the following:

- Restoration of the disturbed "circle" in J25, which represents 1.7 acres of highly disturbed vernal pool habitat. Restoration would require the reconfiguration and reconstruction of the Mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species, and inoculation of the pools with vernal pool species. This location would represent an appropriate place in which to attempt "seed trials" to increase the area occupied by the critically endangered *Pogogyne nudiuscula*, which occurs in other intact pools on this mesa.
- Restoration of the scraped/disturbed swath that extends along the southern and southwestern perimeter of J25, which represents 2.75 acres (i.e., approximately 2,400 feet long and 50 feet wide). Restoration would require the reconfiguration and reconstruction of the Mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species, and inoculation of the pools with vernal pool species.
- Restoration of the scraped/disturbed swath that extends through the middle of the J23-24 series, which represents 5.85 acres (i.e., approximately 3,400 feet long and 75 feet wide). Restoration would require the reconfiguration and reconstruction of the Mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species, and inoculation of the pools with vernal pool species.

- Fencing of the Proctor Valley vernal pools to prevent inadvertent encroachment by County road crews and off-road vehicle use.
- An exclusion study on the K6 mesa to determine the biological value of these pools.

In the J23-24 and J25 mesas, there are approximately 15-20 vernal pools per acre. Based on an average of 200 square feet of pool surface area per pool, each acre includes 0.07-0.09 acre of vernal pool surface area.

Implementation of the measures described above would result in the restoration of approximately 10.3 acres of vernal pool habitat within the J23-24 and J-25 complexes, which likely would include a minimum of 153 individuals pools with a combined surface area of approximately 0.7-0.8 acre.

These efforts would be considered appropriate mitigation for the projected loss of approximately 25 individual, low quality vernal pools, encompassing 0.21 acre of vernal pool surface area, over approximately 14 acres of vernal pool habitat (= watershed).

Precise quantification of impacts to vernal pools and their associated watershed will be determined in the future as part of the environmental review of each SPA. Likewise, specific mitigation measures required to receive appropriate permits will be negotiated with the resource agencies at the time of impacts. Nonetheless, the preliminary analyses presented above provide a general framework of anticipated impacts and identify appropriate mitigation measures.

e. Vernal Pool Mitigation Bank Opportunities

Restoration, enhancement, management, and research opportunities within the Otay Ranch Vernal Pool Preserve are likely to provide more mitigation

opportunities than will be required to mitigate impacts associated with implementation of the Otay Ranch GDP. Implementation of enhancement and restoration activities beyond those necessary to mitigate for direct impacts of development within Otay Ranch may be viewed as a contribution to a vernal pool "mitigation bank."

Restoration opportunities, above and beyond those needed for mitigation for impacts associated with the Otay Ranch GDP shall be available as a "mitigation bank" for impacts to vernal pools that occur outside of Otay Ranch (as permitted by the Otay Ranch GDP, Page 366) and administered by the Preserve Owner/Manager. Mitigation for these impacts will be determined based on individual permit requirements negotiated between individual applicants and the resource agencies on a case-by-case basis. Potential opportunities for this type of mitigation are presented below.

Mitigation bank opportunities include the following:

- Reconfiguration of pools disturbed by roads.
- Removal of exotic plant species.
- Installation of permanent fencing.
- Funding of research efforts.
- Revegetation of Mima mounds with coastal sage scrub and/or native grassland to reduce the amount of non-native vegetation in the Vernal Pool Preserve.
- Topographic reconfiguration and floral restoration of disturbed pools in the disturbed "circle" in J25.
- Increase the number of pools with *Pogogyne nudiuscula* on J23-24, J25, and J29-30 through seeding trials.
- Funding of research for a variety of projects:

  - studies of vernal pool hydrology within the Vernal Pool Preserve
  - studies on the effect of weed removal (gradual vs. abrupt)
  - taxonomic studies on species of unresolved systematic position
  - ecological and phenological studies on listed and candidate plant species
  - ecological studies on fairy shrimp (and other invertebrates)
  - ecological studies on pollinators of sensitive vernal pool plants
  - effects of grazing on vernal pools
- Design and implement a biota monitoring program for determining changes in flora and fauna of the pools. (New opportunity not included in the Biota Monitoring Program.)
- Provision of funds to identify and coordinate with all easement holders, landowners, lease holders, government agencies, etc., that may obtain access to Otay Ranch. Inform these agencies of the sensitivity of vernal pool areas and monitor all activities through or within vernal pool habitat.
- Restoration of road pools in J23-24 and J25.
- Reintroduction of quino checkerspot (*Euphydryas editha quino*) into the Vernal Pool Preserve.
- Contribution to signage and interpretive programs.

f. Management Recommendations

Each pool and its immediate surrounding watershed (outside of the Vernal Pool Preserve and vulnerable to degradation) should be identified with brightly colored flossing. Pools that support state and/or federally-listed or candidate species should be fenced. Where pools occur in close proximity, the entire complex should be flagged or fenced.

Otay Mesa Series

The vast majority of the vernal pools in the Otay Mesa Series are included within the Vernal Pool Preserve. This area should receive management efforts consistent with the remainder of the preserve. The most important management features are the inhibition of undesirable access by vehicles, removal of cattle grazing, and monitoring populations of rare species. Based on input from the POM, fencing of the perimeter of the series may be necessary to achieve these goals. At a minimum, all vehicles should be prohibited access except for the perimeter of the mesas where there are existing dirt roads. In addition, starting in Spring 1996, cattle should be excluded according to the schedule and criteria identified below.

Otay Valley Series

With the exception of the K2 complex, all of the pools in the Otay Valley Series will be included within the Preserve. Because no sensitive species have been reported from this series, management efforts should be directed at maintaining the topographic integrity of the basins and mounds. Prior to construction activities on immediately adjacent areas, these complexes should be fenced to inhibit inadvertent encroachment, and construction crews should receive direction to avoid these areas.

Poggi Canyon Series

Pools of the Poggi Canyon Series will be eliminated by development associated with SPA One; hence, management recommendations are inappropriate.

Lower Otay Lake - South Series

The K5, K10+, and K11+ complexes are entirely offsite of Otay Ranch. Prior to development of Otay Ranch in the immediate vicinity, these complexes should be fenced to avoid inadvertent encroachment by construction equipment. The portions of the K12+, K13+, and K14+ complexes onsite potentially will be lost to development; hence, management recommendations are inappropriate. [None of the latter three pool complexes support sensitive species.]

Lower Otay Lake - North Series

Based on the approved GDP, the entire Lower Otay Lake - North Series (i.e., K6, K8+, and K9+) would be lost to development; hence management efforts are inappropriate for all but the K6 complex. This complex historically supported little mousetail, although it is highly degraded at present, and supports no other sensitive species and few vernal pool indicators. Nonetheless, the topographic integrity of the Mima mounds has not been severely compromised by this disturbance. Because intensive grazing is suspected to have been an important factor in the degradation of these pools, it is recommended that a multiple-year (4-5 years) cattle exclusion study be conducted on portions of the mesa to determine whether the K6 pools have the ability to recover and whether incipient populations of vernal pool indicators and/or sensitive species are present but have been suppressed by grazing. These data shall be used to determine whether fragments of the K6 complex should be preserved or whether the

preservation of these fragments is more costly in terms of management than the benefits of their preservation.

Lower Proctor Valley Series

Pools of the R1 series are vulnerable due to their proximity to Proctor Valley Road. However, nearly all of these pools are offsite. It is recommended that the pools in this series be fenced to inhibit degradation from off-road vehicles, trash dumping, and road maintenance activities. The POM should coordinate with County of San Diego road crews to ensure that they are aware of the sensitive nature of this area and that inadvertent impacts should be avoided.

Upper Proctor Valley Series

Pools of the R3+ series are also vulnerable due to their proximity to Proctor Valley Road. It is recommended that the three vernal pools in this series be fenced to inhibit degradation from off-road vehicles, trash dumping, and road maintenance activities. The POM should coordinate with the County of San Diego road crews to ensure that they are aware of the sensitive nature of this area and that inadvertent impacts may constitute a violation of the Federal Endangered Species Act because of the presence of San Diego button-celery. If deemed appropriate by the POM and the County of San Diego, these pools could be included in the Vernal Pool Preserve as a "satellite" preserve unit. Under this scenario, these pools would receive protection, management, monitoring, and enhancement consistent with other pools within the Vernal Pool Preserve south of the Otay River.

2. Range Management Plan (Appendix F7.) Range Management Plan

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Policy: A Range Management Plan, which will depict the allowable interaction between grazing activity and sensitive resources, shall be developed as part of the submittal of the first SPA in the Phase 2 RMP. Under this plan, the most sensitive areas (i.e., areas that support sensitive species) shall have restricted access either by fencing or other appropriate method. The plan shall be subject to review and comment by the Preserve Owner/Manager, the City and County. (GDP/SRP Page 385; RMP Policies 8.1, 8.4)

In satisfaction of this requirement, the SPA One applicant prepared the "Otay Ranch Range Management Plan," (Dudek/Wright, 1995). The plan is Appendix F7 to this document.

The purpose of the Range Management Plan is to identify the relationship between livestock grazing activity and sensitive habitat and species protection. Several policies of the Otay Ranch Resource Management Plan raise range management issues; including the following:

- The RMP calls for the development and implementation of a strategy that facilitates effective long term management of the Preserve.
- The RMP states that existing uses on the Ranch should not be allowed to negatively impact sensitive resources within the

management preserve and includes the following standards:

- Existing agriculture uses including cultivation and grazing shall be permitted to continue as an interim activity only where they have occurred historically and continually.
- No increase in irrigation shall be allowed except for temporary irrigation that may be installed as part of restoration plans, unless approved by the Preserve Owner/Manager. Grazing by sheep and goats shall not be allowed.
- Cattle grazing shall be phased out in accordance with the conveyance and Range Management Plans.

The Otay Ranch Range Management Plan analyzes current grazing conditions on Otay Ranch and identifies the means by which to achieve the policies and standards identified in the RMP for managed grazing activities. The plan identifies existing facilities and recommends new facilities. Range conditions are reviewed and improved range management practices are identified. Livestock inventory is reviewed in terms of numbers and kinds of animals, existing management practice, and seasonal stocking requirements.

The Range Management Plan identifies management goals both within the designated Otay Ranch Preserve and Ranch-wide. Goals that apply to the Otay Ranch Preserve are intended to maintain resources in their existing condition prior to conveyance of land to the Preserve. Ranch-wide goals are related to maintaining a well-run and balanced ranching operation on the entire Ranch. Of concern with respect to the Phase 2 RMP, are those management

goals that apply to the Otay Ranch Preserve. The Ranch-wide management goals are discretionary programs that may or may not be implemented by the land owner.

With respect to Range Management activities within areas designated for further conveyance to the Otay Ranch Preserve, the Range Management Plan includes the following recommendations:

- Eliminate grazing in the area designated Vernal Pool Preserve (pasture 9) at the onset of winter rains through summer when plants have set seed and senesced (generally by early summer). Restriction of grazing shall begin in late 1997-early 1998; either fencing of the Vernal Pool Preserve or elimination of grazing on Otay Mesa will be required to implement this recommendation.
- Coordinate grazing activities within the Vernal Pool Preserve with restoration activities presented in the Vernal Pool Management Plan for Otay Ranch (Dudek 1995a); grazing should be eliminated entirely from the Vernal Pool Preserve prior to initiation of restoration activities.
- Eliminate grazing in riparian habitat in the Otay River Valley (Horse, River Valley West, River Valley East, and O'Neal pastures) during the winter through summer months following the onset of winter rains beginning in late 1997-early 1998; some repair of existing fencing and new fence construction will be required to implement this recommendation.
- Continue grazing in existing locations and at existing stocking levels on the Proctor Valley and San Ysidro Mountains Parcels prior to conveyance of land to the Preserve.

- Coordinate grazing activities within those portions of the Preserve designated for coastal sage scrub restoration activities with the Coastal Sage Scrub and Maritime Succulent Scrub Habitat Replacement and Master Plan (Dudek 1995b); the Master Plan calls for elimination of grazing in areas designated for restoration for a period of time prior to initiation of restoration activities to facilitate soil preparation and exotic plant control.
- As lands are conveyed to the Preserve, temporary ongoing managed grazing activities on conveyed lands may be desirable and should be coordinated with the POM; as discussed in the Range Management Plan, properly managed cattle grazing at light to moderate levels need not negatively affect biological resources and, in fact, abrupt elimination of grazing may be undesirable, particularly with respect to the control of exotic and pest plant species.

3. Coastal Sage Scrub Master Plan (Appendix F8) Otay Ranch Coastal Sage Scrub and Maritime Succulent Scrub Habitat Replacement Master Plan

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Policy: Develop a restoration program for coastal sage scrub (and maritime succulent scrub) habitat. Coastal sage scrub restoration activities shall commence prior to or concurrent with approval of the first SPA within Otay Ranch and shall have achieved success, based on performance standards included in the RMP prior to or concurrent with approval for any development resulting in significant impacts to coastal sage scrub habitat occupied by California gnatcatchers on the Proctor Valley or San Ysidro Mountains parcels. (GDP/SRP Page 368)

The Phase 1 RMP expressly requires the preparation of several resource-specific management plans, including the Vernal Pool Management Plan and the Range Management Plan. However, the Phase 1 RMP does not expressly require the creation of a Coastal Sage Scrub Master Plan concurrent with the approval of the initial Otay Ranch SPA.

However, upon analysis, it is apparent that CSS and MSS restoration activities should be guided by an overall Coastal Sage Scrub Master Plan. Such a master plan ensures that there are opportunities throughout Otay Ranch to restore 1,300 acres of coastal sage scrub, as identified in the GDP/SRP. Furthermore, an overall plan can prioritize and categorize restoration efforts. Finally, the master plan can ensure that future entitlements comply with the GDP/SRP preservation restoration standards.

Accordingly, the Coastal Sage Scrub Master Plan was prepared as part of the Phase 2 RMP. This report is incorporated into the Phase 2 RMP as Appendix F8.

The initial effort of the Master Plan was to categorize the various types of habitat replacement opportunities within Otay Ranch. Based on field work, the report concludes that there are four types of opportunities. The opportunities are identified below with a summary of the nature of replacement effort necessary for each opportunity.

- Natural Regeneration With Management. Revegetation is appropriate when habitat contains native vegetation with minor weed components. Necessary management in these areas would include control of grading, treatment of previous burns and control of moderate weed infestation.
- Habitat Enhancement. Enhancement is necessary in those areas which contain significant coverage of native vegetation interspersed with an equally significant non-native biomass. Irrigation is not anticipated in these areas since it is believed that habitat will establish itself with natural rainfalls. Management practices could include prevention of further disturbance, removal and control of exotic species and augmentation of shrub cover by seeding and container planting.
- Habitat Revegetation: Restoration is necessary in those areas which have no native vegetation and a lower probability for full habitat recovery. In these areas, there is a high content of non-native and noxious weed species coverage. Generally, this classification occurs in areas with no road access to allow transport of soils or plant

material. Irrigation is not proposed for these areas.

- Habitat Restoration. Restoration is proposed for those areas which have no existing native vegetation onsite, are highly disturbed and contain non-native and noxious weed species. Within these areas, access is available for fully mechanized construction techniques. Site preparation on these sites may include soil testing, soil mending, weed abatement, discing and installation of temporary irrigation systems.

As depicted in the chart below, opportunities for replacement technique total 2,010.4 acres. It is anticipated that the Otay Valley Regional Park will likely locate part or all of its allotment of 400 acres of active recreation in this area. Additionally, all or part of the 188 acres of native grassland restoration could take place within the 2,010.4 acres, Exhibit 23 summarizes the habitat replacement opportunities within Otay Ranch by major parcels.

Exhibit 23
Habitat Replacement Opportunities for Otay Ranch

Parcel	Opportunity	Acres
Otay Valley	Natural Regeneration with Management	16.3
	Habitat Enhancement	256.4
	Habitat Revegetation	824.6
	Habitat Restoration	502.1
Total for Parcel		1599.4
Proctor Valley	Natural Revegetation with Management	95.9
	Habitat Enhancement	12.1
	Habitat Revegetation	2.6
	Habitat Restoration	4.1
Total for Parcel		114.8
San Ysidro Mountains	Natural Regeneration with Management	80.9
	Habitat Enhancement	112.4
	Habitat Revegetation	100.0
	Habitat Restoration	2.8
Total for Parcel		296.2
TOTAL FOR ALL PARCELS		2,010.4

4. Coastal Sage Scrub Pilot Restoration Program

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Policy: Develop a restoration program for coastal sage scrub (and maritime succulent scrub) habitat. Coastal sage scrub restoration activities shall commence prior to or concurrent with approval of the first SPA within Otay Ranch and shall have achieved success, based on performance standards included in the RMP prior to or concurrent with approval for any development resulting in significant impacts to coastal sage scrub habitat occupied by California gnatcatchers on the Proctor Valley or San Ysidro Mountains parcels. (GDP/SRP Page 368; RMP Policy 3.4)

The Phase 1 RMP requires that coastal sage restoration activities shall commence prior to or concurrent with approval of the initial Otay Ranch SPA. This task has been performed through the preparation of the Coastal Sage Scrub Restoration Program which included investigation of candidate sites for initial restoration activities. However, the adopted final Otay Ranch Findings of Fact provide that restoration success must be demonstrated prior to or concurrent with development resulting in significant impacts to inhabited coastal sage scrub.

Based on current data, it is anticipated that the development of the SPA One Planning Area will not directly result in a significant impact to occupied coastal sage scrub habitat. However, it is apparent that the extension of East Palomar Street, East Orange Avenue or the transit system from their current terminus eastward to connect with Village One will result in an impact to occupied coastal sage

scrub. Accordingly, it is necessary to demonstrate restoration success prior to or concurrent with the issuance of a grading permit allowing for such an impact.

