
APPENDIX P 'B' Alternatives Analysis

Note to Reader: The comparative alternatives analyses in this Appendix combine Habitat Reserve and Supplemental Open Space (SOS) acres because both are designated open space. The Habitat Reserve and SOS are identical for all areas outside of Rancho Mission Viejo (RMV) property. The more refined conservation analysis presented in *Part I, Chapter 13* for the RMV, County of Orange and San Margarita Water District (SMWD) proposed Covered Activities separates the Habitat Reserve and SOS components because Habitat Reserve open space will be managed under the Habitat Reserve Management Program (HRMP) described in *Part I, Chapter 7*. SOS will not be subject to management under the HRMP.

All figures referenced in this Appendix are located in the NCCP/MSAA/HCP *Part IV, Map Book*.

SECTION 1.0 ALTERNATIVE B-8

SECTION 1.1 OVERVIEW OF THE B-8 ALTERNATIVE (*FIGURE 129-M*)

1.1.1 Overview of Major Landscape and Habitat Reserve Planning Features of the Proposed Habitat Reserve on RMV Property

a. Major Landscape Features

In comparison with the B-10M and B-12 Alternatives, the B-8 Alternative proposes to maximize the open space on RMV lands with the result that County housing needs are addressed to a far lesser extent than in any of the other Alternatives. Alternative B-8 identifies Chiquita Canyon, Verdugo Canyon and all of the RMV portion of the San Mateo Creek Watershed as open space. All of the habitat linkages and wildlife movement corridors identified in the Draft Southern Planning Guidelines and Draft Watershed Planning Principles would be protected (*Figure 156-M*). Except for impacts to California gnatcatchers, many-stemmed dudleya and cactus wrens within the proposed Gobernadora development area, only limited impacts would occur to NCCP/MSAA/HCP planning species. The B-8 Alternative would provide two development locations in areas already substantially altered by past and present resource utilization activities (Gobernadora and Trampas Canyon) and a third smaller development area (Ortega Gateway) adjacent to existing development.

By substantially reducing the size and number of the development areas (relative to the other 'B' Alternatives), the B-8 correspondingly reduces the regulatory "nexus" basis for Habitat Reserve dedications and thereby significantly increases the open space that would have to be acquired

with public funds. Further, the B-8 Alternative would not address County housing goals in a manner comparable to the other 'B' Alternatives (the B-8 Alternative would likely allow for 8,400 units of housing compared with approximately 14,000 units of housing under the other 'B' Alternatives and, given the limited land area available for housing development, would likely not provide for as great a range of housing opportunities as the other 'B' Alternatives). Given the B-8 Alternative's emphasis on maximizing open space with only limited contributions to County housing needs and related objectives, Alternative B-8 is less an attempt to balance resource conservation and housing needs and is, instead, primarily a public open space/habitat acquisition alternative.

b. Significant Reserve Design and Land Use Elements of Alternative B-8

Significant reserve design and land use elements of the B-8 Alternative include the following:

- Provide for designation of approximately 19,130 acres (84 percent) of RMV property as permanent open space.
- The 19,130 acres of RMV lands proposed for open space would result in approximately 49,000 acres (53 percent) of protected open space within the subregion including regional parks, non-profit lands and conservation easement open space already set aside, but not including 40,000 acres in the CNF.
- Locate potential development on about 3,680 acres (16 percent) of RMV lands.
- A large block of habitat totaling about 12,950 acres of unfragmented habitat would be retained in the southeastern portion of RMV (*Figure 156-M*).
- Maintain the potential for plant translocation and habitat enhancement and restoration.
- Provide for acquisition and management of open space through dedications, and public and non-profit organization funding of acquisitions and management - a voluntary sale by RMV for purpose of open space acquisition likely would be required for substantial areas; however, the amount of dedication areas versus acquisition areas has not been defined.

c. Habitat Reserve Design Features

With regard to the San Juan Creek Watershed, Chiquita Canyon is proposed to be protected in its entirety in order to maximize the protection of occupied gnatcatcher habitat comprising a significant portion of a *major population/key location* and other resources within the Canyon as

well as on Chiquadora Ridge. Verdugo Canyon is also proposed to be protected in its entirety in order to maintain sources of coarse sediment for San Juan Creek and to maximize the Canyon's habitat linkage function connecting San Juan Creek to the CNF and to portions of Gabino Canyon. The Ortega Gateway and Trampas Canyon development areas are the only development locations proposed in areas to the south of San Juan Creek. Alternative B-8 emphasizes preserving all of the planning area lands located within the San Mateo Creek Watershed.

With regard to large blocks of open space, a major block of habitat, totaling 9,390 acres would extend from upper Chiquita Canyon to the Radio Tower Road area south of San Juan Creek and includes all of Chiquita Canyon Ridge and Chiquadora Ridge (*Figure 156-M*). A second major block of open space lands on RMV property, totaling 12,500 acres, would extend from Verdugo Canyon (and all areas south of San Juan Creek within the San Juan Creek Watershed other than Trampas) through all of the portions of the San Mateo Creek Watershed to the boundaries of the San Mateo Wilderness and Camp Pendleton. In combination with already protected open space, a total of 26,270 acres of contiguous habitat connected to CNF and the San Mateo Wilderness would be conserved.

SECTION 1.2 CONSISTENCY ANALYSIS OF THE B-8 ALTERNATIVE APPLYING LANDSCAPE GUIDELINES AND PRINCIPLES IN RELATION TO THE PURPOSES AND GOALS OF THE PLANNING PARTICIPANT

1.1.1 Subregional NCCP Program – Purposes and Goals

Natural Communities Planning and Take Authorization. The central purpose of the Planning Participants is to undertake natural communities-based planning for the major habitat systems found in the County of Orange Southern NCCP/HCP Subregion in a manner that would further the statutory purposes of the NCCP Act Fish and Game Code Section 1600 *et seq* and FESA and meet the requirements of the Special Rule for the coastal California gnatcatcher, including the NCCP Conservation Guidelines, and, in so doing, provide the basis for authorizing Incidental Take of designated Covered Species (including both listed and unlisted species) pursuant to the NCCP/MSAA/HCP.

Consistency Review: Formulate an NCCP/HCP “Conservation Strategy” to carry out the SRP and Science Advisors conservation planning principles and tenets of reserve design.

The four programmatic elements that comprise a subregional NCCP/HCP Conservation Strategy are:

- Creation of a Habitat Reserve
- Formulation of a Habit Reserve Management Program
- Regulatory coverage for Designated Species
- Implementation Agreement and Funding

The manner and the extent to which the B-8 Alternative addresses the above four elements of the Conservation Strategy are reviewed in the following subsections.

a. Conservation Strategy Element One: *Creation of a Habitat Reserve*

The Habitat Reserve design proposed pursuant to the B-8 Alternative is assessed for consistency with three sets of landscape level planning principles set forth below: (1) consistency with the SRP/Science Advisors Tenets of Reserve Design; (2) consistency with the SAMP Tenets; and (3) consistency with the Baseline Conditions Watershed Planning Principles.

1. B-8 Alternative - Consistency with the SRP/Science Advisors Tenets of Reserve Design

SRP Tenet 1: Conserve Target Species throughout the Planning Area.

As described above, 28 planning species were used as planning “surrogates” for reserve design and evaluation. As noted above in the consistency analysis, mud nama is excluded from the analysis because it all alternatives would impact the mud nama and thus inclusion of the mud nama in the consistency analysis would artificially lower comparative summary scores for the alternatives. For the listed planning species, Alternative B-8 has medium to high consistency with the Draft Southern Planning Guidelines (see consistency analysis in *Part I, Chapter 8*). B-8 protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo and southwestern willow flycatcher. For the arroyo toad, all *key locations* of breeding habitat would be protected, as would all adjacent upland foraging and estivation habitat, with the exception of suitable habitat north of San Juan Creek associated with the Gobernadora development area, and all sources of coarse sediment important for maintaining suitable breeding habitat, including Verdugo Canyon. For the gnatcatcher, overall protection would be 87 percent of locations and 86 percent of coastal sage scrub habitat, including 95 percent of locations and 97 percent of coastal sage scrub in the Chiquita Canyon/Chiquadora Ridge *major population/key location*. For the vireo and flycatcher, *important populations* in GERA would be conserved. The San Diego and Riverside fairy shrimp vernal pools along Radio Tower Road would be protected. For brodiaea all locations and flowering-stalks would be protected, including the *major population/key locations* on Chiquadora Ridge and in the Lower Cristianitos/Lower Gabino Canyon. However, as reviewed in the sub-basin consistency analysis, the ability to fund the AMP under the B-8 Alternative is uncertain. For example, controlling giant reed proliferation in San Juan Creek that adversely affects arroyo toad breeding habitat, or invasive weeds and annual

grasses that can affect brodiaea populations may not be possible under the B-8 Alternative. Furthermore, no development would occur in the Cristianitos Canyon; thus, without remediation of the clay pits either by development or a costly soils stabilization program, the generation of fine sediments from erodible clays and downstream impacts to arroyo toad and vireo habitat would continue.

B-8 provides high protection for the unlisted planning species (see discussion in *Part I, Chapter 8*), notwithstanding uncertainty in funding the AMP. *Major and/or important populations* were identified for grasshopper sparrow, tricolored blackbird, yellow warbler, yellow-breasted chat, western spadefoot toad, orange-throated whiptail, San Diego horned lizard, southwestern pond turtle, Coulter's saltbush, many-stemmed dudleya, Salt Spring checkerbloom, and southern tarplant. Substantial protection would be provided for *key locations* of all of these species, ranging from 82 percent protection of populations of yellow warbler and orange-throated whiptail to 100 percent protection of populations of San Diego horned lizard, southern tarplant, and Coulter's saltbush.

Unlisted planning species for which *major/important populations* in *key locations* were not identified are cactus wren, Cooper's hawk, golden eagle, merlin, white-tailed kite, mountain lion, mule deer, and mud nama. For the cactus wren, Cooper's hawk, and white-tailed kite 86 percent of cactus wren locations, 93 percent of historic nest sites for the Cooper's hawk, and 86 percent of historic nest sites for the kite, as well as more than 85 percent of suitable habitat for the three species, would be protected under the B-8 Alternative. For the golden eagle and merlin approximately 73 percent of foraging habitat would be protected and both species likely would persist in the subregion. The B-8 Open Space would include a key foraging area for the merlin in Middle and Lower Chiquita Canyon. Under B-8, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

SRP Tenet 2: Larger reserves are better.

When combined with already protected open space in the Subregion, the B-8 Alternative is comprised of three major habitat blocks: the Eastern block (26,270 acres), the Western block (9,390 acres), and the Arroyo Trabuco block (1,830 acres). These habitat blocks combined total about 37,490 acres and account for about 76 percent of the B-8 Alternative open space. The Eastern block connects to substantial uninterrupted open space to the east in the CNF and Camp Pendleton.

SRP Tenet 3: Keep reserve areas close. Link reserves with corridors.

All three of the large habitat blocks described above are functionally interconnected. The only two areas where habitat areas linking the three habitat blocks narrow to less than 2,000 feet in width are the linkage between Ladera Ranch and Las Flores (linkage B) and along San Juan Creek between the Gobernadora and Trampas Canyon development areas (linkage J).

SRP Tenet 4: Keep habitat contiguous.

The tenet primarily refers to avoiding and minimizing fragmentation within habitat blocks and maintaining habitat continuity within habitat blocks. Habitat and land cover types within the three habitat blocks described above under Tenet 2 are presented in *Table 1*. As shown in *Table 1*, the vast majority of the three habitat blocks that would be protected as open space under the B-8 Alternative in combination with already protected open space are comprised of the five major vegetation communities: coastal sage scrub, chaparral, grassland, woodland and forest, and riparian, although the relative proportions of the vegetation communities vary among the blocks. Grassland, agriculture and coastal sage scrub are the largest components of the Western habitat block, making up 85 percent of the habitat block, while chaparral is a large component of the Eastern block.

The three habitat blocks exhibit relatively little internal habitat fragmentation; *i.e.*, existing development or disturbance that disrupts the habitat contiguity of the blocks. As shown in *Table 1*, existing developed and disturbed land uses within the habitat blocks comprise relatively small percentages of the blocks, ranging from about five percent of the Arroyo Trabuco block to two percent of the Eastern block. As would be expected from the existing pattern of urbanization in the planning area, internal fragmentation decreases from west to east, with the highest percentage of development and disturbed land uses in the Arroyo Trabuco and Western blocks and the lowest percentage in the Eastern block.

**TABLE 1
MAJOR VEGETATION COMMUNITIES WITHIN
B-8 ALTERNATIVE HABITAT BLOCKS**

| Vegetation Community/Land Cover Type | Habitat Block Acres | | | | |
|--|---------------------|--------------------|--------------|---------------|---------------|
| | Arroyo Trabuco | Western | | Eastern | |
| | Total | Total | RMV | Total | RMV |
| Coastal Sage Scrub | 313 | 3,177 | 1,669 | 11,695 | 4,950 |
| Chaparral | 121 | 335 | 176 | 5,557 | 3,098 |
| Grassland | 514 | 2,439 | 1,063 | 4,502 | 2,958 |
| Woodland & Forest | 141 | 134 | 91 | 1,155 | 312 |
| Riparian | 613 | 619 | 442 | 2,772 | 1,195 |
| Other Habitats/Land Covers | 30 | 2,412 ² | 1,892 | 92 | 77 |
| Developed/Disturbed (% of Total in Block) | 100 (5%) | 272 (3%) | 173 (3%) | 492 (2%) | 253 (2%) |
| Total in Block | 1,832 | 9,387 | 5,536 | 26,266 | 12,843 |
| ¹ Acreages for open space do not include infrastructure impacts; therefore the table only provides relative contributions of the vegetation communities within the habitat blocks, not absolute values. ² Agriculture accounts for 2,330 acres of Other Habitats/Land Covers in the Western block. Most of this agriculture is cultivated barley fields that provide habitat value similar to grassland for species such as grasshopper sparrow and foraging raptors. Source: Dudek 2004 | | | | | |

SRP Tenet 5: Reserves should be biologically diverse.

Table 2 shows the amount and percentage of the major vegetation communities protected in the B-8 Alternative, both in the overall B-8 Alternative and broken down by watersheds. Overall, the B-8 protects the large majority of the major vegetation communities. Protection ranges from a low of 73 percent for grassland to a high of 87 percent for woodland and forest. Other than grassland, the lowest overall conservation percentage of the major vegetation communities is 84 percent for chaparral.

**TABLE 2
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE
B-8 ALTERNATIVE WITHIN WATERSHEDS**

| Vegetation Community | Planning Area | | Cumulative Open Space | | | |
|-------------------------------|-----------------------|---------------------------|-----------------------|--------------|---------------------------|--------------------------------|
| | Planning Area (Acres) | % of Vegetation Community | Open Space Acres | % Open Space | % of Vegetation Community | % Deviation from Planning Area |
| Coastal Sage Scrub | 20,985 | | 18,015 | 86% | | |
| San Juan Watershed | 16,166 | 77% | 13,757 | 85% | 76% | -1% |
| San Mateo Watershed | 3,851 | 18% | 3,659 | 95% | 20% | 2% |
| Other Watersheds ¹ | 969 | 5% | 599 | 62% | 3% | -2% |
| Chaparral | 8,454 | | 7,069 | 84% | | |
| San Juan Watershed | 5,243 | 62% | 4,101 | 78% | 58% | -4% |
| San Mateo Watershed | 2,791 | 33% | 2,717 | 97% | 38% | 5% |
| Other Watersheds ¹ | 420 | 5% | 251 | 60% | 4% | -1% |
| Grassland | 15,371 | | 11,195 | 73% | | |
| San Juan Watershed | 8,428 | 55% | 5,962 | 71% | 53% | -2% |
| San Mateo Watershed | 3,121 | 20% | 3,048 | 98% | 27% | 7% |
| Other Watersheds ¹ | 3,823 | 25% | 2,185 | 57% | 20% | -5% |
| Woodland and Forest | 2,016 | | 1,755 | 87% | | |
| San Juan Watershed | 1,703 | 84% | 1,458 | 86% | 83% | -1% |
| San Mateo Watershed | 257 | 13% | 257 | 100% | 15% | 2% |
| Other Watersheds ¹ | 56 | 3% | 40 | 71% | 2% | -1% |
| Riparian | 5,629 | | 4,777 | 85% | | |
| San Juan Watershed | 4,362 | 77% | 3,604 | 83% | 75% | -2% |
| San Mateo Watershed | 1,035 | 18% | 1,020 | 99% | 21% | 3% |
| Other Watersheds ¹ | 231 | 4% | 153 | 66% | 3% | -1% |

¹ Other Watersheds include the San Clemente , Aliso and Santiago Hydrological Areas

Similar to the B-12 Alternative, Alternative B-8 emphasizes habitat protection in the San Mateo Watershed and all of Chiquita Canyon also would be protected under B-8. For example, 71 percent of the grassland in the San Juan Watershed is protected compared to 98 percent in the San Mateo Watershed. Similarly, the protection of each of the major vegetation communities is at least 10 percent higher in the San Mateo Watershed compared to the San Juan Watershed. As

with the other Alternatives, the protection of major vegetation communities in the San Clemente and Aliso Hydrological areas is substantially less than the San Juan and San Mateo watersheds, reflecting the existing urban character of these smaller watersheds.

These relationships also are illustrated by the “% of Vegetation Community” and “Deviation from Planning Area” columns in *Table 2*. All of the vegetation communities show an over-representation in the San Mateo Watershed, ranging from +2 percent for coastal sage scrub and woodland and forest to +7 percent for grassland.

Table 3 compares the representation of the major vegetation communities in the B-8 Alternative with their representation in the planning area in relation to the combined major vegetation communities. Coastal sage scrub, for example, is over-represented by 2 percent in the B-8 Alternative compared to grassland, which is under-represented by 3 percent. The other major vegetation communities are represented in the B-8 Alternative in the essentially the same proportion as they occur in the planning area.