5. Biota Monitoring Program (Appendix F11.) Biota Monitoring Program

The Otay Ranch General Development Plan/Subregional Plan and the Phase 1 Resource Management Plan contain the following policy language:

> Policy: Establish a comprehensive monitoring program for the biota of the Preserve in conjunction with the Phase 2 RMP. (GDP/SRP Page 375; RMP Policies 5.4, 5.5)
>
> Policy: Develop and implement an annual monitoring program designed to identify changes in quality and quantity of onsite biological resources, including sensitive wildlife species, sensitive plant species, and sensitive habitat types, consistent with the following guidelines: (GDP/SRP Page 375; RMP Policies 5.4, 5.5)

The Phase 1 RMP guidelines for Policy 5.4 state:

- Monitoring shall include, but not be restricted to, focused surveys and population estimates for state- and federally-recognized plants and wildlife species, use of wildlife corridors, and assessments of habitat quality.
- Annual monitoring reports summarizing the results of monitoring efforts shall be submitted to the City, County, and resource agencies.
- Based on the monitoring reports, the City, County, and resource agencies shall evaluate RMP performance, and, if necessary, recommend program modifications.
- Monitoring programs shall include performance standards.

- Habitat restoration efforts shall be monitored.
- Monitoring of the Preserve's sensitive resources may be integrated with mitigation monitoring and reporting programs (MMRPs) carried out in accordance with the CEQA review of individual developments within Otay Ranch.
- The Preserve's monitoring program shall be submitted with the Phase 2 RMP Biota Monitoring Program with input from the Preserve Owner/Manager.

The SPA One applicant has addressed the performance of these policies and standards through the preparation of the "Biota Monitoring Program," Dudek, 1995. This report is Appendix F11 of this report. The key components of the plan are summarized below.

Monitoring requirements for different habitats and different species vary. For this reason, differing and flexible monitoring requirements are recommended. The purpose of this Biota Monitoring Program is to provide the Preserve/Owner Manager with guidelines and direction for implementing the monitoring program. It is not intended to be a strict set of criteria that must be met without variance. It is important to understand that as the biota of the Preserve changes, either by natural succession of vegetation communities or specific environmental perturbations such as fire, flood, drought, etc., changes in the monitoring program will probably be necessary.

Exhibit 24 lists the Otay Ranch biological resources which are the focus of the monitoring program.

Exhibit 24
Biological Resources to be Monitored[9]

Biological Resource	Percent Preserved
Habitats	
Diegan Coastal Sage Scrub	70[1]
Maritime Succulent Scrub	80[2]
Floodplain Scrub, Southern Willow Scrub & Aquatic/Freshwater Marsh	95
Valley Needlegrass Grassland/Perennial Grassland	25
Alkali Meadow	72
Vernal Pools (large or high value & all others per policy 2.9 of RMP)	95
Vernal Pools (specified on page 29 of EIR Findings of Fact)	100
Woodlands	100
Plant Species	
San Diego Thorn-mint (*Acanthomintha ilicifolia*)	95
San Diego County Stipa (Needle-grass) (*Achnatherum diegoensis*)	75
California Adolphia (*Adolphia californica*)	75
San Diego Bur-sage (*Ambrosia chenopodiifolia*)	75
Otay Manzanita (*Arctostaphylos otayensis*)	75
San Diego Sagewort (*Artemisia palmeri*)	75
Orcutt's Brodiaea (*Brodiaea orcuttii*)	75
Dense Reed Grass (*Calamogrostis densa*)	50
San Miguel Savory (*Calamintha chandleri*)	50
Dunn's Mariposa Lily (*Calochortus dunnii*)	100
Slender-pod Caulanthus (*Caulanthus stenocarpus*)	100

[9] In some instances, the Phase 2 RMP preservation standard is different than the Otay Ranch Program EIR Findings of Fact standard. In all instances, the higher standard will be enforced.

Biological Resource	Percent Preserved
Southern Mountain Misery (*Chamaebatia australis*)	50
Fallbrook Spine-flower (*Chorizanthe procumbens* var. *albiflora*)	50
Campo (Delicate) Clarkia (*Clarkia delicata*)	75
Summer-holly (*Comarostaphylos diversifolia* spp. *diversifolia*)	75
Orcutt's Bird's-beak (*Cordylanthus orcuttianus*)	75
Tecate Cypress (*Cupressus forbesii*)	75
Western Dichondra (*Dichondra occidentalis*)	50
Variegated Dudleya (*Dudleya variegata*)	75
San Diego Button-celery (*Eryngium aristulatum* var. *parishii*) (on-site)	95
San Diego Button-celery (where occurring with vernal pool species)	100
San Diego Barrel Cactus (*Ferocactus viridescens*)	75
Mexican Flannelbush (*Fremontodendron mexicanum*)	100
Palmer's Grappling-hook (*Harpagonella palmeri* var. *palmeri*)	75
Otay Tarplant (*Hemizonia conjugens*)	70
San Diego Marsh-elder (*Iva hayesiana*)	75
Spiny Rush (*Juncus acutus* var. *sphaerocarpus*)	50
Gander's Pitcher-sage (*Lepechinia ganderi*)	75
Dwarf Pepper-grass (*Lepidium latipes*)	50
Willowy Monardella (*Monardella linoides spp. viminea*)	100
San Diego Goldenstar (*Muilla clevelandii*)	54
Little Mousetail (*Myosurus minimus* var. *apus*)	100
San Diego Navarretia (*Navarretia fossalis*)	100
California Adder's-tongue Fern (*Ophioglossum lusitanicum* spp. *californicum*)	50
Snake Cholla (*Opuntia parryi* var. *serpentina*)	75

Biological Resource	Percent Preserved
Greene's Ground-cherry (*Physalis greenei*) (if present)	50
Otay Mesa Mint (*Pogogyne nudiuscula*)	95
Engelmann Oak (*Quercus engelmannii*)	50
Coulter's Matilija Poppy (*Romneya coulteri*)	50
Munz's Sage (*Salvia munzii*)	46
Ashy Spike-moss (*Selaginella cinerascens*)	50
Narrow-leaved Nightshade (*Solanum tenuilobatum*)	75
San Diego Sunflower (*Viguiera laciniata*)	75
Wildlife Species	
Cooper's Hawk (*Accipiter cooperii*)	NA[3]
Tricolored Blackbird (*Agelaius tricolor*)	100
Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)	75
Bell's Sage Sparrow (*Amphispiza belli belli*)	70-75
Golden Eagle (*Aquila chrysaetos*)	NA
Burrowing Owl (*Athene cunicularia*)	80-90
San Diego Vernal Pool Fairy Shrimp (*Branchinecta sandiegensis*)	95
Cactus Wren (*Campylorhynchus brunneicapillus*) (viable populations)	100
Northern Harrier (*Circus cyaneus*)	NA
Southwestern Pond Turtle (*Clemmys marmorata pallida*)*	100
Orange-throated Whiptail (*Cnemidophorus hyperythrus beldingi*)	60-70
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	100
Quino Checkerspot (*Euphydryas editha quino*)*	100
Harbison's Dun Skipper (*Euphyes vestris harbisoni*)*	100
Prairie Falcon (*Falco mexicanus*)	NA

Biological Resource	Percent Preserved
Hermes Copper (*Lycaena hermes*)*	100
Thorne's Hairstreak (*Mitouri thornei*)*	100
San Diego Horned Lizard (*Phyrnosoma coronatum blainvillei*)	60-70
California Gnatcatcher (*Polioptila californica*) (on-site CSS habitat)	70
California Gnatcatcher (restore CSS habitat)	15
California Gnatcatcher (documented pairs & individuals)	52
California Red-legged Frog (*Rana aurora draytoni*)*	100
Riverside Fairy Shrimp (*Streptocephalus woottonii*)*	100
Two-Striped Garter Snake (*Thamnophis hammondii*)	90-100
Least Bell's Vireo (*Vireo bellii pusillus*)	100

[1] Plus 1,244 acres of restored coastal sage scrub
[2] Plus 56 acres minimum of restored maritime succulent scrub
[3] Percent Preserved standards were not established for most raptor species

* 100% of HCP/MSCP Standard

A variety of species designated as federal Category 2 Candidates are not included in Exhibit 24. Policy 2.8 of the RMP requires the onsite preservation of plant and wildlife species recognized as Category 2 Candidates. Unless otherwise specified (e.g., orange-throated whiptail or San Diego horned lizard), the standard for preservation for candidate species is a minimum of 75% of Ranch populations in a Preserve configuration that will ensure their conservation in perpetuity. This standard may be re-evaluated if future studies demonstrate a greater or lesser need for conservation of any resources. Achievement of this standard may be measured by evaluation of the sensitive plant and animal maps (MBA/RECON 1989, 1990), or as updated by any Phase 2 RMP field mapping efforts which

include measured areas of the populations to establish the numbers of individuals within those populations.

The Biota Monitoring Plan identifies the following general monitoring techniques.

- Regularly updated aerial photographs to help detect large-scale changes in the biota (e.g., detecting changes in vegetation communities, disturbances such as new trails and roads, etc.);
- Establishment of permanent photo-documentation stations in study plots to detect more fine-grained changes in vegetation communities and composition;
- Field forms that are the same from survey to survey and consistently utilized by personnel;
- Consistent field techniques for measuring biota (e.g., always percent cover or frequency of a dominant plant species in a transect, bird surveys conducted at the same time of year under consistent survey conditions [weather, time of day], live-trapping on transects or grids using the same bait mixture); and
- Measurement of important environmental variables (e.g., local precipitation).

The Biota Monitoring Plan establishes the following schedule (Exhibit 25) for Otay Ranch habitats (year 1 is the first year after the approval of the initial Otay Ranch SPA).

Exhibit 25
Schedule for Monitoring Otay Ranch Habitats

Year	CSS/MSS	Wetlands	Grassland	Alkai Meadow	Woodland	Wildlife Corridor
1	✓			✓	✓	
2	✓			✓		
3	✓	✓	✓	✓		
4	✓			✓	✓	✓
5	✓			✓		
6		✓	✓	✓		
7				✓	✓	✓
8	✓			✓		
9		✓	✓			
10				✓	✓	✓
11	✓					
12		✓	✓			
13				✓	✓	✓
14	✓					
15		✓	✓			
16	✓			✓	✓	✓
17	✓					
18		✓	✓			
19				✓	✓	✓
20	✓					
21		✓	✓			
22				✓	✓	✓
23	✓					
24		✓	✓			
25				✓	✓	✓
26	✓					
27		✓	✓			
28				✓	✓	✓
29	✓					
30		✓	✓			
31				✓	✓	✓
32	✓					
33		✓	✓			
34				✓	✓	✓
35	✓					

Below is a discussion of preservation and preserve design considerations for each habitat type.

a. Coastal Sage Scrub/Maritime Succulent Scrub

Policy 2.2 of the RMP states:

> Preserve coastal sage scrub habitat (including Diegan coastal sage scrub, disturbed coastal sage scrub, maritime succulent scrub, coastal sage scrub/non-native grassland, and coastal sage scrub/chaparral). Habitat values can be measured in terms of number of acres, biodiversity, habitat maturity, and presence of sensitive species.

The RMP standards for the preservation of coastal sage scrub (CSS) are as follows:

- Preservation and restoration activities shall be consistent with the guidelines of any applicable regional open space/resource protection program and shall result in equal or greater overall habitat values than occur under existing conditions.
- A minimum of 85% of the total acreage of CSS habitat onsite shall be preserved or restored.
- The 85% standard may be achieved through a combination of preservation (a minimum of 70% of existing habitat) with the remainder through restoration of disturbed and/or non-native habitats.

The RMP guidelines specify that the following blocks of high quality CSS habitat shall be included in the preserve.

- Salt Creek Canyon

- Wolf Canyon
- Poggi Canyon
- Southwestern Jamul Mountains
- Slopes south and north of the Otay River Valley

To achieve the 85% preservation standard for CSS, 70% (approximately 7,787 acres) of the existing Diegan CSS on-site (approximately 11,125 acres) shall be preserved. An additional 15% (1,244 acres) of CSS will be restored on-site (see discussion above regarding CSS/MSS restoration activities). For maritime succulent scrub (MSS), 80% (approximately 228 acres) of the existing habitat shall be preserved. An additional 20% (56 acres) of MSS will be restored.

b. Wetlands/Riparian Habitats

Policy 2.10 of the RMP addresses preservation and enhancement of wetlands. The standards for preservation of wetlands, including floodplain scrub, southern willow scrub, and aquatic/freshwater marsh, are as follows:

- No net loss of in-kind wetland quality or quantity in accordance with the standards of the U.S. Army Corps of Engineers (COE), implementing Section 404 of the Clean Water Act, the USFWS and CDFG implementing Section 1600 of the California Fish and Game Code.
- If feasible, opportunities and plans for mitigation banks shall be developed in conjunction with preparation of wetlands enhancement plans for the Otay River Valley and the Vernal Pool Preservation and Management Plan in conjunction with the Phase 2 RMP and the first SPA. All revenue

generated by wetland mitigation banks shall be used to fund Preserve activities.

To achieve the standards for preservation and enhancement of wetlands, the RMP guidelines are as follows:

- Include at least 90% of identified wetlands within the Preserve.
- Where feasible, preserve wetlands not included within the Preserve within non-preserve open space.
- Conduct a wetland delineation for each SPA development using the methodology appropriate for the permit or approval being sought.
- Compensate for wetlands outside of the Preserve by wetland creation, restoration, and enhancement within the Preserve, primarily in the Otay River Valley.
- When and where feasible, wetland creation, restoration, and enhancement within the Preserve shall be completed prior to actual habitat disturbance for which these activities are considered mitigation.

The implementation guidelines of the RMP (Section 4.3.1 and Figure 21) specify locations for potential wetland/riparian habitat creation, restoration, and enhancement. These activities will be concentrated in the Otay River Valley in areas that currently support disturbed or degraded wetlands, including tamarisk/mule fat scrub, mule fat scrub, tamarisk scrub, and baccharis scrub. Exhibit 25 depicts the schedule for monitoring this habitat.

c. Alkali Meadow

The approved plan requires that the Preserve include 72% of existing alkali meadow. The EIR Findings of Fact state:

> "Impacts shall be substantially lessened through placement and design features (i.e., road location and infrastructure design) and application of a ratio as defined by the appropriate public agency, however, no less than 1:1 based on habitat type and quality and whether pre-establishment of in-kind habitat has occurred. Development shall not occur until compensation has been approved by California Department of Fish and Game through the Streambed Alteration Agreement and/or Corps of Engineers 404 permit process, as required in accordance with their no net loss statement.
>
> Potential indirect impacts shall be mitigated by providing a minimum 100-foot width buffer for all alkali meadow habitat. No development or landscaping shall be allowed within buffer areas. Impacts to alkali meadow from hydrological alterations (including potential displacement of native habitat with exotic and wetland species) shall be mitigated as described herein. The water runoff from surrounding development shall be diverted and controlled to retain the same amount and seasonality of water input existing before development. A study shall be required at the SPA level of analysis to determine existing hydrological conditions of streams containing alkali meadow and what hydrological changes will occur to these streams after development. The results of these studies shall be used to engineer storm drain development to achieve pre-impact hydrological conditions."

Exhibit 25 depicts the schedule for monitoring this habitat.

d. Woodlands

Policy 2.4 of the RMP stipulates preservation of the following types of woodland habitats: southern interior cypress forest, coast live oak woodland, oak riparian forest, riparian woodland, and sycamore alluvial woodland. The standard of preservation is 100%, and where it is infeasible to include these woodlands in the Preserve, they shall be included in non-preserve open space.

Exhibit 26 depicts the schedule for monitoring this habitat.

e. Vernal Pools

A complete discussion of monitoring methods is provided in the Vernal Pool Preservation and Management Plan (Appendix F6).

f. Wildlife Corridors

A wildlife corridor study of the Otay Ranch was conducted by Ogden Environmental and Energy Services, Inc. in 1992 (Ogden 1992). The corridor study concentrated on five focal species: bobcat (*Lynx rufus*), mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), California gnatcatcher, and cactus wren. Ogden also distinguished between regional and local wildlife corridors:

> "Regional corridors link two or more large areas of open space and are necessary to maintain demographic and genetic exchange between wildlife populations residing within these geographically disjunct areas. Local corridors allow resident animals access to necessary resources (e.g., water, food, cover, or den sites) within a large habitat patch and they may function as secondary connections to the regional corridor system." (pg 1-1)

Based on the Ogden study, several regional and major local wildlife corridors were identified on all three parcels of the Otay Ranch. Several of these corridors also occur on, or cross, other public and private ownerships.

Regional and local wildlife corridors should be monitored using the same field methodology used in the Ogden study. The methodology utilizes accepted field techniques for detecting signs of wildlife species, including tracks, scat, and, rarely, visual contact. Track surveys may be conducted using several methods: (1) finely raked sand or dirt; (2) graphite powdered cards; (3) layers of lime chalk; (4) soot-coated aluminum scent stations; and (5) combinations of these methods. Infrared triggered cameras also can be used to photograph passing animals.

Monitoring sites should be established in areas where there may be future constraints on wildlife movement because of a reduction of habitat (e.g., a narrowing of habitat links), potential physical barriers (e.g., roadways), and potential edge effects from development (noise and lighting). It is reasonable to assume that if animals use relatively constrained wildlife corridors in the Preserve, that they also will use less constrained areas (e.g, the Otay River Valley portion of the Preserve).

Based on the results of the Ogden study, recommended areas for monitoring wildlife corridors include:

- The confluence of Wolf and Poggi canyons
- Otay Valley Road where Wolf Canyon meets the Otay River Valley
- The SR 125 crossing of the Otay River Valley
- The confluence of O'Neal Canyon and Otay River
- Buschalaugh Cove-San Ysidro Mountains
- Jamul Mountains-Dulzura Creek at Otay Lakes Road
- Proctor Valley Road near the City of Chula Vista boundary
- Little Cedar Canyon at Otay Lakes Road
- Cedar Canyon at Otay Lakes Road

Sites should be monitored quarterly during survey years to establish seasonal use of wildlife corridors. Each site should be monitored every three years, as depicted in Exhibit 25.

g. Steep Slopes

According to the Otay Ranch GDP/SRP Program EIR and the Phase 1 RMP, Otay Ranch contains 7,651 acres of land with gradients of 25% or greater. Of this amount, 5,317 acres (69.5% of Otay Ranch's steep slopes) lie within the Preserve, and 1,034 acres (13.5%) are within Planning Areas 16 and 17 Limited Development Area (LDA). Thus, the combined total of steep slopes assumed to be preserved by the Otay Ranch GDP/SRP and Phase 1 RMP is 6,350 acres or 83%.

Based on this analysis the GDP/SRP and the Program EIR impose a requirement that 83% of Otay Ranch's steep slopes must be preserved. The converse is that 17% of the steep slopes (1,301 acres) may be developed.

As more precise data becomes available through the SPA planning process, application of the preservation standard must be reviewed.

Of particular concern is the need to establish a system by which the public is assured that no single entitlement encroaches upon a disproportionately large share of steep slopes, creating an unfair or even impossible preservation burden for subsequent villages. To avoid this problem it is necessary to establish quantifiable limits for the number of acres of steep slopes each village may disturb and still ensure compliance with the 83% preservation standard Ranch-wide.

The GDP slope analysis did not identify disturbed slopes on a village by village basis. Rather, the GDP data is based upon an analysis of broad development boundaries (excluding arterials). The Exhibit below applies the GDP slope analysis on a village by village basis to calculate slopes within each village. The

analysis assumes that all slopes within each village will be disturbed, with the exception that the LDA in Planning Areas 16 and 17 would be preserved. This village by village analysis also excludes impacts caused by circulation element roads.

As depicted in the following table, it is anticipated that if all slopes within all the villages are developed (excluding the Preserve and LDAs), approximately 967.2 acres of Otay Ranch's steep slopes will be encroached upon.

Exhibit 26
Steep Slopes by Villages

	Total Village Acres	Steep Slope Acres	Non-Slope Acres
Village 1	563.1	39.3	523.9
Village 2	542.2	63.8	478.5
Village 3	158.2	6.4	151.8
Village 4	255.2	43.6	211.6
Village 5	407.8	4.8	403.0
Village 6	294.6	2.5	292.1
Village 7	320.5	11.4	309.1
Village 8	288.7	14.2	274.5
Village 9	270.5	44.3	226.1
Village 10	273.0	37.9	235.2
Village 11	335.4	7.2	328.2
Planning Area 12	327.0	0.0	327.0
Village 13	774.2	114.1	660.1
Village 14	875.1	127.6	747.5
Village 15	821.5	186.6	634.9
Planning Area 16	653.7	75.2	578.5
Planning Area 17	796.1	187.4	608.7
Planning Area 18A	193.2	0.2	193.1
Planning Area 18B	84.4	0.7	83.7
Planning Area 19	18.8	0.0	18.8
Totals	**8,253.4**	**967.2**	**7,286.3**

Encroaching upon 967.2 acres is far below the 1,301 acres of encroachment permitted by the preservation standard. However, this data must be refined to reflect the impact of the development of arterials within steep slope areas to more accurately represent the potential grading impacts. Analysis of steep slopes impacted by road construction concludes that about 142.2 acres of steep slopes would be disturbed within the entire Otay Ranch, as depicted below.

Exhibit 27
Steep Slopes Impacted From Road Construction

Arterial	Steep Slope Acreage
Paseo Ranchero	30.1
La Media Road	28.0
East Orange Avenue	13.3
Otay Valley Road	8.6
Hunte Parkway	23.7
Alta Road	8.6
Otay Lakes Road	16.6
Proctor Valley Road	13.3
Total	**142.2**

The total acreage of steep slopes anticipated to be disturbed through development of the entire Otay Ranch was calculated by adding the allocated amount for the arterials to the steep slope acreage assumed disturbed for each village.

The total acreage of steep slopes anticipated to be disturbed through development of the entire Otay Ranch GDP is 1,109.4, which includes development of the Otay Ranch Villages (967.2 acres) and development of planned arterials (142.2 acres) (See Exhibit 28). This is 191.6 acres less than the number of acres permitted to be taken according to the GDP/SRP and EIR preservation standard (1.301.0 - 1,109.4 = 191.6).

The 191.6 acres of unallocated permitted slope encroachment is proportionately allocated to each village. This reallocation is depicted in Exhibit 29. As long as each village does not exceed the permitted number of acres which can be disturbed (far-right column), the public is assured that the Ranch-wide 83% preservation standard will be achieved.

Accordingly, each Otay Ranch SPA must not exceed the areas of steep slopes "permitted to be disturbed" as depicted above, unless the SPA demonstrates that the excess encroachment will not jeopardize the ability of all subsequent entitlements to achieve the Ranch-wide 83% slope preservation standard.

Exhibit 28
Steep Slope Impacts For Village Development and Arterial Construction

	Disturbed by Village Development	Proportionate Allocation of Road Impacts	Assumed Steep Slope Impact (Village + Roads)
Village 1	39.3	12.45	51.7
Village 2	63.8	11.2	75.0
Village 3	6.4	19.3	25.7
Village 4	43.6	14.2	57.8
Village 5	4.8	6.3	11.1
Village 6	2.5	5.1	7.6
Village 7	11.4	2.3	13.7
Village 8	14.2	11.2	25.4
Village 9	44.3	12.1	56.4
Village 10	37.9	9.6	47.5
Village 11	7.2	8.6	15.8
Planning Area 12	0.0	0.0	0.0
Village 13	114.1	11.1	125.2
Village 14	127.6	8.2	135.8
Village 15	186.6	5.5	192.1
Planning Area 16	75.2	5.1	80.3
Planning Area 17	187.4	0.0	187.4
Planning Area 18a	0.2	0.0	0.2
Planning Area 18b	0.7	0.1	0.7
Planning Area 19	0.0	0.0	0.0
Totals	**967.2**	**142.3**	**1,109.4**

Exhibit 29
Steep Slope Allocation by Villages

	Assumed Steep Slope Impacts (Village + Roads)	Proportionate Reallocation	Permitted to be Disturbed
Village 1	51.7	8.9	60.6
Village 2	75.0	13.0	88.0
Village 3	25.7	4.4	30.1
Village 4	57.8	10.0	67.8
Village 5	11.1	1.9	13.0
Village 6	7.6	1.3	8.9
Village 7	13.7	2.4	16.1
Village 8	25.4	4.4	29.8
Village 9	56.4	9.7	66.1
Village 10	47.5	8.2	55.7
Village 11	15.8	2.7	18.5
Planning Area 12	0.0	0.0	0.0
Village 13	125.2	21.6	146.8
Village 14	135.8	23.5	159.3
Village 15	192.1	33.2	225.3
Planning Area 16	80.3	13.9	94.2
Planning Area 17	187.4	32.4	219.8
Planning Area 18a	0.2	0.0	0.0
Planning Area 18b	0.7	0.1	0.8
Planning Area 19	0.0	0.0	0.0
Totals	**1,109.4**	**191.6**	**1,301.0**

h. SPA One Steep Slope Analysis

The Phase 2 RMP steep slope analysis concludes that the Ranch-wide 83% slope preservation standard will be satisfied if SPA One does not encroach upon more than 73.6 acres of steep slopes land within SPA One (including arterials). The Phase 2 RMP analysis further concludes that additional SPA One slope encroachment may be permitted for SPA One arterials, if the total number of steep slopes encroached upon for arterials does not exceed 142.3 acres Ranch-wide.

The SPA One slope analysis concludes that there are 64.62 acres of steep slopes in the SPA One area, of which 54.29 acres will be disturbed. The analysis also concludes that 10.63 acres of steep slopes within SPA One will be preserved. Unlike the Phase 2 RMP and GDP slope analysis, the SPA One slope analysis does not distinguish between slope encroachments caused by arterials and those caused by village development. The SPA One analysis examines all slope areas which would be impacted by virtue of the development of SPA One, including development of the trolley system and the major arterials serving the SPA (Paseo Ranchero, East Orange Avenue, and East Palomar Street).

The 62.8 acres of steep slope encroachment caused by SPA One falls within the 73.6 acres of encroachment permitted within the SPA. Thus, the SPA "permitted to be disturbed" standard is satisfied without relying on slope encroachment permitted for SPA One related arterials.

i. Biota Monitoring Costs

The Biota Monitoring Program identifies the following initial costs on a per year basis to perform necessary tasks in Exhibit 30.

Exhibit 30
Biota Mitigation Estimated Costs

Year	Resource Monitoring
1	$113,100
2	$54,100
3	$94,100
4	$76,000
5	$126,100
6	$71,100
7	$56,100
8	$52,000
9	$66,000
10	$124,000
11	$49,000
12	$68,000
13	$52,000
14	$49,000
15	$140,000
16	$52,000
17	$59,000
18	$68,000
19	$52,000
20	$121,000
21	$68,000
22	$52,000
23	$121,000
24	$68,000
25	$52,000
26	$49,000
27	$68,000
28	$128,000
29	$45,000
30	$68,000

6. Conceptual Infrastructure Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: Develop a general infrastructure plan in conjunction with the first SPA of the Phase 2 RMP that provides standards and criteria to guide specific infrastructure siting and design during the phased buildout of Otay Ranch. (GDP/SRP, Page 382; RMP Policy 6.6)

Policy 6.6 of the approved RMP includes the following guidelines for siting and design of infrastructure facilities within the Otay Ranch Preserve.

- Infrastructure facilities shall be sited and designed to minimize visual and other impacts to Preserve resources.
- Infrastructure plans and their implementation shall be subject to review and comment by the appropriate jurisdictions in coordination with the Preserve Owner/Manager.
- CEQA mitigation requirements for impacts associated with infrastructure shall be reviewed by the appropriate jurisdictions and the Preserve Owner/Manager if such improvements are located within the Preserve.
- When feasible, place infrastructure in roadways or outside the Preserve.
- Mitigation measures for facilities shall conform to restoration/mitigation proposals of the RMP.

As part of this Conceptual Infrastructure Plan, information presented in Figures 14-18 of the Phase 1 RMP has been refined and updated to reflect new data. Updated conceptual infrastructure maps have been prepared and are presented in Exhibits 31 through 36 of this document. Updated information reflects the following:

- Current (8/95) information regarding the status of SR-125 alternatives and La Media Road is shown (Exhibit 31);
- Updated sewerage information is shown and generally indicates less potential effect on preserve resources than previously anticipated (compare Exhibit 32 of this document with Figure 15 of the adopted RMP);
- Updated water facility information is shown and generally indicates less potential effect on preserve resources than previously anticipated (compare Exhibit 33 of this document with Figure 16 of the adopted RMP);
- Updated reclaimed water facility information is shown and generally indicates less potential effect on preserve resources than previously anticipated (compare Exhibit 34 of this document with Figure 26 of the adopted RMP);
- Assumptions regarding anticipated urban runoff facilities have not changed (compare Exhibit 35 of this document with Figure 28 of the adopted RMP);
- CWA Pipeline 4E has been constructed and traverses preserve resources in Salt Creek as illustrated in Exhibit 36 of this document;
- SDG&E Pipeline 2000, a high pressure gas line, is planned within existing SDG&E

easements in the Salt Creek area as illustrated in Exhibit 36 of this document.

Since approval of the Phase 1 RMP, more specific criteria regarding siting and design of utilities and infrastructure has been developed as part of the Multiple-Species Conservation Program. Otay Ranch is located within the study area of the MSCP Plan. Utilities and infrastructure to be located within the Otay Ranch Preserve should be consistent with the final MSCP siting and design criteria presented below.

a. Draft MSCP Utilities Siting Guidelines

Utility corridors (water, gas/electric, phone, sewer, cable) can be compatible with management of biological preserves if the following guidelines are observed:

- Design new utility corridors to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Site new facilities in low quality habitat or disturbed areas, to the extent possible. Encourage underground utilities and trenchless technology, where possible.
- Require approved restoration plans and construction monitoring plans for utility corridor construction and repairs.
- Require erosion control plans to address potential erosion and sedimentation impacts.
- Use narrow construction easements and/or underground construction to allow restoration of the right-of-way to native habitat.
- When possible, use practices such as jacking or boring pipelines under drainages.

- Pre-assemble and fly transmission towers to sites to minimize access impacts.
- Limit permanent access roads to selected points along the utility corridor.
- Erect tamper-proof gates and locks at potential access points to minimize human intrusion.
- Design transmission lines and poles to reduce or eliminate electrocution of raptors and other bird species.
- Develop detailed plans with operational protocols for maintenance crews. These plans should address right-of-way and facilities vegetation control, dust control, fire control, noise control standards, hours of maintenance operations, seasonal constraints on operations that might adversely affect breeding of sensitive species, and erosion control.

b. Draft MSCP Watershed Protection Areas and Water Reclamation Facilities Guidelines

- Prepare site-specific watershed management plans to account for both water resources and biological resources.
- Avoid construction of reclamation plants, pipelines, and pump stations during the breeding season, if breeding areas are within the 60 dBA noise contour of the construction activities.
- Revegetate pipeline sites within native species to minimize erosion and provide cover and forage for wildlife.
- Investigate the potential for creation of multi-purpose wetlands, e.g., wetlands that provide habitat and also treat wastewater.

- Investigate ways to enhance riparian habitat using reclaimed water, but also consider potential downstream effects on brackish water habitats (estuaries).
- Direct lighting away from habitat areas.

c. Draft MSCP Roads and Rail Lines Siting Guidelines

- Investigate ways to make existing or planned roads and rail lines more compatible with preserve management goals. For example, analyze wildlife crossing points and check fencing to ensure that it correctly funnels animals to appropriate crossing points, if they exist.
- Encourage greater flexibility in engineering design standards for 1) maintenance roads through preserve areas and 2) park roads. These roads should be designed to minimize biological impacts while still considering safety standards (e.g., minimize road-bed width, eliminate shoulders on rural roads and maintenance roads, and minimize the number and location of maintenance roads).
- Secure preserve maintenance roads with tamper-proof gates and locks to control public access.
- Limit public access to selected entry points.
- Close any roads used primarily for construction access, either permanently or seasonally to enhance wildlife use of adjacent habitat.
- Design new roads to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Locate new roads in low quality habitat or disturbed

areas and as far from streams as possible to limit habitat disturbance due to increased erosion and runoff.

- Hard-surface frequently used unpaved roads to reduce dust. Stabilize road margins with gravel.
- Site traffic controls such as stoplights and stop signs away from sensitive habitat to reduce the concentration of emissions and noise levels.
- Place roadside turnouts only in non-sensitive areas so as to avoid providing access to sensitive habitats.
- Regularly maintain drainage structures, including culverts. Minimize any materials sidecasting during road maintenance.
- Use bridges instead of culverts for all major riparian crossings and regional wildlife movement corridors, and use fencing to direct wildlife movement toward the wildlife underpass. The size of the riparian crossing and its importance as a wildlife corridor should dictate the design.
- Design freeway interchanges, which generate high noise levels, so that they do not cross wildlife corridors. Noise within underpasses should be less than 60 dBA during the time of day at which the animals use it. Shield corridors from artificial lighting. Use skylight openings within the underpass to allow for vegetative cover within the underpass, and to decrease the cave-like appearance. Design underpasses such that the length-to-width ratio is less than 2. This ratio can be less restrictive if the height of the underpass is greater than 10 m (33-ft.).
- Identify the responsibility for financing bridges and wildlife undercrossings.

- Construct noise barriers for short sections of road that may impact wildlife breeding. Noise barriers should be of sufficient height to attenuate noise from semi-trailer trucks (e.g., approximately 10 ft. along rural roads receiving approximately 10,000 average daily traffic yields 60 dBA).
- Develop road maintenance protocols to prevent adverse impacts to local watercourses, erosion, and excessive amounts of dust and noise.