TABLE 3. COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES UNDER THE B-8 ALTERNATIVE

| Vegetation Community | Planning Area | | Cumulative Open Space | | | % Deviation from Planning Area |
|-------------------------------|-----------------------|--------------------|-----------------------|--------------|-----------------------|--------------------------------|
| | Planning Area (Acres) | % of Planning Area | Open Space Acres | % Open Space | % of Total Open Space | |
| Coastal Sage Scrub | 20,985 | 40% | 18,015 | 86% | 42% | 2% |
| San Juan Watershed | 16,166 | 31% | 13,757 | 85% | 32% | 1% |
| San Mateo Watershed | 3,851 | 7% | 3,659 | 95% | 9% | 2% |
| Other Watersheds ¹ | 969 | 2% | 599 | 62% | 1% | -1% |
| Chaparral | 8,454 | 16% | 7,069 | 84% | 17% | 1% |
| San Juan Watershed | 5,243 | 10% | 4,101 | 78% | 10% | 0% |
| San Mateo Watershed | 2,791 | 5% | 2,717 | 97% | 6% | 1% |
| Other Watersheds ¹ | 420 | 1% | 251 | 60% | 4% | 3% |
| Grassland | 15,371 | 29% | 11,195 | 73% | 26% | -3% |
| San Juan Watershed | 8,428 | 16% | 5,962 | 71% | 14% | -2% |
| San Mateo Watershed | 3,121 | 6% | 3,048 | 98% | 7% | 1% |
| Other Watersheds ¹ | 3,823 | 7% | 2,185 | 57% | 5% | -2% |
| Woodland and Forest | 2,016 | 4% | 1,755 | 87% | 4% | 0% |
| San Juan Watershed | 1,703 | 3% | 1,458 | 86% | 3% | 0% |
| San Mateo Watershed | 257 | 0.5% | 257 | 100% | 1% | 0% |
| Other Watersheds ¹ | 56 | 0.1% | 40 | 71% | 0% | 0% |
| Riparian | 5,629 | 11% | 4,777 | 85% | 11% | 0% |
| San Juan Watershed | 4,362 | 8% | 3,604 | 83% | 8% | 0% |
| San Mateo Watershed | 1,035 | 2% | 1,020 | 99% | 2% | 0% |
| Other Watersheds ¹ | 231 | 0.4% | 153 | 66% | 0.4% | 0% |

¹Other Watersheds include the San Clemente, Aliso and Santiago Hydrological Areas

The under-representation of grassland in the San Juan and Other watersheds is in part the result of impacts in the Gobernadora sub-basin relative to total protection of grassland in the San Mateo Watershed. For the other vegetation communities, protection in the San Juan and San Mateo watersheds is proportional to their occurrences in the planning area. Overall, the B-8 provides a balanced representation of the existing distribution of the major vegetation communities in the different watersheds.

Table 4 compares the elevational distribution of the major vegetation communities in the planning area and the B-8 Alternative. The B-8 protection percentages generally increase with elevation for all the major vegetation communities up to 1,200 feet and then show declines for all communities except woodland and forest. For example, coastal sage scrub is under-represented by 2 percent under 400 feet, over-represented by 3 percent at 400-1,200 feet, and under-represented by 1 percent over 1,200 feet. The B-8 Alternative has moderate under-representation of grassland at the lowest elevation range (<400 ft), with 5 percent less in Cumulative Open Space (21 percent) compared to existing conditions (26 percent). Woodland and forest and riparian show slightly different patterns with woodland and forest under-represented at 400-800 feet, but otherwise consistent with the planning area, and riparian slightly under-represented above 800 feet.

**TABLE 4
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE
B-8 ALTERNATIVE COMPARED TO PLANNING AREA**

| Vegetation Community | Elevation Range (ft) | Planning Area | | Cumulative Open Space | | | |
|----------------------|----------------------|-----------------------|-------------------------------|-----------------------|--------------|-------------------------------|--------------------------------|
| | | Planning Area (Acres) | % Within Vegetation Community | Open Space Acres | % Open Space | % Within Vegetation Community | % Deviation from Planning Area |
| Coastal Sage Scrub | 0-400 | 1,414 | 7% | 985 | 70% | 5% | -2% |
| | 401-800 | 9,826 | 47% | 8,618 | 88% | 48% | 1% |
| | 801-1,200 | 6,928 | 33% | 6,334 | 91% | 35% | 2% |
| | >1,200 | 2,817 | 13% | 2,078 | 74% | 12% | -1% |
| Total Acres | | 20,985 | | 18,015 | | | |
| Chaparral | 0-400 | 166 | 2% | 85 | 51% | 1% | -1% |
| | 401-800 | 4,640 | 55% | 4,063 | 88% | 57% | 2% |
| | 801-1,200 | 2,158 | 26% | 1,994 | 92% | 28% | 2% |
| | >1,200 | 1,489 | 18% | 925 | 62% | 13% | -5% |
| Total Acres | | 8,453 | | 7,067 | | | |
| Grassland | 0-400 | 4,005 | 26% | 2,380 | 59% | 21% | -5% |
| | 401-800 | 8,122 | 53% | 6,314 | 78% | 56% | 3% |
| | 801-1,200 | 2,699 | 18% | 2,127 | 79% | 19% | 1% |
| | >1,200 | 545 | 4% | 374 | 69% | 3% | -1% |
| Total Acres | | 15,371 | | 11,195 | | | |
| Woodland and Forest | 0-400 | 174 | 9% | 153 | 88% | 9% | 0% |

TABLE 4
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE
B-8 ALTERNATIVE COMPARED TO PLANNING AREA

| Vegetation Community | Elevation Range (ft) | Planning Area | | Cumulative Open Space | | | |
|----------------------|----------------------|-----------------------|-------------------------------|-----------------------|--------------|-------------------------------|--------------------------------|
| | | Planning Area (Acres) | % Within Vegetation Community | Open Space Acres | % Open Space | % Within Vegetation Community | % Deviation from Planning Area |
| | 401-800 | 1,005 | 50% | 853 | 85% | 48% | -2% |
| | 801-1,200 | 619 | 31% | 566 | 91% | 32% | 1% |
| | >1,200 | 217 | 11% | 187 | 86% | 11% | 0% |
| Total Acres | | 2,015 | | 1,759 | | | |
| Riparian | 0-400 | 1,289 | 23% | 1,113 | 86% | 23% | 0% |
| | 401-800 | 3,088 | 55% | 2,725 | 88% | 57% | 2% |
| | 801-1,200 | 846 | 15% | 678 | 80% | 14% | -1% |
| | >1,200 | 407 | 7% | 263 | 65% | 6% | -1% |
| Total Acres | | 5,630 | | 4,779 | | | |

SRP Tenet 6: Protect reserves from encroachment.

In general, blocks of habitat that are roadless or otherwise serve to minimize human access better serve species than accessible habitat blocks. The B-8 proposed circulation system compliance with General Policy 4 (roads and infrastructure to be located outside the open space to the maximum extent feasible) is reviewed in *Part I, Chapter 8*. Protection of long-term, indirect effects/encroachment (*i.e.*, fuel management zones, exotic species, harmful chemicals, lighting, human and pet access), would be assured by compliance with Draft Southern Planning Guidelines, General Policy 5 requirements.

Watershed Planning Principles/Southern Science Advisors Tenet 7 – Terrains/ Hydrology.

San Juan Watershed – In the San Juan Watershed, two important canyon/creek systems—Chiquita Canyon and Verdugo Canyon—are proposed to be protected in their entirety. Compared with Gobernadora Canyon, Chiquita needs relatively little active management in order to maintain its natural processes. With the majority of upper Chiquita already protected under the Chiquita Conservancy and the western portion of Chiquita Canyon protected as part of the Ladera Open Space, sub-basin goals (subject to feasibility considerations regarding the funding of proposed habitat restoration areas) for Chiquita Canyon would generally be attained. The protection of Verdugo Canyon in its entirety would complement prior actions to protect Bell Canyon (County of Orange plus Coto de Caza conservation easement) and Lucas Canyon (RMV dedication for Caspers Wilderness Park), thus assuring protection of hydrologic/geomorphic processes in upper San Juan Creek important to the health of riparian habitat within San Juan Creek. With regard to Gobernadora Creek, Alternative B-8 protects the Sulphur Canyon

tributary to Gobernadora Creek but may not allow for the restoration of the stream meander as proposed in the Gobernadora Creek restoration plan (due to funding feasibility considerations). Similarly, the uncertainty in the ability of the B-8 Alternative to provide funding for the control of giant reed within San Juan Creek is significant for purposes of restoring stream flow hydrology and natural sediment transport processes.

San Mateo Watershed – In the San Mateo Watershed, the upper portion of the Cristianitos Canyon sub-basin would be protected in its entirety, complementing the prior protection of the western portion of the sub-basin through the creation of the Donna O’Neill Land Conservancy. Middle Gabino Canyon and lower Gabino Canyon are proposed to be preserved, thereby protecting important hydrologic/geomorphic processes in middle Gabino important to arroyo toad populations; the preservation of La Paz Canyon in its entirety provides further protection to geomorphic processes in middle and lower Gabino Canyon. However, in the absence of future development activities that would be used to correct existing erosion in clay soils (the clay pits and past mining disturbances that presently affect both the Cristianitos sub-basin and lower Gabino and the severe erosion in upper Gabino), these existing erosion areas would likely require significant expenditures of Habitat Reserve restoration funds (or other funds) and considerable effort. The correction of existing erosive conditions in clay soils would be required to reduce the generation of fine sediments that are detrimental to arroyo toad habitat and to other aquatic species. Grasslands and coastal sage scrub restoration in the upper Cristianitos sub-basin and in upper Gabino, recommended pursuant to the AMP, would also help reduce the generation of fine sediments, but funding for such restoration activities may be questionable due to the reduction in restoration funding inherent in the substantially lesser extent of development areas proposed under the B-8 Alternative.

2. B-8 Alternative Consistency with SAMP Tenets

SAMP Tenet 1: No Net loss of Acreage and Functions of Waters of the U.S./Waters of the State

Alternative B-8 has been designed to protect all the major riparian/wetlands systems throughout the RMV Planning Area. Therefore, the impacts to regulated Waters of the U.S. for this alternative would be less than the other “B” Alternatives: 7.7 acres of wetlands and 16.95 acres of Waters of the U.S. With respect to net acreage of Waters of the U.S., Alternative B-8 would need to provide mitigation in the form of new restoration/creation of wetlands acreage equal to the loss of wetlands and non-wetlands waters associated with proposed development. Mitigation for these impacts is discussed conceptually in the Aquatic Resources Restoration Plan (*Appendix H*) in potential habitat creation/restoration areas including GERA, Gobernadora Canyon, Gobernadora Canyon/Fertile Crescent, Sulphur Canyon, Chiquita Creek between the “Narrows” and the SMWD wastewater treatment facility, Chiquita Canyon between SMWD wastewater

treatment facility, and Cow Camp Road. Stream restoration opportunities are identified within Gobernadora at the knickpoint, Chiquita Creek between the “Narrows” and the SMWD wastewater treatment facility, and upper Gabino Creek. Because of the limited amount of regulated waters that would be affected by this alternative, no net loss of acreage is considered achievable by this alternative.

This alternative would impact 56.6 acres of CDFG riparian habitat that would be addressed through the NCCP/MSAA/HCP.

Further analysis would be required to determine whether this alternative can maintain long-term function, particularly with regard to its ability to implement measures such as long-term control of invasive species (*e.g.*, giant reed, tamarisk, and pampas grass) that presently impact aquatic resources.

SAMP Tenet 2: Maintain/Restore Riparian Ecosystem Integrity

With its focus on protecting the major canyon systems as well as the mainstem creeks, Alternative B-8 addresses the protection aspect of this tenet within all of the major creek systems.

SAMP Tenet 3: Protect Headwaters

Each of the mainstem headwaters areas not already urbanized is proposed to be protected as a part of Alternative B-8. The headwaters area of Trampas Creek is proposed for development, but this area has previously been significantly altered by existing mining operations. Proposed development would be required to include BMPs for stormwater flows. Tributary headwaters in the Gobernadora Sub-basin would be affected by this alternative.

SAMP Tenet 4: Maintain/Protect/Restore Riparian Corridors

All major riparian corridors within the RMV Planning Area would be protected under this alternative scenario. Further analysis would be required to determine whether Alternative B-8 could restore aquatic resources areas that are impacted under existing conditions (*e.g.*, Gobernadora Creek, invasive species in San Juan Creek)

SAMP Tenet 5: Maintain/and or/Restore Floodplain Connection

Alternative B-8 would maintain all existing areas of floodplain connection. Further analysis would be required to determine whether this alternative could provide for the recommended restoration of the historic floodplain connection above the knickpoint in the Gobernadora Creek Sub-basin. Where longer term terrains/hydrology processes are responsible for areas with

existing loss of floodplain connection (*e.g.*, Chiquita Canyon at the “Narrows” and lower Gobernadora Creek below the knickpoint), Alternative B-8 does not propose any actions that would be contrary to such processes.

SAMP Tenet 6: Maintain and/or Restore Sediment Sources and Transport Equilibrium

Alternative B-8 proposes to protect all of the major sources of coarse sediment in order to assure the continued generation of such sediments important for riparian/wetlands habitat systems.

SAMP Tenet 7: Maintain Adequate Buffer for the Protection of Riparian Corridors

All major riparian corridors would be adequately buffered from development bubbles including Chiquita, Gobernadora, San Juan, Verdugo, Cristianitos, Talega, La Paz, and Gabino Creeks. No development is proposed in the Chiquita, Verdugo, Cristianitos, La Paz, Gabino, or Talega sub-basins. Therefore, all riparian corridors associated with these creeks would be protected under the B-8 Alternative. Development is proposed along San Juan Creek. However, the development is limited in extent and would not act as an impediment to wildlife movement, including large mammals such as mountain lions, and would not preclude watershed-to-watershed movement by less mobile species such as the arroyo toad.

SAMP Tenet 8: Protect Riparian Areas and Associated Habitats of Listed and Sensitive Species

Riparian areas associated with listed species, other planning and sensitive species are proposed to be protected under this alternative.

Conclusion

On an overall basis, the B-8 Alternative is consistent with the SAMP Tenets. This alternative is not expected to result in significant impacts.

3. B-8 Alternative Consistency with Baseline Conditions Watershed Planning Principles

(a) Geomorphology/Terrains

Principle 1: *Recognize and account for the hydrologic response of different terrains at the sub-basin and watershed scale.*

Land use/resource planning (hereafter Planning) should recognize the characteristics of each of the terrains found within the planning area: (1) “sandy” terrains; (2) “silty/sandy” terrains; (3) “clayey” terrains; and (4) “crystalline” terrains.

Watershed Scale Analysis

Sandy Terrains – *Planning in sandy terrains should provide for setbacks from the mainstem channel in order to retain the infiltration capacity of the valley floor and protect the integrity of the mainstem channels and corridors. Planning should avoid the addition of significant impervious surfaces to major tributary side canyons and swales to the extent feasible. Planning should direct significant new impervious surfaces to areas characterized by relatively high runoff rates/low infiltration rates under existing conditions.*

As reviewed in the WQMP (Appendix K), site design BMPs for Alternative B-8 used in identifying development areas generally cluster development on the ridgetops in areas characterized by relatively high runoff rates and as far from the stream corridors as is feasible. This Alternative provides setbacks from the mainstem channel in sandy terrains in order to protect the integrity of the mainstem channels and corridors. As reviewed in the WQMP, new development under this Alternative generally avoids placing impervious surfaces in the major tributary side canyons. B-8 does allow limited development in smaller side canyons of the Gobernadora side canyon.

Sandy Terrains – *Drainage from new impervious surfaces should, where feasible, be directed to major tributary side canyons for infiltration/detention. Drainage into major side canyons and swales must be accompanied by adequate detention/infiltration addressing the particular characteristics of sandy terrains.*

Alternative B-8 would be able to meet this policy.

Clayey Terrains – *Planning in clayey terrains should attempt, to the maximum extent feasible, to emulate the runoff/infiltration characteristics of clayey terrains and to correct any existing erosion in clayey terrains contributing to downstream turbidity impacts.*

The ability of B-8 to address these existing erosion problems has not been resolved due to the question of the adequacy of funding for the AMP.

Clayey Terrains – *Restoration of native grasslands may be a strategy for existing grazing lands in headwaters and other appropriate areas to reduce surface erosion, increase stormwater infiltration and reduce downstream turbidity.*

The AMP recommends the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. NCCP/MSAA/HCP *Table 8-2* addresses the consistency of the B-8 Alternative with the restoration recommendations of the AMP.

Crystalline Terrains – *Planning in crystalline terrains should provide for the protection of sources of coarse sediments (e.g., Verdugo Canyon).*

Figure 46-M depicts the locations of crystalline terrains. Alternative B-8 protects the crystalline terrains that generate coarse sediments.

Sub-basin Scale of Analysis – *Although generalized terrains patterns can guide planning at a watershed scale, the specific characteristics of a given sub-basin should direct planning at the site-specific scale.*

Sub-basin Scale Terrains Analysis

The consistency of the B-8 Alternative with the sub-basin watershed principles is reviewed in *Part I, Chapter 8, Table 8-2*. With regard to the hydrologic response of the various Alternatives to terrains at the sub-basin level, Chapter 4 of the WQMP (‘Water Quality Management Plan Elements’) specifically reviews the sub-basin Planning Considerations and Planning Recommendations with regard to water quality and hydrologic issues for Alternative B-8 in qualitative terms; Chapter 4 of the WQMP proposes Site Planning and Treatment/Flow Control BMPs that specifically address each of the sub-basin Planning Considerations.

(b) Hydrology

Given the limited development under the B-8, Alternative and the use of hydrology measures specified in the WQMP, a high level of consistency is achieved with the hydrology principles, as reviewed below.

Principle 5: Maintain and/or restore the inherent geomorphic structure of major tributaries and their floodplains.

The role of major episodic storm events in transporting sediment, re-organizing channel/floodplain structure, and re-generating riparian plant communities should also be considered.

The role of major episodic storm events in transporting sediment, re-organizing channel/floodplain structure, and re-generating riparian plant communities has been considered and incorporated into the design of Alternative B-8. B-8 avoids all channels and geomorphically-active floodplain surfaces, where all episodic adjustments occur.

(c) Sediment Sources, Storage and Transport

Principle 6: Maintain coarse sediment yields, storage and transport processes.

Planning should take into account the volume and grain size of sediment generation occurring within the terrains specific to each sub-basin. In general, sandy and crystalline terrains will produce coarse sediments that may be important for downstream channel structure and habitat. Clayey terrains will produce fine sediments that may be associated with increased turbidity in downstream areas.

The manner and extent to which B-8 does or does not protect sources of coarse sediments in sandy and crystalline terrains is reviewed under Geomorphology/Terrains – Principle 1. Likewise, the manner in which B-8 does or does not concentrate development in clayey trains, with the effect of reducing yields of fine sediments is also reviewed under Geomorphology/Terrains – Principle 1.

Planning should maintain sediment transport and storage processes between hillslope, tributaries, sub-basin channels and mainstem creeks.

Alternative B-8 avoids the sandy and crystalline terrains that protect significant sources of coarse sediments. Further each significant source of coarse sediments—the sandy terrains in Chiquita and Gobernadora sub-basins and the crystalline terrains in Verdugo Canyon, middle Gabino and La Paz Canyon—is avoided in such a way that sediment transport and storage processes between hillslope, tributaries, sub-basin channels and mainstem creeks are avoided by means of protecting physical contiguity in these areas and through avoidance of structures that would impede sediment movement in tributaries and in mainstem creeks.

Planning should maintain the geomorphic characteristics of streambeds, including maintaining the supply and transport of sediment types that are important to aquatic habitat systems (e.g., sand, gravel, cobbles).

As noted above, Alternative B-8 avoids the sandy and crystalline terrains that protect significant sources of coarse sediments. Chapter 4 of the WQMP presents flow management strategies addressing the sub-basin principles directed toward maintaining the geomorphic characteristics of streambeds.

Planning should maintain significant sediment transport and storage processes in: (a) central San Juan Creek which transports coarse sediments from the upper San Juan watershed, Bell Canyon and Verdugo Canyon to downstream areas; and (b) middle and lower Gabino Creek and Cristianitos Creek downstream of the Gabino/Upper Cristianitos confluence containing areas with coarse texture channel beds and over-bank terraces supporting important aquatic habitats.

The consistency review in *Part I, Chapter 8, Table 8-2* analyzes the consistency of the B-8 Alternative with the sub-basin planning recommendations directed toward protecting sediment transport and storage processes in central San Juan Creek and middle and lower Gabino Creek and lower Cristianitos Creek. The WQMP Chapter 4 strategies and WQMP Chapter 7 impact analyses analyze both land use site planning BMPs and flow management strategies with respect to B-8.

Planning should assure that major new detrimental sources (or sinks) of sediment are not created. New sources can result from either causing new locations for sediment generation or mobilizing sediment through accelerating existing erosional areas or initiating sedimentation from recently inactive areas such as landslides. Particular attention must be paid to avoiding creating new sources of in-channel sediment.

The manner in which the ‘B’ Alternatives address existing sources of erosion in clay soils has been reviewed previously under Principle 1. The manner in which each of the ‘B’ Alternatives does or does not focus development substantially in areas with clay soils, thereby reducing potential future generation of fine sediments, has also been reviewed previously. Likewise, the extent to which the different ‘B’ Alternatives avoid sandy soils and thereby avoid generating new sources of erosion has also been reviewed previously under Principle 1.

Planning should attempt, to the extent feasible, to address existing sources of sediment, or deficits of sediments, that may be detrimental to the streams systems. Such sources may include increased fine sediment yields from upper Cristianitos Creek and upper Gabino Creek.

As noted previously, Alternative B-8 avoids all significant sources of coarse sediments; however, the degree to which B-8 would address the production of fine sediments in Cristianitos and upper Gabino is dependant upon the availability of funding through the AMP.

(d) Groundwater Hydrology

Principle 7: *Utilize infiltration properties of sandy terrains for groundwater recharge and to offset potential increases in surface runoff and adverse effects to water quality.*

Land planning should take advantage of the infiltration opportunities associated with sandy terrains to offset potential effects of changes in surface runoff and water quality associated with existing and future land uses and groundwater extractions.

B-8 proposes no development in Chiquita and restoration in Gobernadora, therefore existing infiltration would continue under this alternative.

Principle 8: *Protect existing groundwater recharge areas supporting slope wetlands and riparian zones; and maximize groundwater recharge of alluvial aquifers to the extent consistent with aquifer capacity and habitat management goals.*

Planning should take into account and provide for the differences in character and function of groundwater recharge areas in specific sub-basins.

The influence of terrains on recharge areas is discussed under Principles 1, 2 and 5.

Furthermore, Chapter 2 of the WQMP sets forth “hydrologic conditions of concern” in accordance with the Orange County DAMP and Orange County/San Diego Regional Water Quality Control Board MS4 permit. Two of the identified conditions of concern are (1) decreased infiltration and groundwater recharge and (2) changed base flow. Chapter 7 of the WQMP reviews the B-8 Alternative in relation to these conditions of concern and their related significance thresholds.

Planning should explore opportunities to utilize urban-generated runoff that has been treated in natural water quality systems for aquifer recharge.

As noted below in Water Quality, the combined control systems proposed for each sub-basin provide for aquifer recharge where such recharge may be beneficial. For example, recharge of the San Juan Creek aquifer may benefit the arroyo toad.

Planning should anticipate the need to maintain infiltration and groundwater recharge in the main valleys of Chiquita and Gobernadora sub-basins and their wide and sandy tributaries in order to maintain groundwater levels important for sustaining creek flows and associated wetlands and riparian habitats.

B-8 proposes no development in Chiquita and restoration in Gobernadora; therefore, existing infiltration would continue under this alternative.

Planning should protect the relationship between subsurface water and the slope wetlands.
Slope wetlands and their associated recharge areas are protected by Alternative B-8.

(e) Water Quality

The reader is directed to the discussions of the B-10M and B-12 Alternatives below for water quality recommendations. The water quality issues, recommendations and measures apply equally to all Alternatives where Planning Area boundaries are comparable.

b. Conservation Strategy Element Two: *Habitat Reserve Management Program*

The B-8 Alternative would protect all areas described in the HRMP target for invasive species controls and habitat restoration. Opportunities for providing recovery actions for the arroyo toad, least Bell's vireo and the California gnatcatcher in the San Juan Creek Watershed would be provided through habitat restoration and invasive species control while actions to address existing areas of erosion in clay soils within the San Mateo Creek Watershed would benefit the arroyo toad. However, with considerably fewer residential units and opportunities for other types of development, the B-8 Alternative has a significantly reduced adaptive management funding capability as compared with the other Habitat Reserve design alternatives. As a consequence, it is likely that the B-8 Alternative would not be able to assure the funding of several significant aspects of long-term monitoring, restoration and adaptive management.

c. Conservation Strategy Element Three: *Regulatory Coverage for Designated Species*

Because the B-8 Alternative is not being recommended for consideration for inclusion as a part of the proposed Conservation Strategy a suite of species proposed for regulatory coverage was not identified for the Alternative.

d. Conservation Strategy Element Four: *Implementation Agreement and Funding*

The fourth element of and NCCP Conservation Strategy is the Implementation Agreement (IA) (*Part III* of this NCCP/MSAA/HCP), which includes provisions for funding. The assemblage of the Habitat Reserve depends on the feasibility of assuring funding and landowner agreement for two large-scale public acquisitions. Given the need for public funding in an era of severe

funding constraints at the local, state and federal levels, Alternative B-8 requires a demonstration of the feasibility of providing assured funding for acquisitions of areas proposed for inclusion in the Habitat Reserve. The corollary element - landowner agreement to the proposed acquisitions (because public agency policy is to acquire lands only from willing sellers) - requires agreement not only on valuation but also regarding concurrence in the balance between development areas (both the scale of allowable development and the ability to finance supporting infrastructure) and dedication areas.

As described below approximately 12,455 acres of RMV land would have to be acquired to assemble the Habitat Reserve. This large amount of habitat acquisition raises substantial issues regarding the adequacy of funding for assembling Habitat Reserve land areas identified under the B-8 Alternative and to provide funding for implementation of the AMP. While the B-8 Alternative addresses Habitat Reserve design/connectivity planning considerations, the feasibility of acquiring significant portions of the land areas required to implement the B-8 Alternative Habitat Reserve design has not been demonstrated. To the extent that the economic return from proposed development under this Alternative would be insufficient to ensure landowner participation in a public acquisition program (even if the substantial funds required to assure the success of public acquisition were secured, RMV has stated that it would not be a willing seller in light of the limited development allowed under the B-8), this Alternative would not be feasible. In addition to the issue of voluntary participation in an acquisition by RMV, this Alternative may not be economically feasible without clearly identified sources of substantial funding for the acquisition of development rights and for funding the implementation of the AMP. Therefore, the overall feasibility of providing the economic basis for the assemblage of the Habitat Reserve and the funding of the AMP is highly questionable.

**SECTION 1.3 SUMMARY OF MAJOR CONSERVATION STRATEGY ISSUES
RAISED IN THE PART I, CHAPTER 8 SUB-BASIN
CONSISTENCY REVIEWS AND PART I, CHAPTER 9
LANDSCAPE-SCALE CONSISTENCY REVIEW FOR THE B-8
ALTERNATIVE**

1.3.1 Consistency with both Landscape Level and Sub-Basin Guidelines/Principles

Except for constraints on linkage K south of Trampas Canyon common to all of the ‘B’ Alternatives, Alternative B-8 achieves consistency with most of the landscape level and sub-basin guidelines except those that involve the funding of the AMP set forth in *Chapter 12*. This level of consistency is achieved primarily through the proposed preservation of 84 percent of RMV lands in conjunction with already protected open space.

1.3.2 Economic Feasibility of Assembling the Habitat Reserve Areas on RMV Lands

With regard to the assemblage of Habitat Reserve areas on RMV lands, without provision for public acquisition of open space the B-8 Alternative requires an open space-to-dedication ratio in excess of 5 to 1. There are two large-scale land areas considered to be generally comparable to RMV lands with regard to resources and involvement in the NCCP program. These areas are the Newport Coast in Orange County (part of the County of Orange Central and Coastal NCCP/HCP) and Otay Ranch in the Chula Vista Subarea Plan area of San Diego County (part of the San Diego City and County MSCP program). Open Space dedications areas under the Newport Coast Local Coastal Program approved under the NCCP/HCP comprise approximately 62 percent of the total private lands. Similarly, open space dedications under the Otay Ranch element of the Chula Vista Subarea Plan comprise 66 percent of the 17,157 acres of identified vegetation communities. Under the Newport Coast and Otay Ranch plans, the ratio of open space to development is approximately 2 to 1. These two areas are under very stringent environmental regulations (the Newport Coast area was subject to the California Coastal Act of 1976 as well as the NCCP and Otay Ranch is subject to the NCCP) and contain lands with very high natural resource values. Another similar large-scale land program, the Aliso Viejo master plan area in Orange County (an element of the Central and Coastal NCCP/HCP) provided a 1 to 1 dedication ratio, or 50 percent preservation of open space/habitat areas. The open space areas under the B-8 Alternative, at over a 5 to 1 ratio, are clearly well in excess of any land area comparable in habitat value to the RMV lands and therefore dedication of the entire proposed open space would not meet a “rough proportionality” test. Further, one of the development areas, Planning Area 5, has considerably fewer resource values than any of the other portions of the RMV lands (this land area is shown as developed under all of the ‘B’ Alternatives) and thus would not support a “nexus” test warranting a significant offsetting open space dedication area. Consequently, assuming even a 2 to 1 dedication ratio (which is likely high due to the limited resource values within Ortega Gateway and Trampas Canyon), approximately 12,000 acres of open space would have to be acquired in order to assemble the Habitat Reserve lands (3,680 acres of developable land at a 2:1 ratio is 6,360 acres that would be dedicated, leaving 12,455 acres which would have to be acquired). Although the B-12 Alternative provides for 73 percent dedication of lands to the Habitat Reserve (a 3:1 ratio), the B-12 Alternative would allow for 14,000 housing units to provide the economic basis for the Habitat Reserve dedications in contrast with B-8 Alternative projected to allow for 8,400 units; additionally, the B-8 would likely not provide for as great a range of housing opportunities as the other ‘B’ Alternatives, further reducing the social and economic basis for justifying Habitat Reserve dedications from the perspective of RMV and the County of Orange.

As noted above, there are substantial issues regarding the adequacy of funding that would be required to assemble Habitat Reserve land areas identified under the B-8 Alternative and to

provide funding for implementation of the AMP. The Habitat Reserve design Alternatives are to be subject to a joint CEQA/NEPA review in the EIR/EIS for the NCCP/MSAA/HCP. Because CEQA requires the lead agencies to identify “feasible alternatives” which are “capable of” avoiding or substantially lessening any significant effects of the project (emphasis added) and because NEPA requires alternatives to be “reasonable” (which has been interpreted to mean feasible), the B-8 Alternative does not appear to be meet the test of constituting a feasible alternative.

1.3.3 Long-term Habitat Management

In that the B-8 Alternative would allow significantly less development than any of the other Habitat Reserve design Alternatives, the AMP for the B-8 Alternative would probably not be as extensive from a monitoring perspective. However, many of the long-term adaptive management considerations involve invasive species control and habitat restoration areas, and such considerations exist independently of the level of development allowed under particular ‘B’ Alternatives. Thus, while some long-term monitoring costs would likely be less than under the other Habitat Reserve design Alternatives, other costs related to long-term monitoring and invasive species control (*e.g.*, monitoring for invasive plant and animal species) would likely be as high, or even higher, than for the other ‘B’ Alternatives due to the larger area of the proposed Habitat Reserve requiring oversight. Restoration and management actions (particularly invasive species control) would remain the same as under the other Alternatives, with potentially higher costs for the control of invasive plant species (reflective of the larger Habitat Reserve area that would need to be managed).

Regarding long-term habitat management, with considerably fewer residential units and opportunities for other types of development, the B-8 Alternative has a significantly reduced adaptive management funding capability as compared with the other Habitat Reserve design Alternatives. As a consequence, it is likely that the B-8 Alternative would not be able to assure the funding of several significant aspects of long-term monitoring, restoration and adaptive management.

The importance of the potential inability to implement an effective AMP within the Subregion is underscored by the comments provided by Drs. Noon and Murphy in their written comments to the County. Noon and Murphy declared that:

. . . common threats in southern California such as wildfire, invasive species, and extreme weather events have emphasized that reserve management may be even more important to the success of conservation than reserve extent. Coping with environmental change, both natural and human-caused, is the single greatest challenge facing

conservation planners in the new millennium – one that we believe can be met only by using adaptive management. (page 1. October 2004 letter)

Thus, the ability to implement adaptive measures may be as important to long-term conservation of species and habitat as the size of the Habitat Reserve.

1.3.4 Conclusions Regarding Consistency with Subregional Conservation Goals and Objectives

Based on the foregoing analyses, it does not appear that the B-8 Alternative can feasibly carry out three of the four elements of a Conservation Strategy – assembly of a Habitat Reserve, implementation of a long-term AMP and the provision of funding and assemblage of the proposed Habitat Reserve through an IA.

SECTION 1.4 CONSISTENCY WITH OTHER PLANNING PARTICIPANT GOALS AND PURPOSES

This section reviews only those specific purposes that relate to analysis of the Conservation Strategy.

- 1. In formulating the Habitat Reserve, Habitat Reserve Management Program and Regulatory Coverage elements of the Conservation Strategy, provide for coordination with the SAMP Program for the planning area in order to maximize consistency between the NCCP/MSAA/HCP and SAMP programs.**

All of the Alternatives selected for review in the NCCP/MSAA/HCP and associated environmental documents have been prepared/analyzed for further consideration in cooperation with the USACE. The Watershed Principles contain the USACE SAMP tenets, as well as maps and summaries of the WES functional analyses. Sub-Basin Planning Considerations and Planning Recommendations have been formulated through a collaborative planning effort (see Introduction to the Watershed Principles in NCCP/MSAA/HCP *Chapter 5, Section 5.1.1*). Importantly, many of the Protection Recommendations set forth in the Draft Southern Planning Guidelines and as reviewed in *Part I, Chapter 4* address aquatic and riparian habitats and species, all of which are central to the SAMP program. *Part I, Chapter 8* reviews the consistency of the proposed Conservation Strategy with respect to both the Draft Southern Planning Guidelines and the Draft Watershed Planning Principles, including the extent to which each of the Habitat Reserve Alternatives is consistent with the Guidelines and Principles. The proposed Habitat Reserve under Alternative B-8 thus would achieve the goal of formulating a reserve design that integrates the NCCP reserve with a SAMP Aquatic Resources Conservation Program in one Habitat Reserve for both the NCCP/MSAA/HCP and SAMP.

Part I, Chapter 7 describes and reviews the proposed AMP. Preparation of the elements of the AMP has been coordinated with the USACE as well as the other planning participants. Restoration recommendations prepared by WES as part of the SAMP process have been reviewed and, where practicable, have been integrated with the NCCP sub-basin management and restoration recommendations. Specific elements of the proposed AMP including enhancement/restoration of coastal sage scrub and grasslands would reduce sediment generation and improve stormwater infiltration, consistent with SAMP/MSAA watershed protection goals. The proposed Wildland Fire Management Plan (*Appendix N*) and the coordinated Grazing Management Plan (*Appendix G*), which is consistent with the AMP, are directed toward the long-term health of plant species and toward the reduction of fire-induced sediment generation, both of which goals will benefit watershed processes.