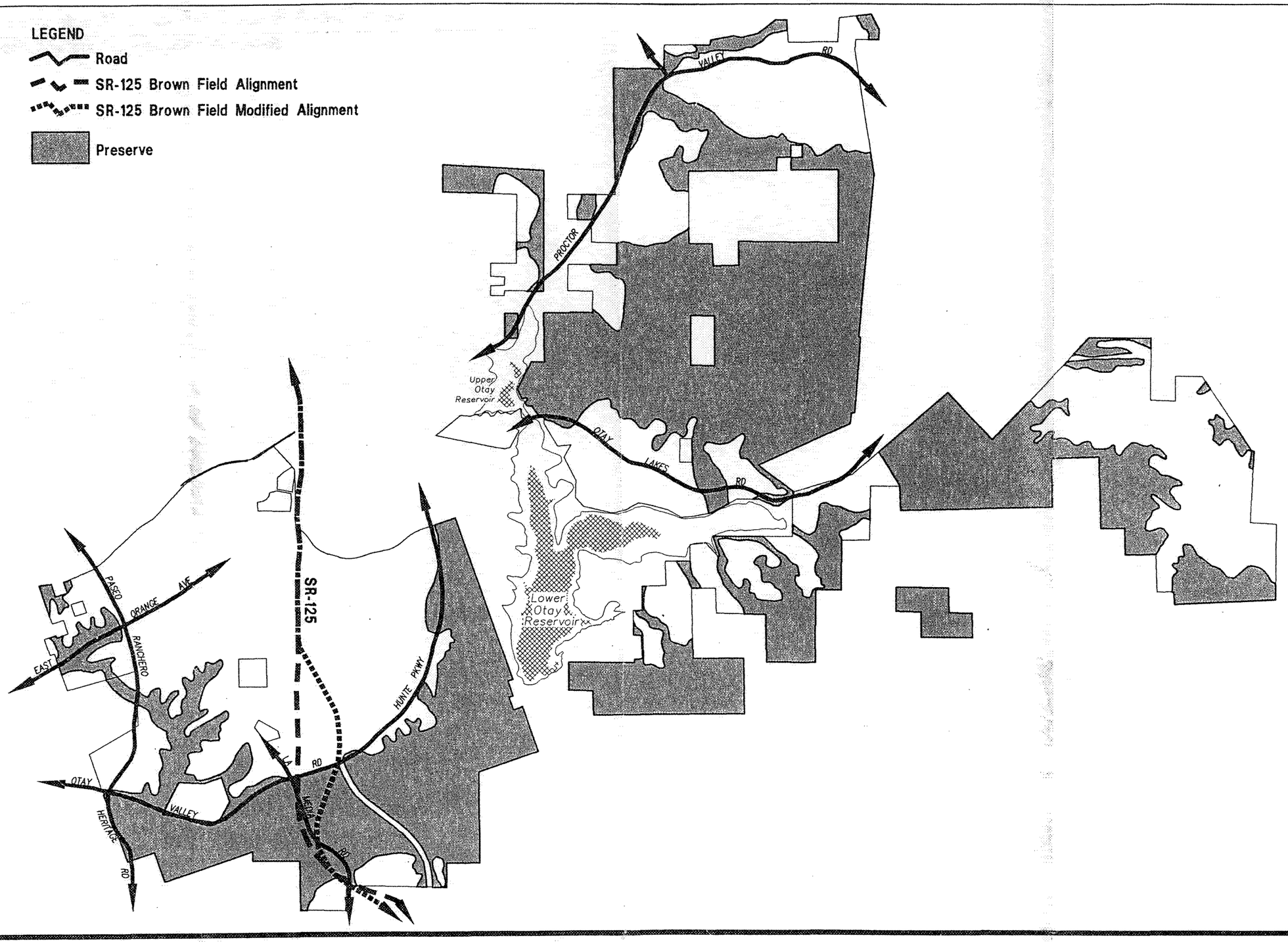
LEGEND

Road

SR-125 Brown Field Alignment

SR-125 Brown Field Modified Alignment

Preserve

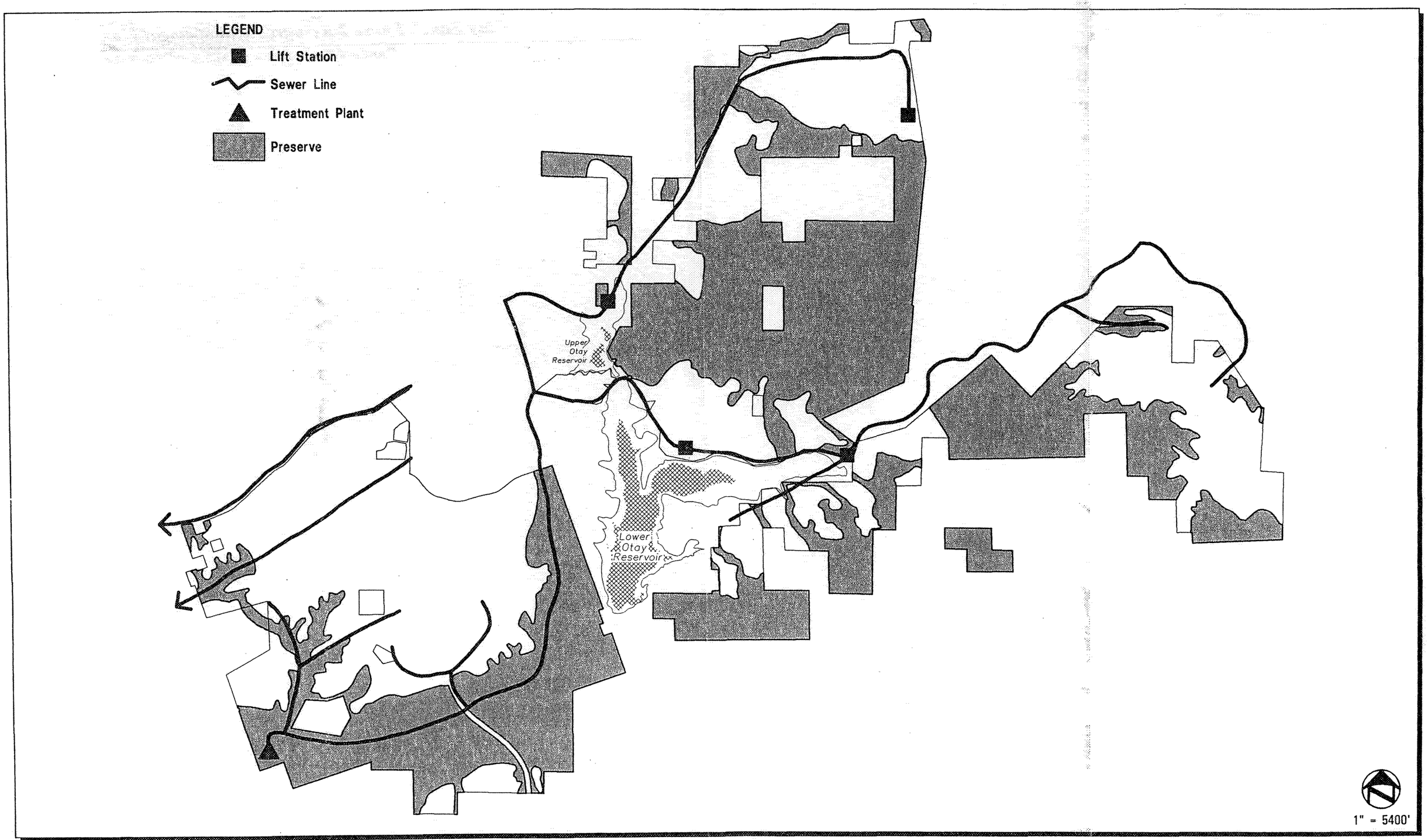


1" = 5400'

Otay Ranch Phase 2 Resource Management Plan

SR-125 Alternatives

EXHIBIT 31



Otay Ranch Phase 2 Resource Management Plan

Sewerage Facilities

EXHIBIT 32

LEGEND

710 Booster Station

710 Reservoir

Transmission Main

Preserve

1620

1296

1296

1620

980

980

Upper Otay Reservoir

980

710

710

980

710

624

624

1296

1296

1620

1296

980

1296

Lower Otay Reservoir

1620

1" = 5400'

Otay Ranch Phase 2 Resource Management Plan

Water Facilities

EXHIBIT 33

LEGEND

- Booster Station
- 600 Reservoir (Zone)
- Transmission Main
- Treatment Plant
- Preserve

1340

980

980

Upper Otay Reservoir

1340

1700

Lower Otay Reservoir

500

1" = 5400'

Otay Ranch Phase 2 Resource Management Plan

Reclaimed Water Facilities

EXHIBIT 34

LEGEND

Pump Station

Conveyance Line

Preserve

Upper Otay Reservoir

Lower Otay Reservoir

1" = 5400'

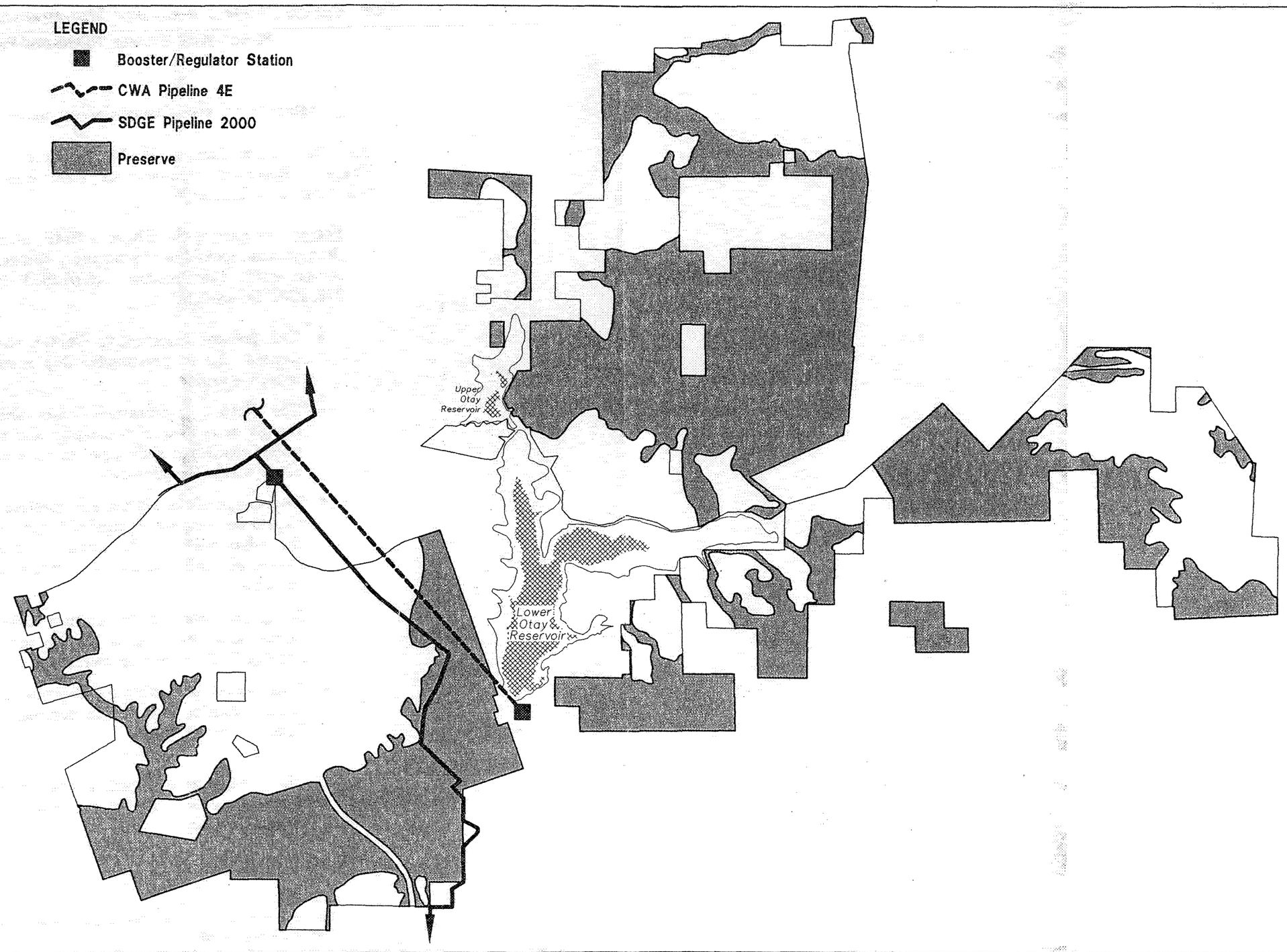
Otay Ranch Phase 2 Resource Management Plan

Urban Runoff Facilities

EXHIBIT 35

LEGEND

- Booster/Regulator Station
- CWA Pipeline 4E
- SDGE Pipeline 2000
- Preserve



1" = 5400'

Otay Ranch Phase 2 Resource Management Plan

Utility Corridors

EXHIBIT 36

7. Nature Interpretive Center Site Alternatives

The Otay Ranch General Plan/Subregional Plan and Phase I Resource Management Plan contain the following policy language:

> Policy: As part of the Phase 2 RMP, identify the potential locations of a nature interpretive center within the Preserve. (GDP/SRP Page 378; RMP Policy 5.11)

- The Nature Interpretive Center should be located in a previously disturbed, non-sensitive areas.
- The Nature Interpretive Center should be readily accessible from existing and planned public roads and should not intrude into core areas within the Preserve.
- The design of the Nature Interpretive Center should be compact to minimize the extent of the edge between the Nature Interpretive Center use and sensitive resources within the Preserve.
- Siting and design of the Nature Interpretive Center shall be compatible with the overall RMP goal of resource protection.
- Trails associated with the Nature Interpretive Center shall be designed in accordance with Policy 6.3 of the RMP.

Based on the policies and criteria above, Exhibit 37 identifies three potential alternative sites for the Nature Interpretive Center.[10]

[10] Cost estimates for a Nature Interpretive Center range from $400,000 to $6,000,000.

LEGEND

1. Bird Ranch Area
2. Vicinity of Southwestern College Archaeology Site
3. Disturbed Area in Mouth of Salt Creek Canyon

Primary Land Use

Secondary Land Use

City Primary Land Use

y Primary Land Use
econdary Land Use

SOURCE: Otay Ranch GDP/SRP Land Use Plan, October 28, 1993

1" = 3450'

Otay Ranch Phase 2 Resource Management Plan

Potential Alternative Sites for Nature Interpretive Center

EXHIBIT 37

IV. SPA ONE PHASE 2 RMP STUDIES PLANS AND PROGRAMS

A. Biological Resources Study (Appendix F9.) SPA One Biological Data Base, A, C, D

The Otay Ranch Program EIR requires that detailed studies be prepared at the SPA level to determine distribution and abundance of sensitive resources. In response to this requirement, the SPA One applicant prepared the SPA One Biological Data Base, 1994-1995, (Dudek, 1995). This document is Appendix F9 to the Phase 2 RMP.

The SPA One Biological Data Base (1994/1995) contains the following conclusions.

- The SPA One 1995 focus survey for the California Gnatcatcher and Cactus Wren concludes that a total of five pairs of California Gnatcatchers were found within SPA One and an additional pair was observed on the northern slope of Poggi Canyon just south of SPA One. Only adults were located, no young or nests were found. A total of 15 pairs of cactus wren were found within SPA One.
- The 1994 focus biological survey concluded that one male and two independent juveniles were observed in two locations within SPA One. Cactus wrens were observed in six locations within SPA One. Most within the drainage along the slopes of Poggi Canyon between proposed Paseo Ranchero and the existing dirt access road.

Vegetation within the SPA One Planning Area was mapped to include: agriculture, annual grassland, coastal sage scrub, disturbed coastal sage scrub, developed, disturbed habitat, fresh water marsh, maritime succulent scrub, disturbed maritime

succulent scrub, and open water. Acreage represented in the Exhibit 38 below.

Exhibit 38
SPA One Vegetation Summary

Habitat Type	Existing Acreage	SPA One	Offsite West of Paseo Ranchero	Total Direct Impacts	Area retained West of Paseo Ranchero
Annual grassland	310.8	140.2	73.1	213.3	92.4
Agricultural	957.0	921.6	0.5	922.1	0.0
Coastal sage scrub (includes coastal sage scrub-cleared)	129.7	15.2	12.2	27.4	96.5
Disturbed coastal sage scrub	49.8	1.9	6.5	8.4	41.0
Developed	24.3	22.9	0.2	23.1	0.5
Disturbed habitat	2.2	0.3	0.0	0.3	1.2
Freshwater marsh	15.2	0.7	0.0	0.7	0.0
Maritime succulent scrub	15.3	4.3	0.6	4.9	7.4
Disturbed maritime succulent scrub	11.8	4.3	0.6	4.9	4.3
Open water	0.3	0.3	0.0	0.3	0.0
Vernal pool	<0.1	0.0	0.0	0.0	<0.10
Total	**1,516.5**	**1,111.7**	**93.7**	**1,205.4**	**243.4**

* Includes approximately 90 acres of Not a Part areas.

B. Biological Performance Standards

Preservation goals for the vegetation communities (habitats) and sensitive species that are potentially impacted by the development of the Otay Ranch have been identified in the GDP Program EIR. As part of the SPA One analysis, it is necessary to consider the relationship between the SPA One project and the performance standards for preservation established by the GDP Program EIR. Exhibit 40 provides an analysis of the relationship of the habitats with the performance standards. This table identifies the habitat type, its performance standard, the number of acres of habitat located on SPA One and the project relationship to the performance standards. This relationship discusses how the project achieves the GDP Program EIR performance standard. Exhibit 41 provides an analysis of the relationship of sensitive species with the performance standards. This table identifies the species, its performance standard, the project-wide distribution data, the project relationship to the performance standards and a brief description of the requirements for each species.

1. Grassland Species

SPA One is characterized by a substantial acreage of non-native grassland habitat and areas that have been previously disturbed by agricultural activities (310.8 acres non-native grassland, 957.0 acres agricultural). Due to the presence of these habitat types within SPA One, review of impacts to species that use non-native grassland and disturbed agricultural habitats is appropriate as part of the SPA One analysis. Within the project area, four animal species are of particular interest - northern harrier, California horned lark, loggerhead shrike and burrowing owl. These species, their listing status, and the relevant GDP EIR performance standards are summarized below.