Importantly, a comprehensive WQMP has been applied qualitatively to Alternative B-8 (see *Appendix K*). The WQMP addresses SDRWQCB NPDES requirements including the County of Orange MS4 permit program, aquatic species protection standards, USACE 404(b)(1) water quality guidelines and Clean Water Act 401 requirements. Alternative B-8 would incorporate the WQMP as a required program element for RMV development areas under the NCCP/MSAA/HCP IA. Thus, the goal of integrating Clean Water Act (SAMP), Porter-Cologne Act (state NPDES and non-point source plan requirements) and NCCP/HCP water quality considerations would be attained.

Comprehensive review of compliance with the purpose, goals and objectives of the SAMP will be conducted as part of the EIS review of the program proposed for the SAMP planning area. However, to the extent reviewed in this Appendix, the formulation of the Habitat Reserve as proposed in Alternative B-8 and the AMP reviewed in *part I, Chapter 7* have been fully coordinated with the SAMP planning program and have addressed the Purpose and Objectives of the SAMP as presented in *Part I, Chapter 2*.

- 2. In formulating the NCCP/MSAA/HCP Habitat Reserve and Habitat Reserve Management Program elements of the final Conservation Strategy, provide for coordination with the County General Plan Amendment/Zone Change process for RMV lands and other planning programs potentially impacting the planning area.**

Alternative B-8 has been coordinated with the County GPA/ZC process and is one of the alternatives reviewed as part of the County's EIR for the proposed Ranch Plan GPA/ZC. Transportation required to support land uses proposed in Alternative B-8 have been identified pursuant to the County GPA/ZC process so that the potential impacts of these infrastructure facilities can be reviewed as part of this NCCP/MSAA/HCP and associated EIR/EIS (see *Part I, Chapter 8*).

All of the ‘B’ Alternatives developed through the coordinated planning process (including the B-8 Alternative prepared by the NCCP Working Group) were included in and fully reviewed as part of the CEQA process for the RMV GPA/ZC.

Although not included as a Covered Activity for purposes of Take authorization for listed species, the proposed FTC-S is part of the County MPAH and potential impacts of alignments proposed for the FTC-S on the alternative Habitat Reserve designs, including the B-8 Alternative, are reviewed pursuant to the NCCP/MSAA/HCP EIR/EIS. Given the multiple alignments under consideration for the FTC-S, the impacts/mitigation review will not be undertaken as part of this analysis but will instead be carried out under the NCCP/MSAA/HCP EIR /EIS review.

- 3. In formulating the Habitat Reserve Management Program element of the final Conservation Strategy and undertaking coordinated land use planning, assure the preparation of a comprehensive water quality management program which, to the maximum extent feasible, integrates a program addressing species and habitat systems water quality considerations, requirements of the SWRCB and the SDRWQCB and the USACE/EPA 404(b)(1) water quality guidelines.**

As reviewed above under the consistency review for the Baseline Conditions Watershed Planning Principles, a comprehensive water quality management element has been prepared based on the B-10M and B-12 Alternatives. Since the WQMP would be implemented entirely outside the Habitat Reserve, the WQMP has not been included as a formal element of the *Part I, Chapter 7* AMP. However, because the WQMP will be adaptively managed over time in order to protect resources within the Habitat Reserve and areas downstream of the Habitat Reserve (see WQMP Chapter 6), the WQMP is identified as a “coordinated management plan” and thus is considered to be consistent with the goal of an integrated water quality management element that is adaptively managed for the benefit of the Habitat Reserve (see discussion in *Part I, Chapter 7*).

As reviewed above, the WQMP presents an analysis employing the County and SDRWQCB concepts of “pollutants of concern” and “hydrologic conditions of concern” to provide a framework for addressing NCCP/MSAA/HCP species/habitat concerns (including Tenet 7 of the Southern Science Advisors tenets of reserve design), the SDRWQCB NPDES and 401 requirements and the USACE/EPA 404(b) water quality guidelines. The B-8 Alternative development areas are identical to portions of the B-4 Alternative and thus the Water Quality Management Plan analyses and measures applicable to the B-4 Alternative for those areas would fully address the B-8 Alternative.

SECTION 1.5 CONSISTENCY WITH THE COLLECTIVE PURPOSES OF THE PARTICIPATING LANDOWNERS

1.5.1 Governments/Landowners

- a. Provide for social and economic needs by identifying development areas consistent with the NCCP Conservation Strategy and in accordance with the requirements of the NCCP Act and FESA.**

RMV and the County identified a series of objectives for the Ranch Plan project that respond, in relevant part, to the community's desire and need to achieve specific social and economic goals. Notably, the objectives established for the Ranch Plan include the development of an economically viable mix of land uses which address (i) local housing needs, (ii) jobs/housing balance, (iii) transportation and circulation demands, (iv) recreational opportunities and (v) preservation of resources (ala agricultural, mineral, cultural and historic). Analysis of Alternative B-8 in the context of achieving these social and economic goals/objectives manifests the following:

1. Local Housing Needs – Alternative B-8 contemplates development of up to 8,400 dwelling units, with no units specifically identified for senior housing development. This figure is inconsistent with the project's growth management objective of 14,000 units and is far below the target range of 20,468 residential units identified in OCP 2000M and the Orange County Growth Management Element. Accordingly, implementation of Alternative B-8 would conflict with the County's growth management goals for the project area.
2. Jobs/Housing Balance – Alternative B-8 contemplates development of 82 acres of urban activity center (with approximately 915,000 square feet of useable area), 90 acres of business park (with slightly more than 1,373,000 square feet of useable area) and 20 acres of neighborhood center uses (with approximately 200,000 square feet of useable area). This level of commercial development activity is anticipated to generate approximately 7,700 new jobs. Assuming development of 8,400 dwelling units and full employment within the project area, Alternative B-8 would produce a jobs/housing ratio of approximately 0.92 (a figure which is considered "in balance" for purposes of SCAG projections). However, the anticipated creation of 7,700 new jobs is far below the project's employment objective of creating approximately 16,509 new jobs. Accordingly, implementation of Alternative B-8 would conflict with the County's job creation goals within the southern Orange County area.

3. Transportation and Circulation – Circulation plans originally developed for Alternative B-8 conceptualize a highway and roadway network that could accommodate local and regional traffic in a manner consistent with (or otherwise amenable to) existing and planned transportation strategies/plans established for South Orange County (see, *e.g.*, Orange County Master Plan of Arterial Highways [MPAH]). Furthermore, implementation of Alternative B-8 would be conditioned, presumably, upon compliance with all County transportation programs and mandatory mitigation of any proximately caused traffic impacts (*e.g.*, intersection service deficiencies). Under these assumptions, Alternative B-8 would satisfy the project’s transportation and circulation goals.

4. Recreation – Alternative B-8 would not provide for the development of any new regional parks, or the expansion or improvement of any existing regional parks. However, in accordance with the mandates of the Quimby Act, it is presumed that new local parklands would be established within the Alternative B-8 project area. Furthermore, it is presumed that implementation of Alternative B-8 would provide for the development of trails, bikeways and other recreational amenities as a condition of project approval and consistent with County policies. Thus, Alternative B-8 would appear to satisfy the project’s recreational goals and objectives.

5. Resource Preservation – Implementation of Alternative B-8 would impact certain archaeological and paleontological resources located upon the project site. However, studies indicate that these cultural and paleontological impacts could be mitigated to a less than significant level in a manner consistent with the project’s resource preservation goals. Furthermore, and as originally designed, implementation of Alternative B-8 would allow for the continuation of agricultural activities over a portion of the project area, and would allow for the continuation of mineral extraction/use for a period of years following commencement of the project. Notwithstanding, mineral extraction would be prohibited after the occurrence of certain development events (*e.g.*, completion of project phases located adjacent to mining areas, and elimination of mining activities within the San Juan Creek mineral extraction zone). Such prohibitions would frustrate the project’s goal of extracting and utilizing on-site mineral resources during the development process.

b. Identify development areas that will serve as the economic basis for Habitat Reserve dedications and long-term management funding.

Alternative B-8 as proposed provides for development areas that create the economic basis for dedications essential to the formation of only a portion of the Habitat Reserve. Moreover, the B-8 does not provide sufficient land areas for development sufficient to support extensive

infrastructure costs and long-term risks of development. Consequently, the B-8 Alternative does not fulfill the goal of identifying development areas that will serve as the economic basis for Habitat Reserve dedications and long-term management funding.

SECTION 1.6 CONSISTENCY WITH THE INDIVIDUAL PURPOSES OF THE PARTICIPATING LANDOWNERS

1.6.1 County of Orange

As with other participating local governments and landowners, the individual goals of the County of Orange are set forth in *Part I, Chapter 2, Section 2.2.3.a*. County goals 1-7 are reviewed in previous subsections above. Goal 8 is reviewed in *Chapter 13* and will be further reviewed in the NCCP/MSAA/HCP EIR/EIS. Goal 9 is reviewed in *Part I, Chapters 8 and 9*. Goal 10, involving analysis of social and economic implications, is reviewed in subsequent sections of this Appendix and in the NCCP/MSAA/HCP EIR/EIS; the technical implications of mitigation measures are reviewed in *Part I, Chapters 7 and 13* and of conservation alternatives are reviewed throughout this Appendix. Goal 11 is reviewed in *Part I, Chapter 12*, throughout this Appendix and in the NCCP/MSAA/HCP EIR/EIS. Goal 12 is reviewed in *Part I, Chapter 12*. Goal 13 has been reviewed in *Part I, Chapter 13*. Mitigation for potential impacts of the Prima Deshecha landfill expansion also includes a very significant role in the funding and management of the Invasive Species Control Plan (*Appendix J*) within San Juan Creek (see *Part I, Chapter 7*). At present, no additional County recreational facilities are contemplated within existing County Parks within the planning area. With regard to Goal 14, *Part I, Chapter 5* provides the Watershed and Sub-Basin Planning Principles that apply at both the broader watershed scale and at the sub-watershed scale and which serve as the basis for assessing the consistency of all Alternatives as reviewed in this Appendix and in *Part I, Chapter 8*.

1.6.2 Rancho Mission Viejo

Unlike the other 'B' Alternatives that have been formulated, in part, to address a substantial portion of the housing needs identified in OCP 2000 in furtherance of SCAG jobs/housing balance growth management goals and associated transportation/air quality objectives (*i.e.*, B-5, B-6, B-10M and B-12), the B-8 Alternative would allow considerably smaller development acreage, with a corresponding reduction in housing units.

For the reasons set forth in this Section, the B-8 Alternative cannot feasibly provide for the assembly of the Habitat Reserve on RMV lands or provide adequate funding for implementation of the AMP. Since these elements of the Conservation Strategy are essential to the approval of the NCCP/MSAA/HCP, the B-8 Alternative would not provide the basis for regulatory assurances critical to RMV's goals articulated in NCCP/MSAA/HCP *Part I, Chapter 2*.

1.6.3 Santa Margarita Water District

The SMWD will require authorization for construction of new facilities and operation and maintenance of future and existing facilities, as described in detail in *Part I, Chapter 10, Section 10.1.3*. SMWD facilities construction, operations and maintenance were not addressed in the general Alternatives analyses in NCCP/MSAA/HCP *Chapters 8 and 9* or this Appendix because conceptual infrastructure facilities designs, other than the circulation system, were not generated for all of the Alternatives. However, because the SMWD existing and future facilities, operations and maintenance will be Covered Activities under the "SMWD Proposed Project" they will be analyzed in *Part I, Chapter 13*.

1.6.4 Prima Deshecha Landfill

The reader is directed to *Part I, Chapter 10, Section 10.1.a.1* for a discussion of the Prima Deshecha Landfill project. The Landfill project applies equally to all the 'B' Alternatives.

SECTION 2.0 ALTERNATIVE B-10M

SECTION 2. OVERVIEW OF THE B-10M ALTERNATIVE (FIGURE 131-M)

2.1.1 Overview of Major Landscape and Habitat Reserve Planning Features of the Proposed Habitat Reserve on RMV Property

a. Major Landscape Features

Alternative B-10M was formulated by the County of Orange in significant part to provide a non-acquisition alternative to the B-9 Alternative in the GPA/ZC EIR. The B-10M provides limited development areas addressing housing needs and other related County objectives within areas identified for acquisition under the B-9, while being responsive to the sub-basin recommendations contained in the Draft Southern Planning Guidelines and Draft Watershed Planning Principles, particularly for the Chiquita, Cristianitos and Gabino sub-basins. In formulating the B-10M Alternative, the County used the same basic approach as the B-9 Alternative, but attempted to provide for more balanced development/protection that would allow the B-10M Open Space to be assembled solely through development dedications. This approach would address the uncertainties in the B-9 Alternative regarding concerns with relying on public acquisition for a significant portion of the proposed Habitat Reserve on RMV lands, including the availability of public or non-profit funds and the need to reach agreement on an acquisition with RMV.

The following are significant landscape features of the B-10M Alternative:

- Within the San Juan Creek Watershed:
 - Protection of Chiquita Creek for its entire length and the entirety of Chiquita Ridge west of the creek;
 - Protection of substantial contiguous habitat located south of San Juan Creek that would provide connectivity between the western portion of the planning area and Chiquita Canyon and San Juan Creek;
 - Protection of the Gobernadora Creek floodplain from San Juan Creek north to the point where it exits the Coto de Caza planned community;
 - Provision of extensive habitat connectivity from Upper and Middle Chiquita Canyon across Sulphur Canyon/Chiquadora Ridge through the Gobernadora Creek floodplain, across Upper Gobernadora through a 2,000 to 2,500 feet wide wildlife movement corridor to the Caspers Wilderness Park portion of the proposed Habitat Reserve;
 - Protection of the mesa area west of Trampas Canyon and south of San Juan Creek (*i.e.*, the Radio Tower Road area) supporting vernal pool and grasslands species, including Riverside and San Diego fairy shrimp, while also serving as a major north-south connectivity corridor;
 - Protection of all of the San Juan Creek 100-year floodplain within the RMV property; and
 - Protection of all of the mainstem creek and associated drainage within Verdugo Canyon.

- Within the San Mateo Creek Watershed:
 - Protection of all of the Gabino Canyon sub-basin, with the exception of ten 2-acre estate lot in upper Gabino Canyon west of the creek and the development area proposed within the Blind Canyon subunit;
 - Protection of all of the La Paz Canyon sub-basin on RMV property;
 - Protection of most of the Cristianitos Creek sub-basin, with limited development in upper Cristianitos, including a golf course; and
 - Protection of the lower Cristianitos Creek floodplain and the Talega Creek floodplain to the RMV property line.

A major feature of the B-10M Alternative is the use of a Planning Reserve designation in three significant areas on RMV lands (*Figure 157-M*). The following is the description of the Planning Reserve designation taken from the Ranch Plan GPA/ZC EIR:

The Planning Reserve designation covers certain areas containing sensitive natural resources that would not be proposed for development until later phases of the project

and/or until specified pre-conditions to development have been satisfied. Three distinct Planning Reserve areas have been identified for the B-10M Alternative: (1) Planning Reserve A – the northern portion of Planning Area 2 (Chiquita); (2) Planning Reserve B – the entirety of Planning Areas 6 and 7 (Cristianitos); and Planning Reserve C – Planning Area 8.

. . . . The precise footprint of development within each Planning Reserve would be identified as part of the more detailed planning efforts to be carried out in the future and would consider the guidelines and principles applicable to those areas.

[for purposes of the analysis of the land uses allowable under the B-10M with the Draft Southern Planning Guidelines and Draft Watershed Planning Principles, the NCCP/MSAA/HCP uses the same maximum development acreage, density/intensity of development and development bubble locations employed in the Ranch Plan GPA EIR] (Ranch Plan GPA/ZC draft EIR, p. 5-72)

Each of these three Planning Reserve Areas includes Habitat Reserve areas, development areas and open space areas associated with development. The Ranch Plan GPA/ZC EIR further described the Planning Reserve designation as follows:

Conditions of approval/mitigation measures (including provisions of any AMP) that are imposed on the project in conjunction with General Plan amendment and zone change approvals would be applicable to the Planning Reserve areas only at such times as these areas were to receive subsequent development entitlements (i.e., entitlements in addition to General Plan amendment and zone change approvals).

Applications for subsequent development entitlements (i.e., Master Area Plans) within the Planning Reserve areas would be allowed to be submitted according to the following schedules:

Chiquita Canyon (PA 2, Planning Reserve A): (i) 5 years after approval of the Ranch Plan GPA/ZC, (ii) NTP2 (Notice to proceed phase 2) by TCA for SR 241 (FTC-South) based on a Record of Decision, or (iii) until alternate access is available, whichever occurs first;

Cristianitos Canyon (PA 7, Planning Reserve B): (i) 5 years following approval of RMV Plan GPA/ZC, (ii) NTP2 (Notice to proceed phase 2) by TCA for SR 241 (FTC-South) based on a Record of Decision, or (iii) until alternate access is available, whichever occurs first;

Northrop Grumman (PA 8, Planning Reserve C): (i) upon termination of the Northrop Grumman lease, (ii) NTP2 (Notice to proceed phase 2) by TCA for SR 241 (FTC-South) based on a Record of Decision, or (iii) until alternate access is available, whichever occurs first.

Any future plan for development proposed within the Planning Reserve areas would be required to incorporate, and would be evaluated for consistency with, the guidelines and principles (including planning, management and restoration recommendations) that are applicable to the specific area(s) proposed for development and/or conservation. . . .

As with the Ranch Plan [the former B-4 Alternative], it is intended that the plans for development and conservation under this alternative be complementary to any NCCP/HCP and/or any SAMP/MSAA programs [now NCCP/MSAA/HCP and SAMP] covering the project site that are completed in the future. Therefore, at such times as an NCCP/HCP and/or SAMP/MSAA were to be finally approved, any mitigation programs applicable to the project site (including any Planning Reserve areas that have received subsequent development entitlements) would be adapted for inclusion as part of that NCCP/HCP and or SAMP/MSAA.