Exhibit 39
Grassland Species Biological Performance Standards

Common/ Scientific Name	Sensitivity Status[11]	GDP EIR Performance Standard
Northern harrier *Circus cyaneus*	CSC	Preserve 100% of breeding population and 80% of non-breeding population or use approved HCP/MSCP standards
California horned lark *Eremophila alpestris actia*	CSC, *	Preserve 80% of occupied habitat
Loggerhead shrike *Lanius ludovicianus*	CSC, *	Preserve 80% of occupied habitat
Burrowing owl *Speotyto cunnicularia*	CSC	Preserve 80% of occupied habitat or use approved HCP/MSCP standards

As noted, the performance standards established by the GDP EIR for the four grassland species are quite rigid, requiring preservation of 80% or more of occupied habitat. This standard is difficult to meet for these species due to their wide ranging, foraging and breeding habits and their characteristic use of disturbed habitats that are not generally considered to have other biological value. Within the project area, 50% of the nonbreeding population of the northern harrier would be preserved, 49% of the loggerhead shrike habitat, and 31% of the habitat potentially occupied by the burrowing owl and horned lark would be preserved.

For two of the species, the GDP EIR performance standard recommends 80% preservation or "approved

[11] CSC = California Department of Fish and Game "Species of Special Concern": * = species that were formerly classified as Category 2 for listing by the U.S. Fish and Wildlife Service. Currently, the C2 status has been eliminated.

HCP/MSCP standards." Although the MSCP has not yet been approved, a draft of the MSCP was distributed for public review in 1995. The draft MSCP standard for the northern harrier is to include within the open space preserve the breeding population of northern harriers in existing and potential nesting and foraging habitats to maintain a viable metapopulation; maintain important wintering areas for northern harriers; stabilize and maintain preserved breeding and foraging populations; and enhance preserved breeding or wintering populations that have a reduced probability for long-term viability. The draft MSCP standard for the burrowing owl is to include within the open space preserve, occupied burrowing owl breeding and foraging habitat and sufficient potential habitat to maintain and enhance a viable metapopulation; stabilize and maintain the preserved breeding population; enhance preserved populations that have a reduced probability for long-term viability; and establish new burrowing owl colonies in suitable, unoccupied habitat, including historically occupied and newly created habitats.

The open space and resource management plans proposed as part of the Otay Ranch GDP would be consistent with the performance standards included in the Draft MSCP distributed in 1995 for these two species (northern harrier and burrowing owl). In this respect, anticipated preservation of the northern harrier and burrowing owl would be consistent with the established GDP EIR performance standard. This standard would be met based on ranch-wide analysis of proposed open space and resource management plans, rather than on a SPA-by-SPA basis. Within the project area 31% of non-native grassland, 4% of agricultural, and 80% of CSS (a habitat that the harrier and occasionally the owl may use) is preserved.

For the horned lark and loggerhead shrike, the 80% performance standard would not be met either within SPA One or on a ranch-wide basis due to the wide

ranging habits of these species and their use of disturbed habitats for foraging. The ranch-wide project would, however, preserve substantial habitat for these species, including 56% of the grassland habitat as compared to 37% anticipated to be preserved under the Draft MSCP distributed in 1995. Although the performance standard applies to occupied habitat, for these two species, it is difficult to determine how much habitat is actually occupied for breeding and/or foraging. Protection of these species relies on the preservation of suitable habitat and the ability of the species to find appropriate habitat. The ability of these species to find suitable habitat is well documented due to their nomadic nature and mobility. Since the GDP EIR was certified, the regulatory status of these species has changed as discussed below.

In July 1995, the U.S. Fish and Wildlife Service issued a memorandum discussing the policy on candidate species assessment. The U.S. Fish and Wildlife Service redefined candidate species to mean only those species for which there is sufficient information indicating that listing may be appropriate (that is, the present Category 1 candidates). Thus the Category 2 candidate category has been eliminated. The U.S. Fish and Wildlife Service felt that the efforts associated with maintaining the Category 2 species list were diverting listing efforts from the high priority Category 1 candidates. The nearly 4,000 plant and animal species that were on the Category 2 list vary greatly in the quality of information supporting concern for the species. The Category 2 list was frequently viewed by many as species yet to be listed by the U.S. Fish and Wildlife Service. This perception, although wrong, detracted from the efforts to conserve endangered and threatened species. The U.S. Fish and Wildlife Service has been working on how to best identify future candidates from the large pool of species at risk (formerly the Category 2 candidates). This revised list of species at risk has not been finalized as yet. Two of the species on the table above,

loggerhead shrike and California horned lark, were Category 2 candidates and may or may not be reassigned to the list of species at risk. Both of these species occur or potentially occur on SPA One, however the number of shrikes observed is very low (one) and the horned lark is considered likely to occur but was not observed. Neither species was documented as breeding onsite. Due to this change in regulatory status since the GDP EIR was approved, it is appropriate to reevaluate the GDP EIR performance standard at this time and to apply a performance standard that more accurately reflects the life history characteristics of these species and the evolving MSCP preservation standards.

In summary, since the GDP EIR was certified, a Draft MSCP document has been distributed for public review that provides more information regarding performance standards for species preservation on the MSCP covered species list. In addition, the regulatory status of species previously designated as Category 2 has changed. The availability of this information makes it appropriate to redraft the GDP EIR performance standards for the four grassland species at this time. The proposed new performance standard for each of the species would be a follows: include within the open space preserve, occupied breeding and foraging habitat and sufficient potential habitat to maintain and enhance a viable metapopulation. As shown in Exhibit 41, the proposed SPA One project would meet this performance standard on a ranch-wide basis for all four species. This Exhibit has been presented in cross-out/highlight format to indicate the previous and proposed new performance standards for these species.

The revised performance standards for the four species would require maintenance and enhancement of viable metapopulations of these species on the Ranch. Rather than a specific percentage preservation, the revised performance standard would more realistically

reflect the life history, habits, and breeding characteristics of these species. The Biota Monitoring Program that accompanies the Phase 2 RMP would require long-term monitoring of these species. As noted in the attached table, the Otay Ranch GDP preserves 69% of the habitat used by the northern harrier and loggerhead shrike and 56% of the habitat used by the burrowing owl and California horned lark. Although the language of the performance standard would be different, it is anticipated the actual species preservation that would occur under the revised performance standard would be the same as that which would have occurred under the performance standard as currently drafted and significant environmental effects are not anticipated.

2. Noise Impact to the California Gnatcatcher

The performance standard established by the GDP Program EIR calls for noise impacts to California gnatcatcher habitat to be mitigated to achieve a noise level of 60 dBA L_{eq} or below. Areas in SPA One and west of Paseo Ranchero contain coastal sage scrub that support the California gnatcatcher and will be subjected to traffic generated noise from East Orange Avenue, East Palomar Street, and Paseo Ranchero. Noise levels in occupied California gnatcatcher habitat will exceed the 60 dBA L_{eq} standard. It has been proposed that the performance standard be changed to 65 dBA L_{eq} which would reduce the impacted, occupied gnatcatcher habitat to a narrower strip along East Orange Avenue, East Palomar Street, and Paseo Ranchero. The rationale for this change in the performance standard form 60 dBA L_{eq} to 65 dBA L_{eq} is supported by three noise studies and numerous anecdotal observations as discussed below.

Studies on the effects of noise levels from the construction of highways and from traffic-generated noise on existing highways show no adverse effects of

nesting or vocalizations of gnatcatchers, leading to the conclusion that mitigation based on A-weighted sound pressure level of 60 decibels is not biologically justified and is frequently below the noise level generated by most animals (Awbrey, 1993). The Awbrey (1993) study showed that when the A-weighted level of traffic noise was approximately 70 dBA L_{eq}, 94% of the sound in the call of the gnatcatcher exceeds the level of the noise so there was no significant masking of the bird's call.

Observations, including nesting activities within naturally occurring and revegetated coastal sage scrub in the California Department of Transportation right-of-way in San Diego County indicated that gnatcatchers exhibit normal behavior patterns in elevated noise environments (RECON, 1993).

Studies on the major interstates, I-5, I-15, and I-805, indicated that gnatcatchers will use almost all of the available patches of coastal sage scrub habitat even if subject to high noise levels (Famolaro and Newman, 1995). The study conducted by Famolaro and Newman (1995) determined that the gnatcatcher foraged, vocalized, and successfully nested within 57 dBA L_{eq} and 69 dBA L_{eq}. Many of the observations made by Famolaro and Newman were of successfully nesting gnatcatchers on revegetated, manufactured slopes.

Anecdotal observations include locations of pairs of gnatcatchers at I-5 near Solana Beach, I-15 near Fallbrook, I-805 near Murray Canyon, I-805 near Friars Road, State Route 52 near I-15, and Poway Road neat I-15 (Hayworth, personal observations). These are just a few of the locations of gnatcatchers near elevated traffic noise.

In summary, since the GDP Program EIR was certified, information has become available regarding noise effects of the California Gnatcatcher. The

availability of this information makes it appropriate to redraft the GDP Program EIR performance standard for noise levels in relation to gnatcatcher habitat at this time. The proposed new performance standard for noise levels in gnatcatcher habitat would be as follows: Noise levels within gnatcatcher habitat shall, to the extent feasible, achieve 65 dBA. However, for purposes of achieving the gnatcatcher standard of 52%, those gnatcatchers impacted by 65 dBA or greater shall not be counted as preserved. As shown in Exhibit 41, the proposed SPA One project would meet this performance standard on a ranch-wide basis. This table has been presented in cross-out/highlight format to indicate the previous and proposed new performance standards for the California gnatcatcher.

Based on the above studies, changing the noise level from 60 dBA L_{eq} to 65 dBA L_{eq} or higher, would not adversely affect the California gnatcatcher or adversely affect the gnatcatcher preservation performance standard. Support to this conclusion is provided by 1) the 65 dBA L_{eq} noise contour does not extend very far past the roads into occupied habitat, and 2) the studies cited above support the fact that the California gnatcatcher exhibits normal behavior in elevated noise environments. It is anticipated that actual species preservation that would occur under the revised performance standard would be the same as that which would have occurred under the performance standard as currently drafted and significant environmental effects are not anticipated.

3. Cactus Wren

The GDP Program EIR performance standard for the cactus wren requires no loss of viable cactus wren populations and the preservation of adequate habitat within the preserve to maintain no loss of viable cactus wren populations. The term viability refers to the ability of a population to persist. Typically, a

viable population is one that is of sufficient size to maintain a population with 95% probability over 200 years. A Population Viability Analysis (PVA) concluded that the cactus wren population viability in the MSCP study area, of which SPA One is a part, is marginal due to the small size of each subpopulation and the fragmentation of suitable habitat. The current small population of cactus wrens within Poggi Canyon (11 pairs) is not viable as defined in the PVA. Thus even though three pair of cactus wrens will be directly impacted, the performance standard is met.

Exhibit 40
Biological Performance Standards for Habitat

Habitat Under Consideration	Performance Standards Incorporated in GDP Program EIR	Presence on SPA One	Project Relationship to the Performance Standards
Diegan Coastal Sage Scrub	Preserve 70% of CSS.	21.0 acres of CSS and 2.3 acres of disturbed CSS are present on SPA One (Dudek, 1995a).	Achievement of the GDP Program EIR performance standard for CSS is realized through the preservation of CSS within the Otay Ranch preserve, the preservation of CSS within the designated LDA's in Villages 16 and 17 and the restoration of 1,300 acres of CSS ranchwide. No portions of SPA One include areas designated for the Otay Ranch preserve. Portions of the project currently planned west of Paseo Ranchero (East Orange Avenue, East Palomar Street, and the Light Rail Transit) would not conflict with the preserve boundaries established with the GDP. According to the Phase 2 RMP, 1,039 acres would be conveyed with the development of SPA One and 14.3 acres of CSS restoration would occur. The project would not conflict with the GDP and the designated preserve and the performance standard is met.
Maritime Succulent Scrub	Preserve 80% of MSS.	7.3 acres of MSS and 6.9 acres of disturbed MSS are present on SPA One (Dudek, 1995a).	Achievement of the GDP Program EIR performance standard for MSS is realized through the preservation of MSS within the Otay Ranch preserve and the restoration of 57 acres of MSS ranchwide. No portions of SPA One include areas designated for the Otay Ranch preserve. Portions of the project currently planned west of Paseo Ranchero (East Orange Avenue, East Palomar Street, and the Light Rail Transit) would not conflict with the preserve boundaries established with the GDP. According to the Phase 2 RMP, 1,039 acres would be conveyed with the development of SPA One and 9.8 acres of MSS restoration would occur. The project would not conflict with the GDP and the designated preserve and the performance standard is met.
Floodplain Scrub, Southern Willow Scrub, and Aquatic/Freshwater Marsh	Preserve 95% of floodplain scrub, southern willow scrub, and aquatic/freshwater marsh habitats.	15.2 acres of freshwater marsh and 0.3 acre of open water are present on SPA One (Dudek, 1995a).	SPA One preserves 95% of wetland habitats.
Non-native Grassland	No performance standard was set.	185.5 acres of non-native grassland are present on SPA One (Dudek, 1995a). Most of the vegetation mapped as non-native grassland is periodically disced and thus is more similar to agriculture habitat.	No action required.
Valley Needlegrass Grassland/Perennial Grassland	Preserve 25% of the valley needlegrass grassland.	No valley needlegrass grassland is present on SPA One.	No valley needlegrass grassland is present within the project boundaries.

Habitat Under Consideration	Performance Standards Incorporated in GDP Program EIR	Presence on SPA One	Project Relationship to the Performance Standards
Vernal Pools	Preserve 95% of large or high value vernal pool complexes and preserve 95% of all other vernal pools.	SPA One contains no vernal pools. The area west of Paseo Ranchero contains 477 square feet of low quality, disturbed vernal pools, the M5+ pools, which do not contain sensitive species (Dudek, 1995a).	No impacts to the M5+ vernal pools would occur.
Woodlands	Preserve 100% of the southern interior cypress forest, coast live oak woodland, southern live oak riparian forest, and sycamore alluvial woodland.	No southern interior cypress forest, coast live oak woodland, and southern live oak riparian forest and sycamore alluvial woodland is present on SPA One.	No woodland habitats are present within the project boundaries.

Exhibit 41
Biological Performance Standards for Species

Species Under Consideration	Performance Standards Incorporated in GDP Program EIR	Previous Project-wide Distribution Data	Project Relationship to GDP Performance Standards	Comments
San Diego Thorn-mint *Acanthomintha ilicifolia*	Preserve the largest population and 95% of the overall species, including watershed, associated critical habitat and 100-foot wide buffer.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	This species is restricted to heavy clay soils. Although SPA One supports Visalia clays, this soil apparently is inappropriate for San Diego thorn-mint.
San Diego Button-celery *Eryngium aristulatum* var. *parishii*	Preserve 95% of species and preserve 100% of species where it occurs with other vernal pool indicators.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	This species is restricted to vernal pools. The historic pools west of Paseo Ranchero are too disturbed to support this species.
Otay Tarplant *Hemizonia conjugens*	Preserve 80% of species.	Not observed within project boundaries in 1995 (Dudek, 1995a). RECON (1991) survey reports several patches observed west of Paseo Ranchero.	Populations previously mapped by RECON (1991) may be affected by the LRT west of Paseo Ranchero. Surveys will be required prior to the construction of the LRT. Performance standard is met.	Occurs on clay soils near vernal pools within CSS habitat.
Willowy Monardella *Monardella linoides* spp. *viminea*	Preserve 100% of species.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	This species occurs within the floodplains of drainages and at the rock banks of intermittent streams in chaparral. Appropriate habitat is absent within the project boundaries.
Otay Manzanita* *Arctostaphylos otayensis*	Preserve 80% of the species, include populations in northern Jamul Mountains.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral on San Miguel Mountain, Jamul Mountain, Otay Mountain, and Guatay Mountain.
Orcutt's Brodiaea* *Brodiaea orcuttii*	Preserve 75% of the species.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	This species occurs in mesic native grasslands, along the edges of undisturbed drainages, and in vernal pool habitat. No appropriate habitat is present within project boundaries.

Species Under Consideration	Performance Standards Incorporated in GDP Program EIR	Previous Project-wide Distribution Data	Project Relationship to GDP Performance Standards	Comments
Variegated Hasseanthus* *Dudleya variegata*	Preserve 75% of the species, include representative population(s) from each of the three parcels.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Occurs on clay soils within CSS habitat.
San Diego Coast Barrel Cactus* *Ferocactus viridescens*	Preserve 75% of the species, include representative populations from each of the three parcels.	Numerous patches are located west of Paseo Ranchero. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	One patch may be impacted by the light rail transit, all others will be preserved. Performance standard is met.	Associated with CSS and MSS habitats.
San Diego Goldenstar* *Muilla clevelandii*	Preserve 54% of known point occurrences, include representative populations from each of the three parcels.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	This species occurs in native grasslands and grassy openings in coastal sage scrub. Appropriate habitat is absent within the project boundaries.
San Diego Navarretia *Navarretia fossalis*	Preserve 100% of presently known locations of the species and retain all of the J29 pools complex with navarretia.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	This species is restricted to vernal pools. Historical pools west of Paseo Ranchero are too degraded to support this species.
Snake Cholla* *Opuntia parryi* var. *serpentina*	Preserve 80% of the species.	A single population is known to occur west of Paseo Ranchero. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No impacts will occur to this population. Performance standard is met.	This species occurs in a few locations near the coast and in coastal canyons; it is associated with MSS and CSS.
Narrow-leaved Nightshade* *Solanum tenuilobatum*	Preserve 75% of the species.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral on Jamul Mountain and Otay Mountain.
Orcutt's Birds-beak* *Cordylanthus orcuttianus*	Preserve 75% of the species and avoid impacts to populations in the canyon south of the San Diego Air Sport Center.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with CSS and riparian scrub/disturbed floodplains. No appropriate habitat is present.
Delicate Clarkia *Clarkia delicata*	Preserve 75% of the species and avoid impacts to the population in the canyon in northeastern Jamul Mountains.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral and cismontane woodland.

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San Diego Marsh-elder* *Iva hayesiana*	Preserve 75% of the species.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Found in seasonally mesic drainages with high salinity and/or alkalinity which are not present within project boundaries.
Munz's Sage *Salvia munzii*	Preserve 46% of point occurrences for the species.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral and CSS habitats.
Greene's Ground-cherry *Physalis greenei*	Conduct additional survey work to verify presence/absence of the species.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Was rejected by CNPS as too common: a synonym of P. crassifolia, a common taxon. Found in sandy and rocky areas, associated with CSS.
San Diego County Needlegrass (formerly Stipa) *Achnatherum diegoense* *(formerly Stipa diegoensis)*	Preserve 75% of the species.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral, CSS, and native grasslands.
San Diego Sunflower *Viguiera laciniata*	Preserve 75% of the species.	Numerous patches of the species are located west of Paseo Ranchero. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	None of the patches will be impacted. Performance standard is met.	Associated with chaparral and CSS.
California Adder's-tongue Fern *Ophioglossum lusitanicum* ssp. *californicum*	Preserve 50% of the species.	Not observed within project boundaries; appropriate conditions are not present. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral, native grasslands and margins of vernal pools.
Coulter's Matilija Poppy *Romneya coulteri*	Preserve 50% of the species.	Not observed within project boundaries. Two plant surveys (RECON, 1991, and Dudek, 1995a) were conducted.	No action required. Performance standard is met.	Associated with chaparral, CSS, often occurring in burned areas.
San Diego Vernal Pool Fairy Shrimp *Branchinecta sandiegensis*	Preserve 95% of occupied habitat where co-occurring with vernal pool habitat.	Not observed within project boundaries; five weekly survey visits were conducted in 1995 during the period that water was ponded in depressions from tire tracks, etc. (Dudek, 1995a).	No action required. Performance standard is met.	Restricted to vernal pools.

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Riverside Fairy Shrimp *Streptocephalus wootoni*	Preserve 100% of occupied habitat, or use approved Habitat Conservation Plan/San Diego Multiple Species Conservation Program [HCP/MSCP] standards.	Not observed within project boundaries. One survey (Dudek, 1995a) was conducted. No pools are present with sufficient depth.	No action required. Performance standard is met.	Known from only one pool on Otay Mesa. Requires pools in which the water persists into April or May and reaches a minimum depth of 1 foot.
Quino Checkerspot *Euphydryas editha quino*	Preserve 100% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	Associated with small meadow-like flower fields, native grasslands, and vernal pools.
Harbison's Dun Skipper *Euphyes vestris harbisoni*	Preserve 100% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	This species is restricted to riparian areas and intermittent streams, particularly beneath oak woodlands. The larval host plant is not present within project boundaries.
Hermes Copper *Lycaena hermes*	Preserve 100% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	Associated with CSS and chaparral in which its larval host plant redberry (*Rhamnus crocea*) constitutes at least 5% of the shrub cover.
Thorne's Hairstreak *Mitouri thornei*	Preserve 100% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	Restricted to southern interior cypress forest (Tecate cypress woodland) in the San Ysidro Mountains.
Arroyo Southwestern Toad *Bufo microscaphus californicus*	Preserve 80% of the species, occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	This species occurs along sandy washes, arroyos, and streambeds in arid regions. The eggs and tadpoles require clear, slow-moving streams or ponds to develop.

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California Red-legged Frog *Rana aurora draytoni*	Preserve 100% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	Associated with dense, shrubby riparian vegetation associated with deep, still or slow-moving water. Although they can occur in ephemeral or permanent streams or ponds, populations cannot be maintained in ephemeral streams in which all surface water disappears. This species does not move large distances from their aquatic habitat.
Western Spadefoot Toad* *Scaphiopus hammondii*	Preserve 80% of occupied habitat, or use approved HCP/MSCP standards.	Three areas within CSS habitat occupied by spadefoot toads were observed west of Paseo Ranchero. The areas were formed from water ponding in tire tracks. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 95% of vernal pools, 98% of floodplain scrub and 71% of CSS will be preserved ranchwide. The non-native grassland is periodically disced so it is not suitable habitat. Performance standard is met. Spring 1996 survey will be conducted as part of the Biota Monitoring Program.	Associated with lowlands, frequenting washes, vernal pools, floodplains of rivers, alluvial fans, playas, and alkali flats, but also ranges into the foothills, mountains, and desert. Prefers areas of open vegetation and short grasses where the soil is sandy or gravelly. Requires backwaters of quiet streams, ephemeral ponds, and vernal pools for breeding.
Silvery Legless Lizard *Anniella pulchra pulchra*	Preserve 80% of occupied habitat.	Not observed within project boundaries but is potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 93% of woodland, 69% of chaparral, and 71% of CSS will be preserved ranchwide. Performance standard is met.	Associated with sandy or loose loamy soils under sparse shrub vegetation in a variety of habitats including CSS, chaparral, woodlands.
Southwestern Pond Turtle *Clemmys marmorata pallida*	Preserve 100% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries; appropriate conditions are not present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required. Performance standard is met. Spring 1996 survey will be conducted as part of the Biota Monitoring Program.	Occurs in slow-moving rivers, ponds, and small lakes. They also require an upland oviposition site that may be a considerable distance form the aquatic site.

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Orange-throated Whiptail* *Cnemidophorus hyperythrus*	Preserve 80% of occupied habitat, or use approved HCP/MSCP standards.	One location west of Paseo Ranchero was recorded from two survey visits (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a). More individuals are likely present.	A total of 69% of chaparral, 98% of floodplain scrub, 93% of woodlands, and 71% of CSS will be preserved ranchwide. The annual grassland is periodically disced and is not suitable habitat. The recorded whiptail location will not be impacted. Performance standard is met.	Associated with open CSS with a vegetative cover of about 50%, but also are found in open, ruderal areas, chaparral, riparian scrub, and around oak woodlands.
Coastal Western Whiptail* *Cnemidophorus tigris multiscutatus*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 71% of CSS, 93% of woodland, 98% of floodplain scrub, and 69% of chaparral will be preserved ranchwide. The annual grassland is periodically disced and not suitable habitat. Performance standard is met.	Occurs in a variety of habitats including valley-foothill woodlands, riparian, mixed conifer, chaparral, annual grasslands, and CSS.
San Diego Banded Gecko* *Coleonyx variegatus abbotti*	Preserve 80% of occupied habitat.	Not observed within project boundaries; appropriate conditions are not present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required. Performance standard is met.	Uncommon in coastal and cismontaine areas in CSS and chaparral, occurring in granite or rocky outcrops.
Northern Red Diamond Rattlesnake* *Crotalus ruber ruber*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 71% of CSS, 69% of chaparral, and 93% of woodlands will be preserved ranchwide. Performance standard is met.	Associated with CSS, chaparral, and open woodland habitats. Often found near rocks or dense vegetation which provide cover.
San Diego Ringneck Snake* *Diadophis punctatus similis*	Preserve 80% of occupied habitat.	Not observed within project boundaries; appropriate conditions are not present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required. The annual grassland is periodically disced so it is not suitable habitat. Performance standard is met.	Most common in open, rocky areas within valley-foothill woodlands, mixed chaparral, and annual grasslands.
Coronado Skink* *Eumeces skiltonianus interparietalis*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 69% of chaparral, 93% of woodlands, and 71% of CSS will be preserved ranchwide. The non-native grassland is periodically disced so it is not suitable habitat. Performance standard is met.	Occurs in a variety of habitats including grasslands, open chaparral, woodlands, and CSS. Prefers open areas within habitats and is often associated with rocky or moist areas.

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Two-striped Garter Snake* *Thamnophis hammondii*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 98% of floodplain scrub, 93% of willow woodland, and 100% of marsh will be preserved ranchwide. Performance standard is met. Spring 1996 survey will be conducted as part of the Biota Monitoring Program.	Occurs in aquatic and riparian habitats, streams, rivers, brackish coastal marshes, ponds, and lakes. Prefers rocky streams with protected pools. Often uses upland areas adjacent to wetlands.
San Diego Mountain Kingsnake* *Lampropeltis zonata pulchra*	Preserve 100% of occupied habitat.	Not observed within project boundaries; appropriate conditions are not present.	No action required. Performance standard is met.	Occurs in woodlands, hardwood-conifer forests, montaine chaparral, coniferous forests, and wet meadows. Found at high elevation such as the Palomar, Laguna, and Cuyamaca mountains.
Coastal Rosy Boa* *Lichanura trivirgata roseofusca*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 69% of chaparral and 71% of CSS will be preserved ranchwide. Performance standard is met.	Associated with rocky chaparral-covered hillsides and canyons and CSS.
San Diego Horned Lizard* *Phrynosoma coronatum blainvillei*	Preserve 80% of occupied habitat, or use approved HCP/MSCP standards.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 71% of CSS, 69% of chaparral, and 98% of floodplain scrub will be preserved ranchwide. Performance standard is met.	Associated with CSS, open chaparral, and sandy flat areas. Found on mesas, ravines, and hillsides. Requires sandy soils, leaf litter, and harvester ant nests.
Coast Patch-nosed Snake* *Salvadora hexalepis virgultea*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 71% of CSS, 69% of chaparral, and 98% of floodplain scrub will be preserved ranchwide. Performance standard is met.	Found in coastal chaparral, scrub, washes, sandy flats and rocky areas.
Sandstone Night Lizard *Xantusia henshawi gracilis*	Preserve 80% of occupied habitat.	Not observed within project boundaries; appropriate conditions are not present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required. Performance standard is met.	Inhabits a variety of desert, chaparral, scrub, and woodland habitats. Requires granite or sandstone rock outcrops where it occurs in crevices.

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Cooper's Hawk *Accipiter cooperii*	Preserve 80% occupied habitat or use approved HCP/MSCP standards.	One individual was observed on SPA One foraging in large trees in Poggi Canyon. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 71% of CSS, 69% of chaparral, and 93% of woodlands will be preserved ranchwide. Performance standard is met.	Associated with oak woodland and riparian habitats. Also forage in CSS, chaparral and edge areas.
Sharp-shinned Hawk *Accipiter striatus*	No mitigation.	Not observed within project boundaries but potentially present as a foraging bird. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Winters in woodlands and open habitats which support some trees.
Tricolored Blackbird* *Agelaius tricolor*	Preserve 100% of nesting habitat or use approved HCP/MSCP standards. Conduct focused breeding surveys in appropriate habitat.	Vegetation map (Dudek, 1995a) indicates no breeding habitat is present within project boundaries for this species. A flock of 1000+ birds was observed foraging or perched in trees in Poggi Canyon. They were not breeding onsite. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No nesting habitat is present within project boundaries. Performance standard is met.	The species requires large areas of freshwater marsh vegetated with cattails or tules for suitable breeding sites. It forages opportunistically on agriculture fields, lawns, golfcourses, and along lakeshores.
Southern California Rufous-crowned Sparrow* *Aimophila ruficeps*	Preserve 80% occupied habitat or use approved HCP/MSCP standards.	Not observed within project boundaries but potentially present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	A total of 71% of CSS, 69% of chaparral, and 83% of steep slopes will be preserved ranchwide. Performance standard is met.	Occurs in CSS and lower elevation chaparral habitats. Prefer steep, often exposed slopes with rock outcrops and sparse shrub cover.
Bell's Sage Sparrow* *Amphispiza belli belli*	Preserve 80% of occupied habitat.	One individual was observed; more are likely present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	Although the location where the bird was observed will be impacted, it probably uses a much larger area. A total of 71% of CSS, 69% of chaparral, and 83% of steep slopes will be preserved ranchwide. Performance standard is met.	Occurs on coastal slopes in large tracts of undisturbed CSS and chaparral habitat.
Short-eared owl *Asio flammeus*	No mitigation.	Not observed within project boundaries but potentially present as a foraging bird. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Winter visitor to salt marshes, open grassland and agricultural habitats.

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Long-eared Owl *Asio otis*	Preserve 100% of occupied habitat.	Not observed within project boundaries; appropriate conditions are not present. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required. Performance standard is met.	Occurs primarily in riparian woodland, oak woodland, coniferous forest, and chaparral habitats.
Golden Eagle *Aquila chryseatos*	Preserve 100% of breeding habitat and associated key foraging habitat or use approved HCP/MSCP standards.	One individual was observed on SPA One foraging in Poggi Canyon. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No breeding sites are present within project boundaries and the key foraging habitat for Poggi Canyon, as identified in the Raptor Management Study (the area west of Paseo Ranchero) (Ogden, 1992) will be preserved. Performance standard is met.	Nests on cliffs and in large rock outcrops on rugged steep slopes. Also nests in large oaks or sycamores. Forages in grasslands, open CSS, and agriculture fields.
Ferruginous Hawk* *Buteo regalis*	No mitigation.	Not observed within project boundaries but potentially present as a foraging bird. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Winters in large blocks of open grasslands and agriculture fields.
Mountain Plover* *Charadrius montanus*	No mitigation.	Not observed within project boundaries but potentially present as a foraging bird. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Localized winter visiter to bare, plowed, agriculture fields.

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Cactus Wren* *Campylorhynchus brunneicapillus*	No loss of viable cactus wren populations; preserve adequate habitat within the preserve to maintain no loss of viable cactus wren populations.	Three survey reports (City of Chula Vista & County of San Diego, 1993; Dudek, 1995a [summarizes 2 years of data]) indicate the population varies from 6 to 13 pairs.	A viable population is one that has a good chance of persisting for a long time, typically defined as 200 years. The viability of the MSCP subpopulation was analyzed for the area which includes Otay Ranch. The Population Viability Analysis (PVA) (Ogden,1993) concluded the cactus wren population viability in the MSCP area to be marginal due to the small size of each subpopulation and fragmentation of suitable habitat. Small populations (<20) are subject to demographic and environmental vagaries which may cause an entire population to blink out in a single season. The current small population within Poggi Canyon is not viable as defined in the PVA (95% chance of persistence for 200 years). Nevertheless, 6 pair are located in habitat west of Paseo Ranchero. With the preservation of habitat west of Paseo Ranchero, the population may be able to persist for some time. A total of 9.8 acres of MSS will be restored by the habitat replacement program, resulting in no net loss of habitat. In addition, 80% of MSS is preserved ranchwide. Performance standard is met.	The cactus wren is dependent on tall patches of cactus for nesting and roosting sites. Maritime succulent scrub is dominated by cactus and is typically occupied by cactus wrens.

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Northern Harrier *Circus cyaneus*	~~Include within the open space preserve, occupied breeding and foraging habitat and sufficient potential habitat to maintain and enhance a viable metapopulation.~~ ~~Preserve 100% of breeding population and 80% of non-breeding population or use approved HCP/MSCP standards.~~	Two individuals were observed foraging, one in CSS west of Paseo Ranchero and one east of Paseo Ranchero. The individuals were not breeding. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	Due to the wide-ranging habits, the species is considered on a ranch-wide basis. The Otay Ranch preserve includes 69% of the habitats used and exceeds that of the MSCP. The ranch-wide preserve will include the breeding population to maintain a viable metapopulation. Performance standard is met.	Associated with grasslands, marshes, agricultural fields, and CSS.
Southwestern Willow Flycatcher *Empidonax traillii extimus*	Preserve 100% of occupied habitat and individuals, or use approved HCP/MSCP standards.	Vegetation map (Dudek, 1995a) indicates no habitat is present for this species.	No action required. Performance standard is met.	Requires extensive stands of willow riparian habitat.
California Horned Lark* *Eremophila alpestris actia*	~~Include within the open space preserve, occupied breeding and foraging habitat and sufficient potential habitat to maintain and enhance a viable metapopulation.~~ ~~Preserve 80% of occupied habitat.~~	Not observed within project boundaries but potentially present as a foraging bird. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	Due to their nomadic behavior, the species is considered on a ranch-wide basis. The Otay Ranch preserve includes 56% of the habitat used and exceeds that of the MSCP. The ranch-wide preserve will include the breeding population to maintain a viable metapopulation. Performance standard is met.	Occurs on ocean shores, bare ground, disturbed areas with low herbaceous plants, grasslands, and open agricultural habitats.
Merlin *Falco columbarius*	No mitigation.	Not observed within project boundaries but potentially present as a foraging bird. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Winters in grassland and agriculture habitats.
Prairie Falcon *Falco mexicanus*	No mitigation.	One individual observed foraging east of Paseo Ranchero (Dudek, 1995a). Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Winters in grassland, agriculture, and open CSS habitats.