*In any event, as with the applicant's proposed project [*i.e.*, the Ranch Plan GPA] and other development alternatives, any required federal and state permits (including those needed to allow take of listed species, or to authorize impacts on jurisdictional waters and/or streambeds) would need to be obtained prior to the commencement of development activities within the affected area, including the Planning Reserve areas.” (Ranch Plan GPA/ZC draft EIR, at pp. 5-72 to 5-73; bracketed underlined text is intended to provide clarification)*

The primary differences between B-10M and the B-9 Habitat Reserve designs are development that would be allowed in two of the areas identified as Planning Reserve:

- Middle Chiquita – includes limited development above the treatment plant in an area proposed for acquisition under the B-9;
- Upper Cristianitos/PA 6 – Two small development areas (totaling 61 acres) are provided west of the creek in an area likely to be an acquisition area under the B-9; and
- Upper Cristianitos/PA 7 – A golf course is located in PA 7 on the east side of upper Cristianitos Creek. Additionally, approximately 250 acres of development are provided for under a low density approach in PA 7.

b. Significant Reserve Design and Land Use Elements of the B-10M Alternative

The following are significant land use elements of the B-10M Alternative on RMV lands:

- 15,140 acres (66 percent) of RMV land would be committed open space/Habitat Reserve through a series of phased dedications of conservation easements.
- The proposed designation of 15,140 acres of RMV land as protected open space would be a central element of the overall open space system that would total about 45,010 acres, comprising 49 percent of lands within the subregion, but not including 40,000 acres of CNF.
- Proposed development areas total 7,680 acres which includes all golf course acreages.
- In order to improve habitat functions in extensive areas south of San Juan Creek and to provide access to proposed development areas, this Alternative proposes a shift in the function of portions of Ortega Highway from a major highway to a local road in conjunction with the proposed construction of a new arterial road and a crossover of San Juan Creek to connect the PA 4 development area with proposed development areas north of San Juan Creek.
- New development opportunities are the same as those described for the B-9 Alternative except as noted in the reserve design and land use elements overview presented in the immediately preceding subsection.

c. Reserve Design Features

The B-10M Alternative open space would create four large blocks of habitat that are both connected with one another and with other large scale protected habitat areas:

- The eastern and northern portions of the proposed Open Space connect with other previously protected open space areas to comprise a large contiguous habitat block containing 21,870 acres encompassing portions of both the San Mateo Creek and San Juan Creek Watersheds and extending westward to include that portion of the San Juan Creek corridor located between the East Ortega and Trampas development areas (*Figure 158-M*);
- A 3,230-acre block of habitat within the Chiquita sub-basin extending from the Upper Chiquita Canyon conservation easement area in the northern portion of the sub-basin to San Juan Creek and connecting with the Riley Wilderness Park, through Sulphur Canyon to Gobernadora Creek and to Caspers Wilderness Park via an open space corridor at the northern edge of the proposed Gobernadora/Central San Juan development area;
- A 4,250-acre block of habitat starting at San Juan Creek and extending through the Radio Tower Road area to the immediate west of the Trampas development area; and

- A 1,830-acre block of habitat in Arroyo Trabuco, connecting with the Chiquita Canyon habitat block through Habitat Linkage B and extending to the FTSPA to the north and to the CNF to the east.

SECTION 2.2 CONSISTENCY ANALYSIS OF THE B-10M ALTERNATIVE APPLYING LANDSCAPE GUIDELINES AND PRINCIPLES IN RELATION TO THE PURPOSES AND GOALS OF THE PLANNING PARTICIPANT

2.2.1 Subregional NCCP Program – Purposes and Goals

Natural Communities Planning and Take Authorization. The central purpose of the Planning Participants is to undertake natural communities-based planning for the major habitat systems found in the County of Orange Southern NCCP/HCP Subregion in a manner that would further the statutory purposes of the NCCP Act Fish and Game Code Section 1600 *et seq* and FESA and meet the requirements of the Special Rule for the coastal California gnatcatcher, including the NCCP Conservation Guidelines, and, in so doing, provide the basis for authorizing Incidental Take of designated Covered Species (including both listed and unlisted species) pursuant to the NCCP/MSAA/HCP.

Consistency Review: Formulate an NCCP/HCP “Conservation Strategy” to carry out the SRP and Science Advisors conservation planning principles and tenets of reserve design.

The four primary programmatic elements that comprise a subregional NCCP/HCP Conservation Strategy are:

- Creation of a Habitat Reserve
- Formulation of a Habit Reserve Management Program
- Regulatory coverage for Designated Species
- Implementation Agreement and Funding

The manner and the extent to which the B-10M Alternative addresses the above four elements of the Conservation Strategy are reviewed in the following subsections.

a. Conservation Strategy Element One: *Creation of a Habitat Reserve*

The Habitat Reserve design proposed pursuant to the B-10M Alternative is assessed for consistency with three sets of landscape level planning principles set forth below: **(1)** consistency with the SRP/Science Advisors Tenets of Reserve Design; **(2)** consistency with the SAMP Tenets; and **(3)** consistency with the Baseline Conditions Watershed Planning Principles.

1. B-10M Alternative - Consistency with the SRP/Science Advisors Tenets of Reserve Design

SRP Tenet 1: Conserve Target Species throughout the Planning Area.

A total of 28 planning species was used as planning “surrogates” for reserve design and evaluation. For the listed planning species, Alternative B-10M has medium to very high consistency with the Draft Southern Planning Guidelines (see discussion of planning species and consistency analysis in *Part I, Chapter 8, Table 8-3*). B-10M protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo, and southwestern willow flycatcher (see descriptions in *Part I, Chapter 8, Table 8-3*). For the arroyo toad, all *key locations* of breeding habitat would be protected, as would all adjacent upland foraging and estivation habitat, with the exception of suitable habitat north of San Juan Creek associated with the Gobernadora development area (PA 3), and all sources of coarse sediment important for maintaining suitable breeding habitat, including Verdugo Canyon. For the gnatcatcher, overall protection would be 79 percent of locations and 81 percent of coastal sage scrub habitat, including 87 percent of locations and 89 percent of coastal sage scrub in the Chiquita Canyon/ Chiquadora Ridge *major population/key location*. For the vireo and flycatcher, *important populations* in GERA would be conserved. For brodiaea 73 percent of locations and 97 percent of flowering-stalks would be protected, including the *major population/key locations* on Chiquadora Ridge and in Lower Cristianitos/Lower Gabino Canyon. For both the San Diego and Riverside fairy shrimp, only one of two vernal pool areas along Radio Tower Road would be protected, but *Part I, Chapter 8* identifies measures that would protect the second vernal pool area.

B-10M provides medium to very high protection for the unlisted planning species (see discussion of planning species and consistency analysis in *Part I, Chapter 8, Table 8-3*). *Major* and/or *important populations* were identified for grasshopper sparrow, tricolored blackbird, yellow warbler, yellow-breasted chat, western spadefoot toad, orange-throated whiptail, San Diego horned lizard, southwestern pond turtle, Coulter’s saltbush, many-stemmed dudleya, Salt Spring checkerbloom, and southern tarplant. As summarized in *Part I, Chapter 8, Table 8-3*, moderate to very high protection would be provided for *key locations* of all of these species, with overall conservation ranging from 63 percent protection of populations of grasshopper sparrow to 99 percent protection of Coulter’s saltbush. For the tricolored blackbird, about 50 percent of recent and historic nesting sites and adjacent uplands would be protected, including the valley bottom of Gobernadora near the boundary with Coto de Caza, the area south of a ranch residence south of Ortega Highway and the historic “Riverside Cement” colony in lower Cristianitos and Gabino canyons.

Unlisted planning species for which *major/important populations* in *key locations* were not identified are cactus wren, Cooper’s hawk, golden eagle, merlin, white-tailed kite, mountain lion and mule deer. For the cactus wren, Cooper’s hawk, and white-tailed kite, 78 percent of cactus

wren locations, 84 percent of historic nest sites for the Cooper's hawk, and 83 percent of historic nest sites for the kite, as well as more than 81 percent of suitable habitat for the three species, would be protected under the B-10M Alternative. For the golden eagle and merlin approximately 73 percent of foraging habitat would be protected and both species likely would persist in the subregion. Under B-10M, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

SRP Tenet 2: Larger reserves are better.

The B-10M Alternative is comprised of four major habitat blocks: the Eastern block (21,870 acres), the Upper Chiquita block (3,210 acres), the Lower Chiquita block (4,250 acres), and the Arroyo Trabuco block (1,830 acres). These habitat blocks combined total about 31,160 acres and account for about 69 percent of the B-10M Alternative open space. The Eastern block connects to substantial uninterrupted open space to the east in the CNF and Camp Pendleton.

SRP Tenet 3: Keep reserve areas close. Link reserves with corridors.

Important habitat linkages and wildlife corridors are described in the Draft NCCP Guidelines. All four of the large habitat blocks described above are functionally interconnected. The only areas where habitat areas linking the four habitat blocks narrow to less than 2,000 feet in width are the following linkages:

- Linkage between Ladera Ranch and Las Flores which has existing development on both sides of the linkage area;
- The linkage along Chiquadora Ridge (linkage G) where the connectivity area just above the mouth of Gobernadora Creek in the "ox-bow" area has been the subject of wildlife agencies comment – further review of this area under wetlands avoidance would be warranted;
- Linkage J along San Juan Creek between the Gobernadora development bubble and Trampas Canyon has a varying dimension including a 300-foot development setback on both sides from the San Juan Creek 100-year floodplain that in some areas is less than 2,000 feet. With regard to linkage J, it is important to assess the adequacy of this Linkage in terms of: **(1)** dimensions of the San Juan Creek floodplain and the scale of the proposed 300-foot setback area when added to the size of the existing floodplain (*i.e.*, adding a total lateral dimension of 600 feet to the scale of the existing 100-year floodplain); **(2)** other conditions affecting aquatic species such as the arroyo toad with regard to live-in, habitat linkage functions; and **(3)** other conditions affecting aquatic, small and large mammal and avian species movement along the San Juan Creek corridor. These issues are summarized below:
 - At its narrowest, the distance between Planning Area 3 and Planning Area 4 is about 350 feet. North and south of the narrowest point, the distance between planning areas increases up to approximately 1,300 feet within the key

location for the arroyo toad population. An additional 300 feet of setback on both sides of the creek from the 100-year floodplain would make the narrowest movement corridor approximately 1,000 feet wide.

- Other conditions affecting habitat linkage functions for aquatic species. For most aquatic riparian species, the 100-year floodplain defines the area providing live-in, habitat linkage functions. According to the prior critical habitat designation for the arroyo toad (which has been incorporated by reference into the new proposed critical habitat designation):

The width of the upland component of critical habitat varies based on topography. The habitat widens in broad alluvial valleys and narrows in places where streams run through constricted canyons or between surrounding hills.

(Federal Register 66, 2/7/01, 9420)

Although the upland habitat use patterns of this species are poorly understood, activity probably is concentrated in the alluvial flats (areas created when sediments from the stream are deposited) and sandy terraces found in valley bottoms of currently active drainages (Service 1999, Griffin et al. 1999, Sweet in litt. 1999, Ramirez 2000, Holland and Sisk 2000).

(Ib. 9415)

Thus, in broad alluvial valleys such as the San Juan Creek streamcourse, arroyo toad “activity probably is concentrated in alluvial flats . . . and sandy terraces found in valley bottoms of currently active drainages,” as confirmed in a recent study of San Juan Creek arroyo toad movement (Ramirez 2003). Almost all locations of yellow warblers and yellow-breasted chats are found within these areas of San Juan Creek. For these species, not only is the additional 600 feet (total) of setback from the 100-year floodplain significant, but also the invasive species control program is vital. As shown in the Invasives Species Control Plan (Appendix J), extensive areas of the San Juan Creek streamcourse are presently characterized by large-scale infestations of giant reed (arundo) and other non-native species. As a consequence, both water-supply for arroyo toad breeding and riparian vegetation important to aquatic/ riparian species has been and is being displaced both as a result of the presence and continuing expansion of giant reed vegetation, and as a result of the tremendous water consumption demands of giant reed. Implementation of the Invasive Species Control Plan is essential to enhancing and restoring live-in

and foraging habitat for all aquatic/riparian species found within the San Juan Creek floodplain.

- Other conditions affecting aquatic, small and large mammal and avian species movement along the San Juan Creek corridor. In terms of wildlife movement and arroyo toad lateral foraging and estivation, the southern side of San Juan Creek is currently impacted by Ortega Highway and attendant noise and road kill impacts; the B-10M Alternative proposal to relocate the Ortega Highway functions to the north side of the Creek would eliminate a very extensive barrier to movement by species and thereby significantly reduce species mortality caused by moving vehicles. Beier provides some general recommendations of corridor widths in relation to length to accommodate mountain lion movement. For corridors of 1-7 kilometers in length (3,280 feet to 4.3 miles) Beier recommends a minimum 400 meter (1,312 feet) wide corridor. Under the B-10M Alternative, linkage J along San Juan Creek is approximately 1,000 to 1,100 feet wide at its narrowest sections with 300-foot setbacks from PA 3 and PA 4. The final EIR for the GPA/ZC reviews the manner in which mountain lion movement and other mammal movement will be protected through bridge designs and the 300-foot setbacks on both sides of the 100-year floodplain. Avian species such as the gnatcatcher move along corridors with riparian and other vegetation as well as habitat such as coastal sage scrub (see the discussion in the proposed new critical habitat designation for the gnatcatcher – 68 Federal Register, 20229, 4/24/03).

For the above reasons, it is concluded that the dimensions of linkage J along San Juan Creek are generally adequate for habitat linkage and wildlife movement functions, and thus are consistent with the NCCP landscape level and sub-basin guidelines. Although there are some short sections that do not achieve the 1,300 feet wide recommendations of Beier for the mountain lion, these recommendations are not absolutes and some narrowing of sections are acceptable as long as they are relatively short, and/or if topography and vegetative cover provide additional protection for lions.

- Linkage K between the Trampas development area and the Talega development (which is equally constrained under all Alternatives) would narrow to about 600 and 700 feet in width in two locations over a distance of about 2,500 linear feet. Typical widths in this segment of linkage K are about 1,000 feet.
- Linkage N includes a golf course east of Cristianitos Creek adjacent to the estates development bubble in PA 7 and two small development areas (61 acres) that could constrain the linkage – the distance between PA 4 and the larger of the two small development areas is 1,200 feet and the distance between the two small development

areas is 1,550 feet; since the development areas are located outside the gnatcatcher *key location* and there is ample connectivity to the San Juan Creek Watershed, both avian and mammal movement would not appear to be impeded. The Donna O'Neill Land Conservancy comprises protected open space to the west of upper Cristianitos Creek and the golf course east of the Creek would be expected to provide for connectivity features comparable to those required in the Section 7 consultation for the Arroyo Trabuco Golf Course project, thereby assuring connectivity through this area for avian species and both large and small mammals. Connectivity from linkage J to linkage N is assured by the 6,150 feet of open space between PA 4 and PA 5 and would be enhanced by the reduced traffic on Ortega Highway resulting from the new arterial road and crossover on the north side of San Juan Creek.

Overall, Alternative B-10M is highly consistent with General Policy 3 of the Draft Southern Planning Guidelines.

SRP Tenet 4: Keep habitat contiguous.

This tenet primarily refers to avoiding and minimizing fragmentation within habitat blocks and maintaining habitat continuity within habitat blocks. Habitat and land cover types within the four habitat blocks described above under Tenet 2 are presented in *Table 5*. As shown in *Table 5*, the vast majority of the four habitat blocks that would be protected in the B-10M Open Space are comprised of the five major vegetation communities: coastal sage scrub, chaparral, grassland, woodland and forest, and riparian, although the relative proportions of the vegetation communities vary among the blocks. Grassland, agriculture and coastal sage scrub are the largest components of the Upper and Lower Chiquita habitat blocks at 81 and 86 percent, respectively, while chaparral is a predominant component of the Eastern block.

The four habitat blocks exhibit relatively little internal habitat fragmentation; *i.e.*, existing development or disturbance that disrupts the habitat contiguity of the blocks. As shown in *Table 5*, existing developed and disturbed land uses within the habitat blocks comprise relatively small percentages of the blocks, ranging from about 5 percent of the Arroyo Trabuco and Upper Chiquita blocks to 1 percent of the Eastern block. As would be expected from the existing pattern of urbanization in the planning area, internal fragmentation decreases from west to east, with the highest percentage of development and disturbed land uses in the Arroyo Trabuco and Upper Chiquita blocks and the lowest percentage in the Eastern block.

In comparison with the B-8 Alternative, habitat contiguity is constrained in the following areas:

- Middle Chiquita – Connectivity between Chiquita Canyon and Chiquadora Ridge is reduced due to estate development above the treatment plant but the low density nature of the development does allow for likely gnatcatcher persistence in smaller

patches of coastal sage scrub connected with larger areas. Overall connectivity through the area between Tesoro High School and the estate development area is substantial and provides for a substantial block of habitat in the Upper Chiquita block (3,209 acres)

- Cristianitos Sub-Basin – Two relatively small development areas are proposed in areas west of the creek (61 acres) and areas east of the creek up on the high ridge (approximately acres plus a golf course on the eastern side of Cristianitos Creek). Since the B-10M Alternative proposes development in this area, habitat contiguity would be reduced. However, the development areas are very small relative to the size of the overall habitat block (21,867 acres), with the larger of the two development areas high up on a ridge away from the main canyon habitat linkage areas (golf course connectivity issues are addressed under Tenet 3).

**TABLE 5
MAJOR VEGETATION COMMUNITIES WITHIN
THE B-10M ALTERNATIVE HABITAT BLOCKS**

| Vegetation Community/Land Type | Cover | Habitat Block Acres ¹ | | | | | | |
|--|-------|----------------------------------|-------------------|--------------|-------------------|--------------|---------------|--------------|
| | | Arroyo Trabuco | Upper Chiquita | | Lower Chiquita | | Eastern | |
| | | Total | Total | RMV | Total | RMV | Total | RMV |
| Coastal Sage Scrub | | 313 | 1,469 | 437 | 1,217 | 774 | 10,298 | 3,576 |
| Chaparral | | 121 | 146 | 30 | 140 | 94 | 4,775 | 2,309 |
| Grassland | | 514 | 250 | 34 | 2,075 | 907 | 3,097 | 1,588 |
| Woodland & Forest | | 141 | 62 | 17 | 24 | 24 | 958 | 116 |
| Riparian | | 613 | 215 | 72 | 265 | 230 | 2,442 | 875 |
| Other Habitats/Land Covers | | 30 | 907 ² | 439 | 429 ² | 368 | 41 | 28 |
| Developed/Disturbed (% of Total in Block) | | 100 (5%) | 160 (5%) | 103 (9%) | 95 (2%) | 65 (3%) | 256 (1%) | 117 (1%) |
| Total in Block | | 1,832 | 3,209 | 1,132 | 4,245 | 2,462 | 21,867 | 8,609 |

¹ Acreages for open space do not include infrastructure impacts; therefore the table only provides relative contributions of the vegetation communities within the habitat blocks, not absolute values.

² Agriculture accounts for 876 acres of Other Habitats/Land Covers in the Upper Chiquita block and 381 acres in the Lower Chiquita block. Most of this agriculture is cultivated barley fields that provide habitat value similar to grassland for species such as grasshopper sparrow and foraging raptors.

Source: Dudek 2004

SRP Tenet 5: Reserves should be biologically diverse.

Table 6 shows the amount and percentage of the major vegetation communities protected in the B-10M Alternative, both in the overall B-10M Alternative and broken down by watersheds. Overall, the B-10M protects the large majority of the major vegetation communities. Protection ranges from a low of 67 percent for grassland to a high of 82 percent for woodland and forest and riparian. Other than grassland, the next lowest overall conservation percentage of the major vegetation communities is 76 percent for chaparral.

In contrast to Alternatives B-8 and B-12 Alternatives, B-10M provides for substantial development in the San Mateo Watershed, with proposed development in Cristianitos Canyon and on the Blind Canyon mesa/Northrop Grumman ridge. As a result, habitat protection percentages between the San Juan and San Mateo watersheds are relatively balanced for coastal sage scrub and grassland. For example, 80 percent of coastal sage scrub in the San Juan Watershed is protected compared to 85 percent in the San Mateo Watershed. Likewise, for grassland protection is 70 percent in the San Juan Watershed and 71 percent in the San Mateo Watershed. On the other hand, the protection of riparian is substantially higher in the San Mateo Watershed, with 93 percent protection versus 80 percent in the San Juan Watershed. Similarly, 94 percent of chaparral is protected in the San Mateo Watershed compared to 69 percent in the San Juan Watershed, due in large part to the predominance of chaparral in the East Ortega development planning area.

These relationships also are illustrated by the “% of Vegetation Community” and “% Deviation from Planning Area” columns in *Table 6*. The balanced protection of coastal sage scrub is illustrated by the 0 and 1 percent deviations, respectively, from existing conditions in the San Juan and San Mateo watersheds. For example, 77 percent of the total coastal sage scrub in both the planning area and Cumulative Open Space occurs in the San Juan Watershed. In contrast, 62 percent of chaparral in the planning area is in the San Juan Watershed, but only 56 percent of chaparral in the B-10M Alternative is in the San Juan, an under-representation of 6 percent. Again, this discrepancy reflects the large amount of chaparral in the East Ortega development planning area, as well as substantial chaparral in the FTSPA. Overall, however, with the exception of chaparral, and to a lesser extent grasslands and riparian, the B-10M Alternative exhibits relatively balanced protection of habitat in the two main watersheds. As with the other alternatives, the protection of major vegetation communities in the San Clemente and Aliso Hydrological areas is substantially less than the San Juan and San Mateo watersheds, reflecting the existing urban character of these smaller watersheds.

TABLE 6
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES
IN THE B-10M ALTERNATIVE WITHIN WATERSHEDS

| Vegetation Community | Planning Area | | Cumulative Open Space | | | |
|-------------------------------|-----------------------|---------------------------|-----------------------|--------------|---------------------------|--------------------------------|
| | Planning Area (Acres) | % of Vegetation Community | Open Space Acres | % Open Space | % of Vegetation Community | % Deviation from Planning Area |
| Coastal Sage Scrub | 20,985 | | 16,822 | 80% | | |
| San Juan Watershed | 16,166 | 77% | 12,963 | 80% | 77% | 0% |
| San Mateo Watershed | 3,851 | 18% | 3,260 | 85% | 19% | 1% |
| Other Watersheds ¹ | 969 | 5% | 599 | 62% | 4% | -1% |
| Chaparral | 8,454 | | 6,456 | 76% | | |
| San Juan Watershed | 5,243 | 62% | 3,592 | 69% | 56% | -6% |
| San Mateo Watershed | 2,791 | 33% | 2,613 | 94% | 40% | 7% |
| Other Watersheds ¹ | 420 | 5% | 251 | 60% | 4% | -1% |
| Grassland | 15,371 | | 10,254 | 67% | | |
| San Juan Watershed | 8,428 | 55% | 5,863 | 70% | 57% | 2% |
| San Mateo Watershed | 3,121 | 20% | 2,206 | 71% | 22% | 2% |
| Other Watersheds ¹ | 3,823 | 25% | 2,185 | 57% | 21% | -4% |
| Woodland and Forest | 2,016 | | 1,646 | 82% | | |
| San Juan Watershed | 1,703 | 84% | 1,397 | 82% | 85% | 1% |
| San Mateo Watershed | 257 | 13% | 209 | 81% | 13% | 0% |
| Other Watersheds ¹ | 56 | 3% | 40 | 71% | 2% | 1% |
| Riparian | 5,629 | | 4,609 | 82% | | |
| San Juan Watershed | 4,362 | 77% | 3,498 | 80% | 76% | -1% |
| San Mateo Watershed | 1,035 | 18% | 958 | 93% | 21% | 3% |
| Other Watersheds ¹ | 231 | 4% | 153 | 66% | 3% | -1% |

¹ Other Watersheds include the San Clemente, Aliso and Santiago Hydrological Areas

Table 7 compares the representation of the major vegetation communities in the B-10M Alternative with their representation in the planning area in relation to the combined major vegetation communities. The B-10M Alternative exhibits relatively modest deviations from existing conditions both overall and within watersheds. Coastal sage scrub is over-represented by 2 percent in the B-10M Alternative compared to grassland, which is under-represented by 3 percent overall. The other major vegetation communities are represented in the B-10M Alternative in essentially the same proportion as they occur in the planning area.

TABLE 7
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES
UNDER THE B-10M ALTERNATIVE

| Vegetation Community | Planning Area | | Cumulative Open Space | | | |
|-------------------------------|-----------------------|--------------------|-----------------------|--------------|-----------------------|--------------------------------|
| | Planning Area (Acres) | % of Planning Area | Open Space Acres | % Open Space | % of Total Open Space | % Deviation from Planning Area |
| Coastal Sage Scrub | 20,985 | 40% | 16,822 | 80% | 42% | 2% |
| San Juan Watershed | 16,166 | 31% | 12,963 | 80% | 33% | 2% |
| San Mateo Watershed | 3,851 | 7% | 3,260 | 85% | 8% | 1% |
| Other Watersheds ¹ | 969 | 2% | 599 | 62% | 2% | 0% |
| Chaparral | 8,454 | 16% | 6,456 | 76% | 16% | 0% |
| San Juan Watershed | 5,243 | 10% | 3,592 | 69% | 9% | -1% |
| San Mateo Watershed | 2,791 | 5% | 2,613 | 94% | 7% | 2% |
| Other Watersheds ¹ | 420 | 1% | 251 | 60% | 4% | 3% |
| Grassland | 15,371 | 29% | 10,254 | 67% | 26% | -3% |
| San Juan Watershed | 8,428 | 16% | 5,863 | 70% | 15% | -1% |
| San Mateo Watershed | 3,121 | 6% | 2,206 | 71% | 6% | 0% |
| Other Watersheds ¹ | 3,823 | 7% | 2,185 | 57% | 5% | -2% |
| Woodland and Forest | 2,016 | 4% | 1,646 | 82% | 4% | 0% |
| San Juan Watershed | 1,703 | 3% | 1,397 | 82% | 4% | 1% |
| San Mateo Watershed | 257 | 0.5% | 209 | 81% | 1% | 0% |
| Other Watersheds ¹ | 56 | 0.1% | 40 | 71% | 0% | 0% |
| Riparian | 5,629 | 11% | 4,609 | 82% | 12% | 1% |
| San Juan Watershed | 4,362 | 8% | 3,498 | 80% | 9% | 1% |
| San Mateo Watershed | 1,035 | 2% | 958 | 93% | 2% | 0% |
| Other Watersheds ¹ | 231 | 0.4% | 153 | 66% | 0.4% | 0% |

¹ Other Watersheds include the San Clemente, Aliso and Santiago Hydrological Areas

Table 8 compares the elevational distribution of the major vegetation communities in the planning area and the B-10M Alternative. As with the other alternatives, the protection percentages generally increase with elevation for all the major vegetation communities, with slight declines above 1,200 feet for coastal sage scrub, chaparral and riparian. A comparison of the “% Within Vegetation Community” columns for the planning area and B-10M Alternative shows that the elevational distributions of the vegetation communities in the B-10M Alternative generally track the existing distributions in the planning area, but with a modest bias toward under-representations of the upland vegetation communities at less than 800 feet. For example, coastal sage scrub is under-represented by 4 percent under 800 feet, over-represented by 4 percent at 800-1,200 feet, and under-represented above 1,200 feet by 1 percent. As with the other alternatives, the protection of riparian vegetation shows relatively little elevational bias, with a slight over-representation of 1 percent at 400-800 feet and under-representation of 1

percent over 1,200 feet. Grassland is under-represented at the lowest elevation range (<400 ft), with 4 percent less in Cumulative Open Space (22 percent) compared to existing conditions (26 percent).

**TABLE 8
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE
B-10M ALTERNATIVE COMPARED TO PLANNING AREA**

| Vegetation Community | Elevation Range (ft) | Planning Area | | Cumulative Open Space | | | |
|----------------------|----------------------|-----------------------|-------------------------------|-----------------------|--------------|-------------------------------|--------------------------------|
| | | Planning Area (Acres) | % Within Vegetation Community | Open Space Acres | % Open Space | % Within Vegetation Community | % Deviation from Planning Area |
| Coastal Sage Scrub | 0-400 | 1,414 | 7% | 876 | 62% | 5% | -2% |
| | 401-800 | 9,826 | 47% | 7,622 | 78% | 45% | -2% |
| | 801-1,200 | 6,928 | 33% | 6,246 | 90% | 37% | 4% |
| | >1,200 | 2,817 | 13% | 2,078 | 74% | 12% | -1% |
| Total Acres | | 20,985 | | 16,822 | | | |
| Chaparral | 0-400 | 166 | 2% | 80 | 48% | 1% | -1% |
| | 401-800 | 4,640 | 55% | 3,526 | 76% | 55% | 0% |
| | 801-1,200 | 2,158 | 26% | 1,925 | 89% | 30% | 4% |
| | >1,200 | 1,489 | 18% | 925 | 62% | 14% | -4% |
| Total Acres | | 8,453 | | 6,456 | | | |
| Grassland | 0-400 | 4,005 | 26% | 2,258 | 56% | 22% | -4% |
| | 401-800 | 8,122 | 53% | 5,608 | 69% | 55% | 2% |
| | 801-1,200 | 2,699 | 18% | 2,015 | 75% | 20% | 2% |
| | >1,200 | 545 | 4% | 374 | 69% | 4% | 0% |
| Total Acres | | 15,371 | | 10,255 | | | |
| Woodland and Forest | 0-400 | 174 | 9% | 111 | 64% | 7% | -2% |
| | 401-800 | 1,005 | 50% | 790 | 79% | 48% | -2% |
| | 801-1,200 | 619 | 31% | 561 | 91% | 34% | 3% |
| | >1,200 | 217 | 11% | 182 | 84% | 11% | 0% |
| Total Acres | | 2,015 | | 1,644 | | | |
| Riparian | 0-400 | 1,289 | 23% | 1,081 | 84% | 23% | 0% |
| | 401-800 | 3,088 | 55% | 2,593 | 84% | 56% | 1% |
| | 801-1,200 | 846 | 15% | 673 | 80% | 15% | 0% |
| | >1,200 | 407 | 7% | 263 | 65% | 6% | -1% |

SRP Tenet 6: Protect reserves from encroachment

In general, blocks of habitat that are roadless or otherwise serve to minimize human access better serve species than accessible habitat blocks. The B-10M proposed circulation system compliance with Draft Southern Planning Guidelines General Policy 4 (roads and infrastructure to be located outside the Open Space to the maximum extent feasible) is reviewed in the sub-basin consistency analysis in *Part I, Chapter 8*. Protection of long-term, indirect

effects/encroachment (*i.e.*, fuel management zones, exotic species, harmful chemicals, lighting, human and pet access), would be assured by compliance with Draft Southern Planning Guidelines, General Policy 5 requirements.

Watershed Planning Principles/Southern Science Advisors Tenet 7 – Terrains/Hydrology.

From a terrains perspective, emphasis has been placed on protecting sources of coarse sediment important to maintaining the function of stream-associated habitats for species such as the arroyo toad; these areas include Verdugo Canyon, middle Gabino Canyon and La Paz Canyon (the latter a source of cobbles); overall, the B-10M Alternative protects all of the important sources of coarse sediments on RMV lands except a small side canyon adjacent to Verdugo Canyon within the Verdugo Canyon sub-basin. Also, from a terrains perspective, development would avoid the alluvial side canyons in middle Chiquita and has been located on ridges above Chiquita Canyon and in “hard-pan” of the Gobernadora sub-basin) in order to protect the geomorphology of the creek systems and the surface and groundwater flows essential to perennial flow in Chiquita Creek and Gobernadora Creek. Within the San Mateo Watershed, development would be focused in significant part on areas of clay soils on Blind Canyon Mesa and on the Northrop Grumman ridge where potential sources of fine sediments detrimental to aquatic habitats can be eliminated.

From a hydrologic perspective, development has been located away from all major streams and has been located on ridges with hard-pan soils and clay soils where existing runoff patterns characterized by high runoff rates can be more effectively emulated (*e.g.* lower Chiquita, Gobernadora, Blind Canyon Mesa and the Northrop Grumman Ridge, although some development would occur in smaller side canyons in the Gobernadora sub-basin). In the case of Gobernadora Creek, proposed development areas have been located away from the valley floor above the knickpoint in order to allow for the potential restoration of the stream meander and other measures proposed in the riparian component of the Habitat Restoration Plan (*Appendix H*) and away from the Sulphur Canyon tributary to the creek system. Implementation of the Invasive Species Control Plan (*Appendix J*) in San Juan Creek would significantly enhance streamcourse hydrology while the control of invasive plants, particularly tamarisk and pampas grass in the San Mateo Creek Watershed would maintain and protect aquatic habitats both within the planning area and in downstream reaches.

One potential issue for the B-10M Alternative from a terrains/hydrology perspective is that of assuring the funding necessary to carry out important soils remediation work in areas with currently eroding clayey soils in Upper Gabino Canyon. Since these areas are characterized by clay soils, any potential inability to fund soils remediation in the aforementioned areas could result in continued and possibly increasing generation of fine sediments with deleterious effects on aquatic species and associated habitats.

2. B-10M Alternative Consistency with SAMP Tenets

SAMP Tenet 1: No Net Loss of Acreage and Functions of Waters of the U.S./Waters of the State

The B-10M Alternative has been designed to protect the major riparian/wetlands systems. Specifically, land uses associated with the B-10M Alternative (*i.e.*, residential, commercial) would avoid direct impacts to all mainstem creeks other than those associated with infrastructure (*e.g.*, road crossings, drainage outfalls).

With regard to net acreage of Waters of the U.S./Waters of the State, the B-10M Alternative would need to provide mitigation in the form of new restoration/creation of wetlands acreage equal to the loss of 9.1 acres of wetlands and 31.9 non-wetlands waters due to development. Potential mitigation for these impacts to maintain acreage and function in the locations noted in the SAMP Tenet 1 analysis for Alternative B-8 is reviewed in the Aquatic Resources Restoration Plan (Appendix F2).

Approximately 110 acres of CDFG riparian habitat would be affected by this alternative that would be addressed through the NCCP/MSAA/HCP.

The B-10M Alternative is consistent with this tenet.

SAMP Tenet 2: Maintain/Restore Riparian Ecosystem Integrity

With its focus on protecting (as noted above) and, where feasible and beneficial, restoring as compensatory mitigation each of the major canyon systems as well as mainstem creeks, the B-10M Alternative addresses this tenet.

SAMP Tenet 3: Protect Headwaters

Each of the mainstem headwaters areas not already urbanized or otherwise altered as a result of resource extraction or agricultural activities would be protected and/or restored, with the exception of a limited area in the headwaters area of the Cristianitos Sub-basin. The ten estate lots proposed to be located in the Gabino Sub-basin would not impact the headwaters. The headwaters area of Trampas Creek is proposed for development, but this area is has been significantly altered by existing mining operations. Impacts to tributaries in the Gobernadora Sub-basin would occur under this alternative.

With the exception of impacts to a small portion of the headwaters of Cristianitos Creek and impacts to minor tributaries of Gobernadora Creek, the B-10M Alternative is consistent with this tenet.

SAMP Tenet 4: Maintain/Protect/Restore Riparian Corridors

All major riparian corridors would be protected including Chiquita, Gobernadora, San Juan (with a possible exception as explained below), Verdugo, Cristianitos (with a possible exception as explained below), Talega, La Paz, and Gabino Creeks. Regarding San Juan Creek, the B-10M Alternative would provide for 300 foot setbacks in Planning Areas 3 and 4. However, these setbacks do not achieve the 1,312-foot-wide (400 meter) recommendations of Beier for large mammal (*e.g.*, mountain lion) movement. Regarding Cristianitos Creek, while development in Planning Area 6 would be limited, the aquatic species movement corridors in this area may not be sufficient to support the movement (over long time periods) of less mobile species aquatic species such as the arroyo toad from the San Juan Creek Watershed to the San Mateo Creek Watershed.