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Loggerhead Shrike* *Lanius ludovicianus*	Include within the open space preserve, occupied breeding and foraging habitat and sufficient potential habitat to maintain and enhance a viable metapopulation. ~~Preserve 80% of occupied habitat.~~	One individual was observed foraging east of Paseo Ranchero (Dudek, 1995a). Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	Due to the large territory size, the species is considered on a ranch-wide basis. The Otay Ranch preserve includes 69% of the habitat used and exceeds that of the MSCP. The ranch-wide preserve will include the breeding population to maintain a viable metapopulation. Performance standard is met.	Associated with grassland, agricultural, and other open habitats with scattered bushes or low trees for nesting and perching.
Yellow Warbler *Dendroica petechia*	Preserve 80% of occupied habitat.	Vegetation map (Dudek, 1995a) indicates no habitat is present for this species.	No action required. Performance standard is met.	Restricted to breeding in riparian woodland.
Yellow-breasted Chat *Icteria virens*	Preserve 80% of occupied habitat.	Vegetation map (Dudek, 1995a) indicates no habitat is present for this species.	No action required. Performance standard is met.	Restricted to breeding in riparian woodland, migrates through other woodlands.
Long-billed Curlew* *Numenius americanus*	No mitigation.	Vegetation map (Dudek, 1995a) indicates no habitat is present for this species.	No action required.	Occurs in tidal mudflats, salt marshes, and croplands.
Osprey *Pandion haliaetus*	No mitigation.	Vegetation map (Dudek, 1995a) indicates no habitat is present for this species.	No action required.	Occurs along the coast and at inland lakes. A few individuals have been observed in winter at Otay Lakes.
California Gnatcatcher *Polioptila californica*	Preserve 70% of occupied California gnatcatcher habitat, restore an additional 15% of gnatcatcher habitat and preserve 52% of documented pairs and individuals. Noise levels within gnatcatcher habitat shall, to the extent feasible, achieve 65 dBA. ~~Impacts to least Bell's vireo and California gnatcatcher habitat shall be mitigated to achieve a level of 60 dBA L_{eq} or below.~~	Three survey reports (City of Chula Vista & County of San Diego, 1993; Dudek, 1995a [summarizes 2 years of data]) indicate the population varies from 5 to 7 pairs.	One pair of gnatcatchers located on SPA One will be directly impacted. Two pair west of Paseo Ranchero will be indirectly impacted but will not be considered "taken". A total of 71% of CSS is preserved ranchwide. Based on the number of gnatcatcher locations included within the ranchwide preserve and those not impacted by noise greater than 65 dBA, The project preserves 80% of the documented pairs and individuals. Performance standard is met.	Associated with CSS and MSS habitats.

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Burrowing Owl *Speotyto cunnicularia*	~~Include within the open space preserve, occupied breeding and foraging habitat and sufficient potential habitat to maintain and enhance a viable metapopulation.~~ ~~Preserve 100% of occupied habitat or use approved HCP/MSCP standards.~~	Three individuals were observed west of Paseo Ranchero (Dudek, 1995a). Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	Due to the large territory size, the species is considered on a ranch-wide basis. The Otay Ranch preserve includes 56% of the habitat used and exceeds that of the MSCP. The ranch-wide preserve will include breeding and foraging habitat to maintain a viable metapopulation. Performance standard is met.	Occurs in open grassland, agriculture fields, coastal dunes, and extremely open CSS.
Least Bell's Vireo *Vireo bellii pusillus*	Preserve 100% of individuals or occupied habitat, or use approved HCP/MSCP standards.	Vegetation map (Dudek, 1995a) indicates no habitat is present for this species.	No action required. Performance standard is met.	Requires extensive stands of willow riparian habitat.
Pallid Bat *Antrozous pallidus pacificus*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Occurs in a wide variety of habitats including grasslands, shrublands, woodlands, and mixed conifer forests. Roosts in crevices, caves, mines, buildings, and under bridges.
Dulzura California Pocket Mouse* *Chaetodipus californicus femoralis*	Preserve 80% occupied habitat.	Not observed within project boundaries but probably present based on the vegetation map (Dudek, 1995a).	A total of 71% of the CSS, 69% of chaparral, and 93% of woodlands will be preserved ranchwide. The non-native grassland is periodically disced so it is not suitable habitat. Performance standard is met.	Occurs in a variety of habitats including chaparral, CSS, annual grassland, and woodlands.
Northwestern San Diego Pocket Mouse* *Chaetodipus fallax*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present based on the vegetation map (Dudek, 1995a).	A total of 71% of the CSS, 69% of chaparral, and 93% of woodlands will be preserved ranchwide. The non-native grassland is periodically disced so it is not suitable habitat. Performance standard is met.	Occurs in open, arid habitats often associated with yucca. Found in CSS, chaparral, annual grasslands and arid habitats.
California Mastiff Bat* *Eumops perotis californicus*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Associated with open arid areas with rocky cliffs, chaparral and oak woodlands. Roosts in rock crevices and occasionally in buildings.

Species Under Consideration	Performance Standards Incorporated in GDP Program EIR	Previous Project-wide Distribution Data	Project Relationship to GDP Performance Standards	Comments
Southern Grasshopper Mouse* *Onychomys torridus ramona*	Preserve 80% of occupied habitat.	Not observed within project boundaries but potentially present based on the vegetation map (Dudek, 1995a).	A total of 71% of the CSS, 69% of chaparral, 98% of floodplain scrub, and 93% of riparian woodland will be preserved ranchwide. Performance standard is met.	Associated primarily with desert habitats and also CSS, mixed chaparral, wash, and riparian habitats.
San Diego Black-tailed Jackrabbit* *Lepus californicus bennettii*	Preserve 80% of occupied habitat.	Two individuals were observed west of Paseo Ranchero, one individual was observed east of Paseo Ranchero (Dudek, 1995a). Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	Two of the jackrabbit locations will be preserved. Because this species ranges widely, the third individual may also be preserved. A total of 71% of CSS and 69% of chaparral will be preserved ranchwide. The non-native grassland is periodically disced so it is not suitable habitat. Performance standard is met.	Occurs in herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats.
California Leaf-nosed Bat* *Macrotus californicus*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Primarily occurs in desert habitats. Roosts in rugged terrain in mines and caves.
San Diego Desert Woodrat* *Neotoma lepida intermedia*	Preserve 80% of occupied habitat.	Not observed within project boundaries but probably present based on the vegetation map (Dudek, 1995a).	A total of 71% of the CSS, 80% of the MSS, and 69% of chaparral will be preserved ranchwide. Performance standard is met.	Occurs primarily in CSS, MSS, and chaparral habitats, especially mesas with rock outcrops.
Pacific Little Pocket Mouse *Perognathus longimembris pacificus*	Preserve 100% of individuals or occupied habitat or use approved HCP/MSCP standards.	Not observed within project boundaries and potential for occurrence is very low based on the vegetation map (Dudek, 1995a) and the distance from the coast.	No action required. Performance standard is met.	Inhabits the narrow coastal strip (2-3 miles inland), typically found in fine, alluvial, sandy soils.
Townsend's Big-eared Bat* *Plecotus townsendii*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Occurs in a variety of habitats including desert, woodlands, grasslands, and scrub. Roosts in caves, lava tubes, mines, and other man-made structures.
American Badger *Taxidea taxus*	Impacts are considered insignificant. Territories are large so a low density would be expected. No performance standard set.	Two badger digs were observed, one west of Paseo Ranchero and one on SPA One. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Occurs primarily in open, level habitats such as grassland, agricultural areas and open coastal sage scrub. Requires friable soils for burrowing.

Species Under Consideration	Performance Standards Incorporated in GDP Program EIR	Previous Project-wide Distribution Data	Project Relationship to GDP Performance Standards	Comments
Least Bittern *Ixobrychus exilis*	No mitigation.	Not observed within project boundaries. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Restricted to large brackish and freshwater marshes in coastal lowland.
Bald Eagle *Haliaetus leucocephalus*	No mitigation.	Not observed within project boundaries. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required	Winter at inland lakes.
Peregrine Falcon *Falco peregrinus*	No mitigation.	Not observed within project boundaries. Two survey visits were made (City of Chula Vista and County of San Diego, 1993; Dudek, 1995a).	No action required.	Occurs only rarely at inland lakes during the winter. Primarily found along the coast.
Mexican Long-tongued Bat* *Choeronycteris mexicana*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Occurs in desert habitats, primarily deep, rugged, and moist canyons. Roosts in caves buildings, and mines.
Spotted Bat* *Euderma maculatum*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Often occurs in arid desert or open pine forests in rocky terrain. Roosts in caves and crevices in cliffs.
Pocketed Free-tailed Bat *Nyctinomops femorosacca*	No mitigation.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required.	Rare in desert habitats. Roosts in rock crevices in cliffs.
Big Free-tailed Bat *Nyctinomops macrotis*	Preserve 100% of roosting habitat.	Vegetation map (Dudek, 1995a) indicates no roosting habitat is present for this species.	No action required. Performance standard is met.	Widely scattered distribution. Inhabits rugged, wooded mountainous areas. Roosts in crevices high in cliffs or in rock outcrops.

*Category 2 candidate species for U.S. Fish and Wildlife Service. This category was eliminated as of September 1, 1995 thus these species will no longer be assessed by the USFWS as candidates for listing.

Otay Ranch SPA One Relationship of the Project to the GDP EIR Findings' Biological Performance Standards for Habitats

Habitat Under Consideration	Performance Standards Incorporated in GDP Program EIR	Presence on SPA One	Project Relationship to the Performance Standards
Diegan Coastal Sage Scrub	Preserve 70% of CSS.	21.0 acres of CSS and 2.3 acres of disturbed CSS are present on SPA One (Dudek, 1995a).	Achievement of the GDP Program EIR performance standard for CSS is realized through the preservation of CSS within the Otay Ranch preserve, the preservation of CSS within the designated LDA's in Villages 16 and 17 and the restoration of 1,300 acres of CSS ranchwide. No portions of SPA One include areas designated for the Otay Ranch preserve. Portions of the project currently planned west of Paseo Ranchero (East Orange Avenue, East Palomar Street, and the Light Rail Transit) would not conflict with the preserve boundaries established with the GDP. According to the Phase 2 RMP, 1,039 acres would be conveyed with the development of SPA One and 14.3 acres of CSS restoration would occur. The project would not conflict with the GDP and the designated preserve and the performance standard is met.
Maritime Succulent Scrub	Preserve 80% of MSS.	7.3 acres of MSS and 6.9 acres of disturbed MSS are present on SPA One (Dudek, 1995a).	Achievement of the GDP Program EIR performance standard for MSS is realized through the preservation of MSS within the Otay Ranch preserve and the restoration of 57 acres of MSS ranchwide. No portions of SPA One include areas designated for the Otay Ranch preserve. Portions of the project currently planned west of Paseo Ranchero (East Orange Avenue, East Palomar Street, and the Light Rail Transit) would not conflict with the preserve boundaries established with the GDP. According to the Phase 2 RMP, 1,039 acres would be conveyed with the development of SPA One and 9.8 acres of MSS restoration would occur. The project would not conflict with the GDP and the designated preserve and the performance standard is met.
Floodplain Scrub, Southern Willow Scrub, and Aquatic/Freshwater Marsh	Preserve 95% of floodplain scrub, southern willow scrub, and aquatic/freshwater marsh habitats.	15.2 acres of freshwater marsh and 0.3 acre of open water are present on SPA One (Dudek, 1995a).	SPA One preserves 95% of wetland habitats.
Non-native Grassland	No performance standard was set.	185.5 acres of non-native grassland are present on SPA One (Dudek, 1995a). Most of the vegetation mapped as non-native grassland is periodically disced and thus is more similar to agriculture habitat.	No action required.
Valley Needlegrass Grassland/Perennial Grassland	Preserve 25% of the valley needlegrass grassland.	No valley needlegrass grassland is present on SPA One.	No valley needlegrass grassland is present within the project boundaries.

Habitat Under Consideration	Performance Standards Incorporated in GDP Program EIR	Presence on SPA One	Project Relationship to the Performance Standards
Vernal Pools	Preserve 95% of large or high value vernal pool complexes and preserve 95% of all other vernal pools.	SPA One contains no vernal pools. The area west of Paseo Ranchero contains 477 square feet of low quality, disturbed vernal pools, the M5+ pools, which do not contain sensitive species (Dudek, 1995a).	No impacts to the M5+ vernal pools would occur.
Woodlands	Preserve 100% of the southern interior cypress forest, coast live oak woodland, southern live oak riparian forest, and sycamore alluvial woodland.	No southern interior cypress forest, coast live oak woodland, and southern live oak riparian forest and sycamore alluvial woodland is present on SPA One.	No woodland habitats are present within the project boundaries.

C. Wetland Delineation (Appendix F9). SPA One 1994/1995 Biological Data Base, B

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: Conduct a wetland delineation for each SPA development using the methodology appropriate for the permit or approval being sought. (Page GDP/SRP Page 366; RMP Policy 2.10)
>
> Policy: Complete wetland delineations using the Federal Unified Method, or approved modification thereof, for each Specific Plan or SPA containing wetlands. (Page GDP/SRP, Page 366; RMP Policy 2.10)

The SPA One applicant responded to these policy requirements by preparing Attachment B to the SPA One Biological Data Base 1994/1995, (Dudek, 1995), SPA One 1995 Wetland Delineation Report. The report concludes that jurisdictional wetlands are restricted to two locations: the northern edge of the property along Telegraph Canyon Road and the bottom of Poggi Canyon. Additional waters of the US, in the form of unvegetated, incised drainages are present throughout the SPA One area, but mostly within the Poggi Canyon area. Wetland habitat along Telegraph Canyon Road is primarily disturbed fresh water marsh, some of which appears to be the result of the revegetation effort associated with the recent road improvements. The entire channel is punctuated by a large (20-50' wide) section of roof raft at irregular intervals. Wetland in Poggi Canyon is represented by a small patch of freshwater marsh and a small pond. The pond is situated behind an earthen berm. Due to the paucity of hydrophytic vegetation around the pond, it is suspected that this aquatic feature may be

ephemeral in nature. Two trees are present in the middle of the pond; both appear to be dead.

A total of approximately 13.35 acres of jurisdictional wetland and waters of the US are present on site: 12.5 acres of freshwater marsh along Telegraph Canyon Road and 0.14 acres of freshwater marsh and 0.30 acres of open water/pond in Poggi Canyon; 0.41 acres of water of the US in unvegetated and sized channels in Poggi Canyon. A section 404 permit from the Army Corps of Engineers and a section 1603 streambed alteration agreement from the California Department of Fish and Game would be required before impacts to wetlands could occur.

Mitigation for impacts to take several forms, including (1) avoidance of impacts; (2) minimization of impacts; (3) compensation for impacts. The first two types of mitigation are strongly preferred by regulatory agencies. Compensation would be in the form of onsite wetland creation or offsite mitigation at a site approved by the resource agencies. Either mitigation option would consist of creation of wetland habitat at a minimum ratio of 1:1 by area for impacted habitat. Based on previous experience with the resource agencies, it is likely that mitigation for freshwater marsh, open water pond and in-size channels would require replacement at a ratio of 1:1 by area.

D. Riparian Restoration Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: A conceptual restoration plan for riparian habitats shall be included in the Phase 1 RMP. Restoration programs shall be implemented on a SPA by SPA basis in accordance with Phase 2 RMP. The success of a specific riparian restoration effort will be measured by the ability of the restored habitat to support native wildlife species. An increase in bird species richness will be used as an indicator of "habitat suitability." (GDP/SRP Page 370; RMP Policy 2.10, 3.5)

There is no need for the SPA One applicant to prepare a riparian restoration plan in connection with SPA One since the SPA One planning area does not contain any riparian resources.

E. Native Grassland Restoration Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: Restoration plan for native grassland habitats shall be included in the Phase 1 RMP. Restoration programs shall be implemented on a SPA by SPA basis in accordance with Phase 2 RMP. (GDP/SRP Page 370; RMP Policy 3.6)

There is no need for the SPA One applicant to prepare a native grassland restoration plan in connection with SPA One since the SPA One planning area does not contain any native grasslands.

F. Preserve Edge Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy. "Edge Plans" shall be developed for all SPAs that contain areas adjacent to the Preserve. The "edge" of the Preserve is a strip of land 100 feet wide that surrounds the perimeter of the Preserve. It is not part of the Preserve - it is a privately or publicly owned area included in lots within the urban portion of Otay Ranch immediate adjacent to the Preserve. (GDP/SRP Page 383; Policy 7.2).
>
> Implementation Measure: The edge plan shall be prepared in consultation with a qualified biologist to ensure that proposed land uses will not adversely affect resources within the Preserve. The edge plan shall include a list of plant species that may and may not be used for landscaping within the edge. Fuel modification zones may be incorporated into the edge. Development adjacent to the edge shall be restricted to development types that are least likely to impact specific adjacent biological resources. Landscaping or bloc walls shall be used in appropriate areas adjacent to the edge to reduce impacts of noise and light. No structures other than fencing and walls shall be allowed and are to be built and landscaped in such a way as to minimize visual impacts on the Preserve and the Otay Valley Regional Park (GDP/SRP Page 384).
>
> Policy: Protect and maintain biological integrity of unconveyed land adjacent to developing SPAs, consistent with the following standards: (GDP/SRP Page 384)

- Provide temporary fencing around perimeter of sensitive habitat areas and/or areas occupied by sensitive species adjacent to any SPA under construction to inhibit encroachment by construction traffic, etc.
- Phase construction of SPAs immediately adjacent to sensitive biological resources to avoid indirect impacts. For example, construction activities that equal or exceed volume levels that inhibit breeding and nesting activities of the California gnatcatcher should be curtailed during the nesting period of the bird.

1. Background

The Otay Ranch GDP and RMP require preparation of an Edge Plan for areas adjacent to the management Preserve. Further entitlements are not sought within Village One areas adjacent to the Preserve. However, improvements are proposed within Village One (Otay Ranch SPA One) along East Palomar Street and East Orange Avenue west of Paseo Ranchero. Accordingly, the Edge Plan accompanies the SPA One plan and governs these areas west of Paseo Ranchero.

The focus of the edge plan is on the portions adjacent to East Orange Avenue, the western side of Paseo Ranchero, and the southern portion of East Palomar Street.