With the exceptions noted for portions of San Juan Creek and a portion of Cristianitos Creek, the B-10M Alternative is consistent with this tenet.

SAMP Tenet 5: Maintain/and or/Restore Floodplain Connection

The B-10M Alternative would maintain all existing areas of floodplain connection. The B-10M Alternative would provide for the recommended restoration of the meander in Gobernadora Creek, thereby helping restore historic floodplain connection. Where longer term terrains/hydrology processes are responsible for areas with existing loss of floodplain connection (*e.g.*, Chiquita Canyon at the “Narrows” and lower Gobernadora Creek below the knickpoint), the B-10M Alternative does not propose any actions that would be contrary to such processes. The B-10M Alternative is consistent with this tenet.

SAMP Tenet 6: Maintain and/or Restore Sediment Sources and Transport Equilibrium

The B-10M Alternative would: (a) protect all of the major sources of coarse sediment in order to assure the continued generation and transport of such sediments important for riparian/wetlands habitat systems (see Watershed Planning Principles consistency analyses), and (b) focus development on areas generating fine sediments in order to reduce the runoff of fine sediments that can cause deleterious impacts on riparian/wetlands habitats and associated species (see also the discussion in the Watershed Planning Principles consistency analysis). The B-10M Alternative is consistent with all of the vegetation restoration recommendations for areas with clay soils, including Sulphur Canyon, Upper Cristianitos Canyon, and Upper Gabino Canyon.

SAMP Tenet 7: Maintain Adequate Buffer for the Protection of Riparian Corridors

Under the B-10M Alternative, most major riparian corridors would be adequately buffered from development. Major riparian corridors within the RMV Planning Area can be defined as Chiquita Creek, Gobernadora Creek, San Juan Creek, Verdugo Creek, Cristianitos Creek, Gabino Creek, La Paz Creek, and Talega Creek and would be protected in the following manner:

- Development in Planning Area 2 below the SMWD wastewater treatment plant would be set back a minimum of 350 feet to over 750 feet from Chiquita Creek. Above the wastewater treatment plant, development would be focused on ridge tops away from the creek. The golf course proposed for Planning Area 2 would have a setback ranging from a minimum of 50 feet to over 200 feet from Chiquita Creek.
- Development in Planning Area 3 would have a setback ranging from 180 to 1,000 feet from Gobernadora Creek which is confined to the western edge of the sub-basin below the knickpoint. A 300-foot-wide setback from the 100-year floodplain of San Juan Creek would buffer Planning Area 3 on the South and Planning Area 4 on the north/west from San Juan Creek. As noted above, this setback would not meet the recommendations by Beier for mountain lion movement along San Juan Creek.
- Verdugo Canyon would not be directly impacted by the proposed Planning Area 4 development thereby protecting the Verdugo Creek riparian corridor and its associated coarse sediments.
- No development is proposed in the La Paz Sub-basin under Alternative B-10M; therefore, La Paz Creek would be protected.
- The ten estate lots proposed in the Gabino Sub-basin would be located over 1,000 feet from the western edge of Gabino Creek, and no development is proposed on the east side of Gabino Creek. Therefore, Gabino Creek would be protected.
- Cristianitos Creek would be buffered through the implementation of minimization measures which call for a minimum setback of 200 feet from the creek and an average setback of 500 feet for the proposed golf course. The golf course would provide a further buffer between residential uses and Cristianitos Creek. As noted above, development in Planning Area 6 may impact, on a long-term basis, watershed-to-watershed connectivity for less mobile aquatic species.
- Development in the Talega sub-basin is centered on the current Northrop Grumman test site above the Talega Creek riparian corridor. On the southwestern edge of Planning Area 8 to the

southern middle of Planning Area 8, the setback from Talega Creek for development would range from 1,000 to 1,650 feet to the creek and 80 to 280 feet above the creek. From the southern middle of Planning Area 8 to the southeastern edge of Planning Area 8, the setback range for development would be 1,875 to 3,350 feet from the creek with an elevation range of 280 to 500 feet above the creek.

With the exceptions noted for portions of San Juan Creek and a portion of Cristianitos Creek, the B-10M Alternative is consistent with this tenet.

SAMP Tenet 8: Protect Riparian Areas and Associated Habitats of Listed and Sensitive Species

As reviewed above for SAMP Tenet 1, regarding listed species, other planning and sensitive species associated with aquatic/riparian habitats (arroyo toad, least Bell's vireo, southwestern willow flycatcher, Cooper's hawk, tricolored blackbird, white-tailed kite, yellow warbler, yellow-breasted chat, western spadefoot toad and southwestern pond turtle), the B-10M Alternative would protect these species within the proposed permanent open space associated with this alternative.

Conclusion

On an overall basis, the B-10M Alternative is consistent with the SAMP Tenets with the two noted exceptions: (1) the dimension of the San Juan Creek wildlife movement corridor and (2) potential headwaters/wildlife movement impacts in Planning Area 6. Therefore, except for the two noted exceptions, the B-10M Alternative is consistent with the SAMP Tenets. This alternative is not expected to result in significant impacts.

3. B-10M Consistency with Baseline Conditions Watershed Planning Principles

As reviewed in the Overview of the B-10M Alternative, the B-10M is the same as the B-12 Alternative except for three areas: (1) a small estates area in Middle Chiquita (PA 2); (2) a small estates area in PA 6, and (3) a relatively small estates area in PA 7. For all areas identical with B-12, the Consistency with Baseline Conditions Watershed Planning Principles analysis under B-12 is equally applicable and the reader is directed to *Section 3.2.1.a.3* for the detailed discussion under the B-12 Alternative. The three areas with additional development are addressed as follows:

- Middle Chiquita – This area is identical with that portion of PA 2 examined under the draft WQMP review of the B-4 Alternative and thus the WQMP B-4 analyses for this area apply.
- PA 6 – This development area is smaller than that reviewed under the B-4 Alternative but is in the same development area and thus the B-4 analyses apply.
- PA 7 – The proposed golf course is in a different location along upper Cristianitos Creek but the analyses for the B-4 PA 6 golf course (the B-4 was addressed in the WQMP prior to the B-4 being withdrawn from further consideration through the GPA/ZC action by the County) in the draft WQMP apply equally (same soils, water quality issues, etc.). The development in PA 7 is a smaller area than under B-4 but is within the overall development envelope and thus the WQMP B-4 analyses would apply but with likely much less need for diverting stormwater flows to lower Gabino due to the much less intense, low density estates element of development.

The three development area differences between the B-12 and B-10M Alternatives summarized above involve very limited development in clay soils. Because the B-10M relationship to sandy and crystalline terrains is identical with that of the B-12 Alternative, Alternative B-10M avoids the sandy and crystalline terrains that protect significant sources of coarse sediments. Further, each significant source of coarse sediments (the sandy terrains in Chiquita and Gobernadora sub-basins and the crystalline terrains in Verdugo Canyon, middle Gabino, and La Paz Canyon) is treated in such a way that sediment transport and storage processes between hillslopes, tributaries, sub-basin channels, and mainstem creeks are maintained in their current balance by means of protecting physical contiguity in these areas and through avoidance of structures that would impede sediment movement in tributaries and in mainstem creeks.

Chapter 4 of the WQMP presents flow management strategies addressing the sub-basin principles directed toward maintaining the geomorphic characteristics of streambeds. An extensive discussion of sediment types and processes important to aquatic habitat systems is set forth in "Geomorphology Factors," esp. at pp. 12-14, and following analyses at pp. 13-32 and pp. 36-39).

b. Conservation Strategy Element Two: *Habitat Reserve Management Program*

Regarding Habitat Reserve Management, the second element of an NCCP Conservation Strategy, Alternative B-10M is consistent with and helps carry out the Invasive Species Control Plan (*Appendix J*) and is consistent with all of the habitat restoration plans set forth in the Appendices to the *Part I, Chapter 7* AMP, with the exception of impacts on some VGL areas (in

addition to precluding native grassland restoration on Blind Canyon Mesa, as is possibly the case with the B-12, there is the potential for minor conflict with the native grassland restoration program in Upper Cristianitos).

With regard to soils stabilization actions in Cristianitos Canyon, stabilization of the clay pits in Cristianitos Canyon generally can be undertaken in conjunction with development. As reviewed in the B-12 analysis, the costs of soils stabilization in Upper Gabino are likely to be substantial and only limited development is proposed in Upper Gabino to serve as a vehicle for absorbing such costs in development site preparation. However, given the more extensive development areas under B-10M (providing greater land value) as contrasted with B-8, the B-10M Alternative would likely provide a sufficient funding base for Upper Gabino landform restoration/stabilization.

c. Conservation Strategy Element Three: *Regulatory Coverage for Designated Species*

Species proposed for regulatory coverage under the B-10M are reviewed in *Part I, Chapter 13*

d. Conservation Strategy Element Four: *Implementation Agreement and Funding*

The fourth element of an NCCP Conservation Strategy is the IA which includes provisions for funding. With regard to the ability of the B-10M Alternative to assure the assemblage of the Habitat Reserve on RMV lands, the B-10M was formulated by the County of Orange for purposes of providing a variation of the B-12 Alternative that would not rely on public acquisition to assemble the Habitat Reserve. With regard to funding for the AMP, Alternative B-10M proposes funding through annual homeowner and commercial/office development fees in a manner comparable to the other 'B' Alternatives. With the anticipated residential units and office/commercial development the B-10M Alternative appears capable of providing AMP funding.

SECTION 2.3 SUMMARY OF MAJOR CONSERVATION STRATEGY ISSUES RAISED IN THE PART I, CHAPTER 8 SUB-BASIN CONSISTENCY REVIEWS AND PART I, CHAPTER 9 LANDSCAPE-SCALE CONSISTENCY REVIEW FOR THE B-10M ALTERNATIVE**2.3.1 Consistency with both Landscape Level and Sub-Basin Guidelines/Principles**

On an overall basis, the B-10M Alternative Habitat Reserve meets landscape-scale NCCP and SAMP guidelines and principles, with the possible exception of the potential fragmentation caused by the two small development areas in PA 6 (Cristianitos Meadows) and the combined golf course/estate development in PA 7 (Cristianitos Canyon). In contrast with the development proposed for PA 6 under the former B-4 Alternative rejected by Orange County during the GPA/ZC process, the B-10M development areas in PA 6 have been sited to avoid the gnatcatcher *key location* and to allow substantial wildlife movement areas between the two small development areas, thus functionally connecting the San Juan Creek and San Mateo Creek Watersheds. Development proposed for PA 7 would be in an area where no development is proposed under the B-9 Alternative; however, the consistency review under the SRP/Science Advisors Tenets of Reserve Design and Baseline Conditions Watershed Planning Principles indicates a high level of consistency. Further, the B-10M Alternative provides for high levels of consistency with the guidelines and principles reviewed in *Part I, Chapter 8*. For instance, development proposed in PA 7 would not only stabilize existing erosion areas but would also eliminate sources of fine sediments by locating development in areas with clay soils, a major source of fine sediments detrimental to aquatic habitat conditions. Overall, major guidelines/principles consistency is achieved with respect to the protection of planning species, major vegetation communities, habitat blocks, connectivity, species diversity, significant hydrologic and geomorphic processes and water quality.

2.3.2 Economic Feasibility of Assembling the Habitat Reserve Areas on RMV Lands

The B-10M Alternative provides for assembling Habitat Reserve areas on RMV lands without any need for public or non-profit acquisition funding. The County's concerns with reliance on public acquisition funding for a significant portion of the Habitat Reserve under B-9 and other Alternatives led it to formulate an Alternative, the B-10M (Modified), in an effort to provide an Alternative that could both serve as a bridge to any future acquisition agreements and could be carried out in a manner consistent with statutory requirements if agreement could not be reached on a public acquisition program. The County outlined its goals in formulating the B-10M Alternative in the EIR for the GPA/ZC and summarized these goals as follows in the Response to Comments:

Alternative B-10M was formulated by the County of Orange in significant part to provide a second, non-acquisition alternative to the Proposed Project [i.e., the Ranch Plan under the B-4 Alternative] that addresses housing needs and other related project objectives, while being responsive to the sub-basin recommendations contained in the draft Southern Planning Guidelines and Watershed Principles, particularly for the Chiquita, Cristianitos and Gabino sub-basins. In formulating the B-10M Alternative, the County used the same basic approach as the B-9 Alternative, but attempted to provide for more balanced development/protection that would allow the B-10M Open Space to be assembled solely through development dedications. This approach would address the uncertainties in the B-9 Alternative regarding concerns with relying on public acquisition for a significant portion of the proposed open space, including the availability of public funds and the need to reach agreement on an acquisition with RMV. As formulated, the B-10M Alternative presents a second non-acquisition alternative that could be implemented entirely through landowner dedications in phase with development.

In addition to a significant effort to try to fashion land use/Habitat Reserve configurations responsive to the sub-basin and landscape scale guidelines and principles for the proposed acquisition areas, as reviewed in *Part I, Chapter 10* the County formulated a “Planning Reserve” designation (reviewed above) for areas that are coterminous with areas proposed for acquisition under the B-9 Alternative, Planning Area 2 (middle Chiquita above the treatment plant) and Planning Areas 6 and 7 (Cristianitos/Gabino sub-basins) both reflecting the sensitive resource concerns associated with them and as a potential land use planning “bridge” between the GPA/ZC and any future agreements between the private landowner and potential funding entities regarding a voluntary acquisition program (see *Figure 157-M*). The County further placed the “Planning Reserve” designation over Planning Area 8 (Talega sub-basin) in part to allow for additional acquisition opportunities.

The County’s Findings for adoption of the final EIR for the GPA/ZC state:

The Alternative B-10M Planning Reserve designation provides for assuring consistency with any future NCCP and/or SAMP plans. Additionally, the timing provisions for each of the Planning Reserve areas should provide opportunities for further discussions of potential acquisition between the landowner (should the landowner be willing) and interested parties in conjunction with the NCCP and SAMP processes.

(emphasis added)

Importantly, the land uses proposed in PAs 2, 6 and 7 under the B-10M Alternative that differ from the B-9 or other Alternatives requiring public acquisition of Ranch lands essentially function as “underlying land uses” that could provide for economic uses consistent with the

Southern sub-basin guidelines and principles in the event that any agreed upon acquisition options are not exercised following the approval of the NCCP/MSAA/HCP.

Open space proposed as a part of this Alternative in conjunction with previously committed open space areas located within the Southern NCCP/HCP planning area would substantially meet the provisions of the landscape-level reserve design tenets, SAMP tenets and Baseline Conditions Watershed Planning Principles, as well as sub-basin and watershed-scale guidelines and principles, for the design of a subregional Habitat Reserve. With regard to the HRMP, the B-10M Alternative allows for development areas that would provide the economic basis for full funding of the overall management program set forth in *Part I, Chapter 7*.

2.3.3 Long-Term Habitat Management

Regarding the overall HRMP, including the AMP, Alternative B-10M generally is consistent with and helps carry out the comprehensive Invasive Species Control Plan (*Appendix J*). Alternative B-10M protects the coastal sage scrub restoration areas in Chiquita Canyon. Within the Gobernadora sub-basin, Sulphur Canyon and associated coastal sage scrub restoration areas are protected. Importantly, Alternative B-10M is consistent with the restoration proposed for Gobernadora Creek as reviewed in the AMP. Native grassland restoration and enhancement areas proposed in the draft Southern Planning Guidelines for Narrow Canyon within the Chiquita sub-basin and Upper Cristianitos Canyon are protected. However, as in the case of the B-12, native grassland restoration areas proposed for Blind Canyon Mesa would likely be largely precluded by development. The B-10M Habitat Reserve design is consistent with the CSS/VGL restoration/enhancement areas identified in Upper Gabino Canyon. Alternative B-10M is consistent with the Wildland Fire Management Plan (*Appendix N*) component of the AMP and also is consistent with the Grazing Management Plan (*Appendix G*), which, although not a formal component of, is consistent with the AMP. Finally, funding provided through the AMP is sufficient to assist with selected adaptive management actions within County parklands as reviewed in *Part I, Chapter 7*.

2.3.4 Conclusions Regarding Consistency with Subregional Conservation Planning Goals and Objectives

The Alternative B-10M proposed Habitat Reserve design and HRMP generally meet the draft Southern Planning Guidelines and Watershed Planning Principles as applied at both the sub-basin and landscape scale. Overall, the B-10M:

- Protects the Chiquita Canyon portion of the Chiquita sub-basin;
- Provides for major restoration within the Gobernadora sub-basin;

- Supports a very substantial portion of a *major population/key location* and other *important populations/key locations* of the coastal California gnatcatcher consistent with the Southern Guidelines in areas considered to be vital to sustaining gnatcatcher populations within the sub-region and to further recovery;
- Protects the *key locations* of the thread-leaved brodiaea;
- Provides for very limited development within the San Mateo Creek Watershed, thereby creating a large block of Habitat Reserve on the eastern boundary of the study area that connects with Casper's Wilderness Park, the San Mateo Wilderness, the CNF and Camp Pendleton;
- Provides funding for and carries out the major elements of the *Part I, Chapter 4* management and restoration recommendations and the *Part I, Chapter 7* HRMP; and
- Places particular emphasis on protecting habitat linkages/wildlife movement corridor I in Gobernadora and M in upper Gabino/Verdugo Canyon.

Although providing somewhat more development than the B-12 Alternative, the B-10M Alternative is generally consistent with the sub-basin and landscape-scale Draft Southern Planning Guidelines and Draft Watershed Planning Principles. Taken together, the open space would protect a very large block of habitat containing sensitive species and providing connectivity with large-scale protected habitat areas in close proximity to these lands.