The edge of the Preserve within SPA One is shown on Exhibit 40. The edge includes the slopes that will be graded in order to build the roadway system, including East Orange Avenue, Paseo Ranchero, and East Palomar Street. In addition, a small part of edge that will not be graded is located near the intersection of

East Palomar Street and Paseo Ranchero. A total of 21.8 acres of edge area are located within SPA One. This is comprised of 14.6 acres of edge area along East Orange Avenue and 7.2 acres of edge area along Paseo Ranchero, north of East Orange Avenue. This area includes primarily graded slopes as shown in Exhibit 37. In some cases, the graded slope is less than 100 feet wide (e.g., the north side of East Orange Avenue). In these cases the edge, as defined above, extends into the roadway itself. A roadway may be regarded as an appropriate edge for the Preserve since it provides a definite boundary for the Preserve edge and provides a barrier to access for humans and domestic pets. Typical cross-sections for East Orange Avenue and Paseo Ranchero are shown in Exhibit 41. It should be noted that the edge occurs on both sides of East Orange Avenue for approximately 4,000 feet and includes a detention basin, proposed to be located south of East Orange Avenue. The edge occurs only on the west side of Paseo Ranchero and the south side of a small segment of East Palomar Street for a length of 1,986 feet. Potential uses within the graded slope areas within the edge area include sidewalks and regional trails. A drainage channel may also be located within the edge area along East Orange Avenue.

2. Treatment

Treatments for the Otay Ranch SPA One edge plan reflect uses proposed within the edge as part of the SPA One development plan. These uses include the following: 1) graded slopes adjacent to roadways (East Orange Avenue, Paseo Ranchero Road, East Palomar Street); 2) roadway (East Orange Avenue); 3) detention basin; and 4) drainage channels. Treatments for each of these three uses are presented below.

1) **Graded Slopes:** Graded slopes to be created within the Preserve edge as part of SPA One

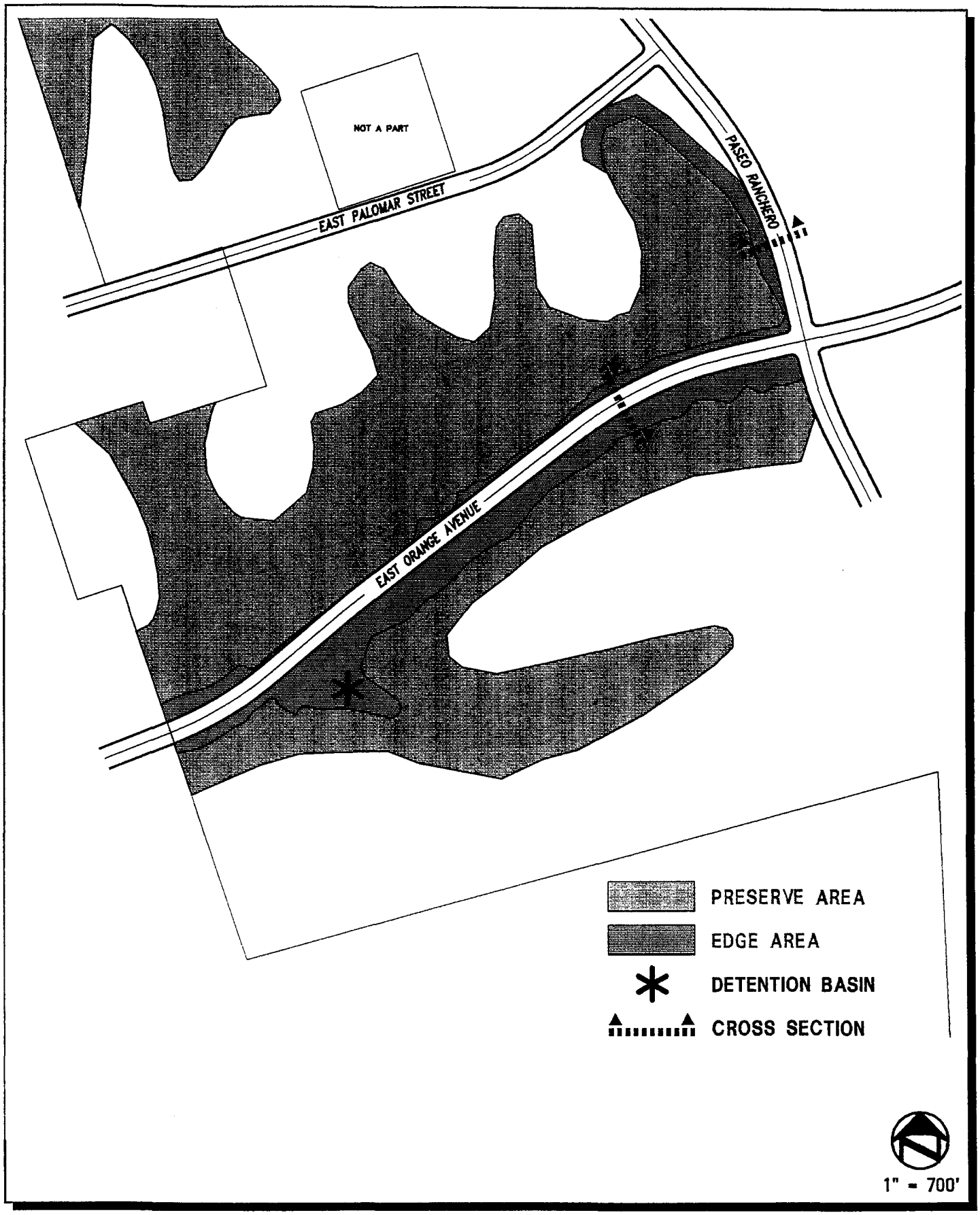
shall be revegetated with native coastal sage scrub/maritime succulent scrub species. Exhibit 38 presents a plant palette to be used for slope revegetation. Both seed and container stock will be used. A fence will be located at the edge of the graded slope where it meets the Preserve in order to protect the vegetation within the Preserve and limit human intrusion (Exhibit 37). Prior to issuance of a grading permit for roadways included within the Preserve edge, landscape plans shall be submitted for review and approval by the City of Chula Vista demonstrating planting of the graded slopes adjacent to the Preserve using the plant palette presented in Exhibit 38. Sidewalks and agricultural uses are permitted within the edge area. Access to the Preserve from these pedestrian pathways will be restricted by the fencing to be located at the edge of the graded slope.

2) **Roadway:** As previously noted, a roadway is an appropriate edge for the Preserve. Roadways, although associated with some traffic noise, are a development type that would not adversely affect Preserve resources and would provide a barrier limiting access to the Preserve. Fencing along graded roadway slopes will further restrict access.

3) **Detention Basin:** A detention basin is proposed to be located south of East Orange Avenue within the Preserve edge. A detention basin is an appropriate use within the Preserve edge and, when holding water, may be a resource for wildlife in the area. To benefit the Preserve, the detention basin should be earth-lined with a vegetative edge, with minimal long-term maintenance requirements following accommodation of sediment loads generated by construction

activities during the early phases of the project.

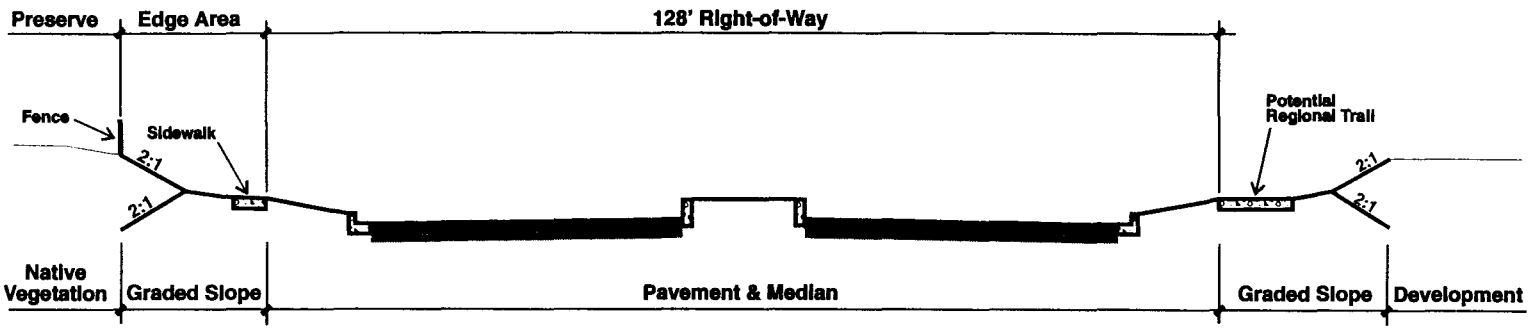
4) **Drainage Channel**: A drainage channel may be located within the edge area south of East Orange Avenue. The drainage channel will be earth lined and planted with native species.



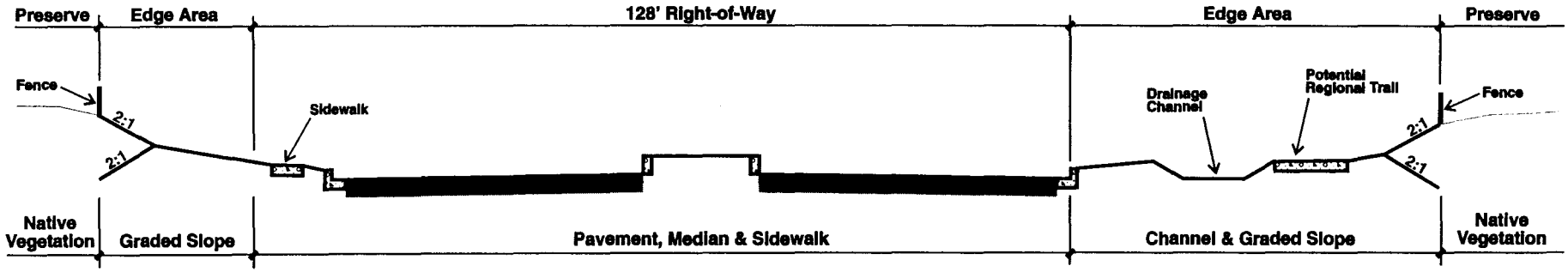
Otay Ranch Phase 2 Resource Management Plan

SPA One Edge Areas (Poggi Canyon)

EXHIBIT 42



Paseo Ranchero, Looking North



East Orange Avenue, Looking East

Otay Ranch Phase 2 Resource Management Plan

SPA One Typical Road Cross Sections Showing Edge Areas

EXHIBIT
43

Exhibit 44
Plant Palette For Coastal Sage Scrub/Maritime Succulent Scrub Habitat Revegetation Within Edge of SPA One

Scientific Name	Common Name
Achillea millefolium	Yarrow
Achnatherum diegoensis	San Diego County needlegrass
Allium praecox	Early onion
Allium haematochiton	Red-skin onion
Ambrosia chenopodiifolia	San Diego bur-sage
Artemisia californica	California sagebrush
Baccharis sarothroides	Broom baccharis
Bloomeria crocea	Common golden-star
Calochortus splendens	Mariposa lily
Chlorogalum parviflorum	Amole
Cleome isomeris	Bladderpod
Cordylanthus orcuttianus	Orcutt's bird's-beak
Corethrogyne filaginifolia	Cudweed aster
Dichelostemma pulchella	Wild hyacinth
Dichondra occidentalis	Western dichondra
Dudleya edulis	Ladies fingers
Dudleya pulverulenta	Chalk lettuce
Encelia californica	California encelia
Eriogonum fasciculatum	California buckwheat
Eriophyllum confertiflorum	Golden yarrow
Euphorbia misera	Cliff spurge
Ferocactus viridescens	San Diego barrel cactus
Hemizonia conjugens	Otay tarweed
Hemizonia fasciculata	Fascicled tarweed
Heteromeles arbutifolia	Toyon
Isocoma veneta	Coast goldenbush
Isomeris arborea	Bladderpod
Lonicera subspicata	Wild honeysuckle
Lotus scoparius	Deerweed
Lupinus succulentus	Arroyo lupine
Malosma laurina	Laurel sumac
Mammillaria dioica	Fish-hook cactus
Mimulus aurantiacus	Bush monkeyflower
Nasella pulchra	Purple needlegrass
Opuntia littoralis	Mesa prickly pear
Opuntia parryi var. serpentina	Snake cholla

Scientific Name	Common Name
Opuntia prolifera	Coast cholla
Rhus integrifolia	Lemonadeberry
Rhamnus crocea	Redberry
Salvia apiana	White sage
Salvia mellifera	Black sage
Salvia munzii	Munz's sage
Sambucus mexicana	Mexican Elderberry
Selaginella cinerascens	Mesa club moss
Sisyrinchium bellum	Blue-eyed grass
Simondsia chinensis	Jojoba
Yucca whipplei	Mohave yucca
Viguiera laciniata	San Diego County viguiera

G. Cultural Resources Site Testing (Appendix F10.) Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Otay Ranch Sectional Planning Area One and Annexation Project

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

Policy: The testing program shall be conducted in accordance with the County of San Diego guidelines on a SPA-by-SPA basis. (GDP/SRP Page 360; RMP Policy 9.5)

In response to this requirement, the SPA One applicant prepared the SPA One Cultural Resource Site Testing Report (Brian Smith, 1995). This report is incorporated into the SPA One EIR and is also Appendix F10 to this document. The conclusions of this report are summarized below.

The report identifies 21 archeological sites (both prehistoric and historic) within SPA One. The report rated the 21 sites based upon a four point rating system (1 maximum significance, 2 high significance, 3 moderately significant, 4 not significant). The report concludes that 19 of the 21 sites are not significant. For theses sites, impacts were found to be not significant and no mitigation measures are required.

Two of the sites were rated moderately significant. This means these sites contain artifacts, features and information which would contribute to the understanding of pre-history or history of the region. Mitigation of the impact is possible for these sites through application of County approved construction and design practices such as open space easements or capping; or through the implementation of mitigation measures such as data recovery programs. Specific mitigation measures for these sites are recommended in the SPA One EIR.

H. Community Garden Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

The topic of community gardens is addressed in the Otay Ranch SPA One Parks, Recreation, Open Space and Trails Master Plan (see Appendix D).

I. Trail Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: Provide a system of trails through the Preserve that is compatible with resource protection. This is considered to be a passive use and not a part of the 400-acre active recreational area (GDP/SRP Page 381, RMP Policy 6.3).
>
> Implementation Measure: A qualified firm shall be hired to design, implement and construct a trail system through the Preserve, following review and comment by the Preserve Owner/Manager and resource agencies (GDP/SRP Page 381; RMP Policy 6.3).

While this is not an express requirement that must be prepared prior to or concurrent with the adoption of the initial Otay Ranch SPA, the SPA One applicant has addressed this issue through the preparation of Trail Plans incorporated into the Otay Ranch Overall Design Plan (Appendix A) and the Otay Ranch SPA One Parks, Recreation, Open Space and Trails Plan (Appendix D).

V. TASKS PERFORMED BY LATER SPAS

The following are tasks identified in the Phase 1 RMP for which it is unnecessary and impractical to perform as a condition of the SPA One application, because these tasks cannot be performed until Otay Valley Regional Park planning is completed. Upon the completion of regional park plans, these tasks will be pursued.

A. Otay Valley Riparian Habitat Restoration Plan

The Otay Ranch General Plan/Subregional Plan and Phase 1 Resource Management Plan contain the following policy language:

> Policy: If feasible, opportunities and plans for mitigation banks shall be developed in conjunction with preparation of wetlands enhancement plans for Otay Valley and the vernal pool preservation plan in conjunction with the Phase 2 RMP and the first SPA. All revenue generated by wetlands mitigation banks shall be used to fund Preserve activities. (GDP/SRP, Page 366; RMP Policy 2.10)
>
> There is no need for the SPA One applicant to prepare a Demonstration Agricultural Plan at this time. This plan will be prepared concurrent with the conveyance for this area or prior to adoption of the last SPA on the Otay Valley Parcel.

The Otay Valley portion of this task will be pursued upon the completion of the JEPA park planning effort. The vernal pool portion of this task is addressed in the Vernal Pool Study (Appendix F2) and the Vernal Pool Management Plan (Appendix F6).

B. Demonstration Agricultural Plan

The Otay Ranch General Plan/Subregional Plan and Phase One Resource Management Plan contain the following policy language:

> Policy: Provide opportunities for demonstration agricultural activities within the Preserve. A site which supports prime or statewide important soils, should be located near proposed composting facilities and Bird Ranch. A plan for the size and operation of the demonstration agricultural activities will be subject to review and approval of the Preserve Owner/Manager and/or the Otay Valley Regional Park management and shall be submitted concurrent with the conveyance for this area or prior to adoption of the last SPA on the Otay Valley Parcel, whichever occurs first. (GDP/SRP Page 367; RMP Policy 2.14)

There is no need for the SPA One applicant to prepare a Demonstration Agricultural Plan at this time. This plan will be prepared concurrent with the conveyance of this area to the POM or prior to adoption of the last SPA on the Otay Valley Parcel.

C. Otay Valley Regional Park Active Use Plan

The Otay Ranch General Plan/Subregional Plan and Phase One Resource Management Plan contain the following policy language:

> Policy. Active recreational use acreage within the Preserve shall not be greater than 400 acres and shall be consistent with the resource protection and enhancement goal, objectives and policies of the RMP, and reflect with the following criteria. (GDP/SRP Page 380; RMP Policy 6.2)
>
> - Active recreation areas should be located in previously disturbed, non-sensitive areas.
> - Active recreational uses should be readily accessible from existing and planned public roads and should not intrude into core areas within the Preserve.
> - Active recreation uses should be clustered to minimize the extent of the edge between active recreation uses and sensitive resources within the Preserve.
> - Limited commercial uses/activities related to active recreation may be allowed within the 400 acres designated for active recreation.
> - Public parks and recreation facilities may be operated commercially by private operators within active recreation areas.
> - Emphasis shall be placed on providing the majority of the active recreation in the Otay Valley, to the extent that this is consistent with an Otay Valley Regional Park Plan, as may be adopted.

There is no need for the SPA One applicant to prepare an Otay Valley Regional Park Active Use Plan at this time. This plan will be prepared in conjunction with the Otay Valley Regional Park Planning effort.