SECTION 2.4 CONSISTENCY WITH OTHER PLANNING PARTICIPANT GOALS AND PURPOSES

This section reviews only those specific purposes that relate to analysis of the Conservation Strategy.

- 1. In formulating the Habitat Reserve, Habitat Reserve Management Program and Regulatory Coverage elements of the Conservation Strategy, provide for coordination with the SAMP Program for the planning area in order to maximize consistency between the NCCP/MSAA/HCP and SAMP programs.**

All of the Alternatives selected for review in the NCCP/MSAA/HCP and associated environmental documents have been prepared/analyzed for further consideration in cooperation with the USACE. The Watershed Principles contain the USACE SAMP tenets, as well as maps and summaries of the WES functional analyses. Sub-Basin Planning Considerations and Planning Recommendations have been formulated through a collaborative planning effort (see Introduction to the Watershed Principles in *Part I, Chapter 5, Section 5.1.1*). Importantly, many of the Protection Recommendations set forth in the Draft Southern Planning Guidelines in *Part I, Chapter 4* address aquatic and riparian habitats and species, all of which are central to the SAMP/MSAA program. *Part I, Chapter 8* of the NCCP/HCP/MSAA reviews the consistency of

the proposed Conservation Strategy with respect to both the Draft Southern Planning Guidelines and the Draft Watershed and Sub-Basin Principles, including the extent to which each of the Habitat Reserve Alternatives is consistent with the Guidelines and Principles. The proposed Habitat Reserve under Alternative B-10M thus would achieve the goal of formulating a reserve design that integrates the NCCP reserve with a SAMP Aquatic Resources Conservation Program in one Habitat Reserve for both the NCCP/MSAA/HCP and SAMP.

Part I, Chapter 7 of the NCCP/MSAA/HCP describes and reviews the proposed AMP. Preparation of the elements of the AMP has been coordinated with the USACE as well as the other planning participants. Restoration recommendations prepared by WES as part of the SAMP process have been reviewed and, where practicable, have been integrated with the NCCP sub-basin management and restoration recommendations. Specific elements of the proposed AMP including enhancement/restoration of coastal sage scrub and grasslands would reduce sediment generation and improve stormwater infiltration, consistent with SAMP watershed protection goals. The proposed Wildland Fire Management Plan (*Appendix N*) and the Grazing Management Plan (*Appendix G*), which is consistent with the AMP, are directed toward the long-term health of plant species and toward the reduction of fire-induced sediment generation, both of which goals will benefit watershed processes.

Importantly, a comprehensive WQMP has been applied to Alternative B-10M (see *Appendix K*). The WQMP addresses SDRWQCB NPDES requirements including the County of Orange MS4 permit program, aquatic species protection standards, USACE 404(b)(1) water quality guidelines and Clean Water Act 401 requirements. Alternative B-10M would incorporate this water quality program as a required program element for RMV development areas under the NCCP/MSAA/HCP IA. Thus, the goal of integrating Clean Water Act (SAMP), Porter-Cologne Act (state NPDES and non-point source plan requirements) and NCCP/MSAA/HCP water quality considerations would be attained.

Comprehensive review of compliance with the purpose, goals and objectives of the SAMP will be conducted as part of the EIS review of the program proposed for the SAMP planning area. However, to the extent reviewed in this Chapter, the formulation of the Habitat Reserve as proposed in Alternative B-10M and the AMP reviewed in *Part I, Chapter 7* have been fully coordinated with the SAMP planning program and have addressed the Purpose and Objectives of the SAMP as presented in *Part I, Chapter 2*.

- 2. In formulating the NCCP/MSAA/HCP Habitat Reserve and Habitat Reserve Management Program elements of the final Conservation Strategy, provide for coordination with the County General Plan Amendment/Zone Change process for RMV lands and other planning programs potentially impacting the planning area.**

All of the ‘B’ Alternatives developed through the coordinated planning process were included in and fully reviewed as part of the CEQA process for the RMV GPA/ZC; the County prepared two additional alternatives, the B-10M and the B-11 to further reflect County NCCP/MSAA/HCP and housing goals. Alternative B-10M has been coordinated with the County GPA/ZC process and was selected as the County preferred alternative in conjunction with the County’s EIR review for the proposed Ranch Plan GPA/ZC. Transportation and other infrastructure facilities required to support land uses proposed in Alternative B-10M have been identified pursuant to the County GPA/ZC process so that the potential impacts of these infrastructure facilities can be reviewed as part of this NCCP/MSAA/HCP and associated EIR/EIS (see *Part I, Chapter 8*).

Although not included as a Covered Activity for purposes of Take authorization for listed species, the proposed FTC-S is part of the County MPAH and potential impacts of alignments proposed for the FTC-S on the alternative Habitat Reserve designs, including the B-10M Alternative, are reviewed pursuant to the NCCP/MSAA/HCP EIR/EIS. Given the multiple alignments under consideration for the FTC-S, the impacts/mitigation review will not be undertaken as part of this analysis but will instead be carried out under the NCCP/MSAA/HCP EIR /EIS review

- 3. In formulating the Habitat Reserve Management Program element of the final Conservation Strategy and undertaking coordinated land use planning, assure the preparation of a comprehensive water quality management program which, to the maximum extent feasible, integrates a program addressing species and habitat systems water quality considerations, requirements of the SWRCB and the SDRWQCB and the USACE/EPA 404(b)(1) water quality guidelines.**

As reviewed above under the consistency review for the Baseline Conditions Watershed Planning Principles, a comprehensive water quality management element has been prepared based on the B-4 and B-9 Alternatives. All of the development areas proposed under the B-10M Habitat Reserve design/development areas designation are included in either the B-4 or the B-9 Alternatives reviewed in the WQMP. Since the WQMP would be implemented entirely outside the Habitat Reserve, the WQMP has not been included as a formal element of the *Part I, Chapter 7 AMP*. However, because the WQMP will be adaptively managed over time in order to protect resources within the Habitat Reserve and areas downstream of the Habitat Reserve (see WQMP

Chapter 6), the WQMP is considered to be consistent with the goal of an integrated water quality management element that is adaptively managed for the benefit of the Habitat Reserve (see discussion in *Part I, Chapter 7*).

As reviewed above, the WQMP presents an analysis employing the County and SDRWQCB concepts of “pollutants of concern” and “hydrologic conditions of concern” to provide a framework for addressing NCCP/MSAA/HCP species/habitat concerns (including Tenet 7 of the Southern Science Advisors tenets of reserve design), the SDRWQCB NPDES and 401 requirements and the USACE/EPA 404(b) water quality guidelines. To the extent that the B-10M Alternative has the same development areas as the Ranch Plan reviewed under the B-4 Alternative, the B-4 WQMP would cover those areas. Separate assessments and associated management proposals have been prepared for those development areas, or portions of development areas, under B-9 that differ from the B-4 Alternative (*i.e.*, lower Chiquita, East Ortega and Northrop Grumman/Blind Canyon) using the methodologies established under the B-4 analysis which are applicable to the comparable development areas under the B-10M Alternative.

SECTION 2.5 CONSISTENCY WITH THE COLLECTIVE PURPOSES OF THE PARTICIPATING LANDOWNERS

2.5.1 Governments/Landowners

- a. Provide for social and economic needs by identifying development areas consistent with the NCCP Conservation Strategy and in accordance with the requirements of the NCCP Act and FESA.**

As previously discussed, RMV and the County identified a series of objectives for the Ranch Plan project that respond, in relevant part, to the community’s desire and need to achieve specific social and economic goals. Notably, the objectives established for the Ranch Plan include the development of an economically viable mix of land uses which address (i) local housing needs, (ii) jobs/housing balance, (iii) transportation and circulation demands, (iv) recreational opportunities and (v) preservation of resources (ala agricultural, mineral, cultural and historic). Analysis of Alternative B-10M in the context of achieving these social and economic goals/objectives manifests the following:

1. Local Housing Needs – Alternative B-10M contemplates development of up to 14,000 dwelling units (including 6,000 senior units). This figure is consistent with the project’s growth management objective of 14,000 units, which goal is within the target range of 20,468 residential units identified in OCP 2000M and the Orange County Growth Management Element. Accordingly, implementation of Alternative

- B-10M would be consistent with the County's growth management goals for the project area.
2. Jobs/Housing Balance – Alternative B-10M contemplates development of 251 acres of urban activity center uses (with approximately 3.48 million square feet of useable area), 80 acres of business park (with approximately 1.22 million square feet of useable area), 50 acres of neighborhood center (with approximately 500,000 square feet of useable area) and a golf course with a 25-acre resort component. This development activity is anticipated to generate new job opportunities at a level consistent with the project's employment goals (*i.e.*, approximately 16,509 new jobs). Assuming development of 14,000 dwelling units and full employment within the project area, Alternative B-10M would produce a jobs/housing ratio of approximately 1.18 (a figure which is considered "in balance" for purposes of SCAG projections for the southern Orange County area). Accordingly, implementation of Alternative B-10M would be consistent with the County's jobs/housing balance and employment creation goals for the southern Orange County area.
 3. Transportation and Circulation – Circulation plans developed for Alternative B-10M conceptualize a highway and roadway network that could accommodate local and regional traffic in a manner consistent with (or otherwise amenable to) existing and planned transportation strategies/plans established for South Orange County (*see, e.g.*, Orange County Master Plan of Arterial Highways [MPAH]). Furthermore, implementation of Alternative B-10M would be conditioned, presumably, upon compliance with all County transportation programs and mandatory mitigation of any proximately caused traffic impacts (*e.g.*, intersection service deficiencies). Under these assumptions, Alternative B-10M would satisfy the project's transportation and circulation goals.
 4. Recreation – Alternative B-10M would not provide for the development of any new regional parks, or the expansion or improvement of any existing regional parks. However, in accordance with the mandates of the Quimby Act, it is presumed that new local parklands would be established within the Alternative B-10M project area. Furthermore, it is presumed that implementation of Alternative B-10M would provide for the development of trails, bikeways and other recreational amenities as a condition of project approval and consistent with County policies. Thus, Alternative B-10M would appear to satisfy the project's recreational goals and objectives.
 5. Resource Preservation – Implementation of Alternative B-10M would impact certain archaeological and paleontological resources located upon the project site. However, studies indicate that these cultural and paleontological impacts could be mitigated to a

less than significant level in a manner consistent with the project's resource preservation goals. Furthermore, and as originally designed, implementation of Alternative B-10M would allow for the continuation of agricultural activities over a portion of the project area, and would allow for the continuation of mineral extraction/use for a period of years following commencement of the project. Notwithstanding, mineral extraction would be prohibited after the occurrence of certain development events (*e.g.*, completion of project phases located adjacent to mining areas). Such prohibitions would frustrate the project's goal of extracting and utilizing on-site mineral resources during the development process.

b. Identify development areas that will serve as the economic basis for Habitat Reserve dedications and long-term management funding.

Alternative B-10M provides for development areas that create the economic basis for dedications essential to the formation of the Habitat Reserve. With regard to formation of the Habitat Reserve, Alternative B-10M provides an economic basis for a series of phased dedications that would ultimately commit 100 percent of the land areas identified for the Habitat Reserve.

With respect to providing an economic basis for long-term funding of the AMP, Alternative B-10M provides housing and other uses that will serve as a vehicle for funding ongoing management activities in the Habitat Reserve

SECTION 2.6 CONSISTENCY WITH THE INDIVIDUAL PURPOSES OF THE PARTICIPATING LANDOWNERS

2.6.1 County of Orange

As with other participating local governments and landowners, the individual goals of the County of Orange are set forth in *Part I, Chapter 2, Section 2.2.3.a*. County goals 1-7 are reviewed in previous subsections above. Goal 8 is reviewed in *Part I, Chapter 13* and will be further reviewed in the NCCP/MSAA/HCP EIR/EIS. Goal 9 is reviewed in *Part I, Chapters 8 and 9*. Goal 10, involving analysis of social and economic implications, is reviewed in subsequent sections of this Appendix and in the NCCP/MSAA/HCP EIR/EIS; the technical implications of mitigation measures are reviewed in *Part I, Chapters 7 and 13* and of conservation alternatives are reviewed throughout this Appendix. Goal 11 is reviewed in *Part I, Chapter 12*, throughout this Appendix and in the NCCP/MSAA/HCP EIR/EIS. Goal 12 is reviewed in this Appendix. Mitigation for potential impacts of the Prima Deshecha landfill expansion also includes a very significant role in the funding and management of the Invasive Species Control Plan within San Juan Creek (see *Part I, Chapter 7*). At present, no additional

County recreational facilities are contemplated within existing County Parks within the planning area.

2.6.2 Rancho Mission Viejo

As in the case of the B-5, B-6, B-9 and B-12 Alternatives, Alternative B-10M has been formulated, in part, to address a substantial portion of the housing needs identified in OCP 2000 in furtherance of SCAG jobs/housing balance growth management goals and associated transportation/air quality objectives.

For the reasons set forth in this Section, the B-10M Alternative is capable of fulfilling the habitat, aquatic resource and watershed protection goals of the Southern NCCP/MSAA/HCP and the San Juan Creek and San Mateo Creek SAMP, as well as the water quality protection goals of the State of California Nonpoint Source Pollution Control Program and applicable requirements of the San Diego RWQCB,

Another important RMV goal is to obtain the regulatory assurances that serve as a central element of establishing land uses essential to the financial return necessary for the landowner to offset the level of risk inherent in long-term master-plan development. Given the scale of the proposed development areas, it is likely that buildout would occur over an approximately 20 year basis. Infrastructure expenditures would be made on the basis of total allowable development and thus involve inherent risk. The B-10M Land Use Plan adopted as part of the County GPA/ZC concurrent review provides a wide-range of housing opportunities, both to address societal needs and to allow RMV to respond to changing market conditions.

Another RMV assurances goal is to obtain certainty for land uses providing sufficient investment opportunities to serve as the basis for the commitment of land and financial resources necessary for the large-scale protection of natural resources within the planning area. This goal reflects the need to have adequate investment opportunities to provide for long-term resource protection through the creation of a Habitat Reserve and associated management funding. Long-term habitat protection will be provided for, in part, through a series of phased dedications of conservation easements over lands committed to the Habitat Reserve. The phasing of dedications would be in keeping with “rough proportionality” legal standards and is essential to also providing a degree of assurance for the private landowner.

2.6.3 Santa Margarita Water District

The SMWD will require authorization for construction of new facilities and operation and maintenance of future and existing facilities, as described in detail in *Part I, Chapter 10, Section 10.1.3*. SMWD facilities construction, operations and maintenance were not addressed in the

general Alternatives analyses in *Part I, Chapters 8 and 9* or this Appendix because conceptual infrastructure facilities designs, other than the circulation system, were not generated for all of the Alternatives. However, because the SMWD existing and future facilities, operations and maintenance will be Covered Activities under the "SMWD Proposed Project" they are analyzed in *Part I, Chapter 13*.

2.6.4 Prima Deshecha Landfill

The reader is directed to *Part I, Chapter 10, Section 10.1.a.1* for a discussion of the Prima Deshecha Landfill project. The Landfill project applies equally to all the 'B' Alternatives.

2.6.5 The Transportation Corridor Agencies

The implications of the proposed alignments for the FTC-S for the NCCP/MSAA/HCP are reviewed in the NCCP/MSAA/HCP EIR/EIS. The extent to which each of the proposed alignments is or is not consistent with the Alternative B-10M Habitat Reserve is reviewed in the EIR/EIS. Due to the complexity of the analysis, the reader is referred to that document.

SECTION 3.0 ALTERNATIVE B-12

SECTION 3.1 OVERVIEW OF THE B-12 ALTERNATIVE (*FIGURE 133-M*)

3.1.1 Overview of Major Landscape and Habitat Reserve Planning Features of the Proposed Habitat Reserve on RMV Property

a. Major Landscape Features

Alternative B-12 is one of the four Alternatives that were prepared after completion of the Draft Southern Planning Guidelines and Draft Watershed Planning Principles. B-12 is designed to address the sub-basin level guidelines and principles. Alternative B-12 responded to the ongoing discussions with the Wildlife Agencies relating to their Habitat Reserve design concerns with the B-9 Alternative. It also responded to parallel discussions and subsequent negotiations involving RMV landowners and public interest organizations that focused on Habitat Reserve design issues. These landowner/public interest group negotiations culminated in a Settlement Agreement entered into on August 16, 2005 between RMV landowners, the County and the following resource organizations: Sierra Club; Endangered Habitats League; Natural Resources Defense Council, Inc.; Sea and Sage Audubon Society; and Laguna Greenbelt, Inc. The resulting Settlement Agreement achieved the goal of arriving at a Habitat Reserve Alternative that would not require acquisition funding in order to be fully assembled.

Similar to the B-9 discussed in *Part I, Chapter 6*, the B-12 Alternative focuses heavily on protecting resources associated with the Chiquita sub-basin and the San Mateo Creek Watershed:

- The proposed B-12 open space would protect habitat and species in the Chiquita sub-basin above the treatment plant and west of Chiquita Creek (see *Figure 159-M*). The Chiquita Canyon portion of the Chiquita sub-basin supports a majority of a *major population/key location* of the coastal California gnatcatcher considered to be vital to sustaining gnatcatcher populations within the sub-region and to further recovery.
- A large block of habitat and associated species in the San Mateo Creek Watershed in the Cristianitos, La Paz and Gabino sub-basins would be protected under this Alternative.

The following areas would be preserved under the B-12 Alternative:

- Within the San Juan Creek Watershed:
 - Chiquita Creek for its entire length, the entirety of Chiquita Ridge west of the creek and the majority of adjacent uplands from the SMWD wastewater treatment facility to the “Narrows;
 - Substantial contiguous habitat located south of San Juan Creek that would provide connectivity between the western portion of the planning area and Chiquita Canyon and San Juan Creek;
 - The Gobernadora Creek floodplain from San Juan Creek north to the point where it exits the Coto de Caza planned community;
 - Extensive habitat connectivity from Upper and Middle Chiquita Canyon across Sulphur Canyon/Chiquadora Ridge through the Gobernadora Creek floodplain, across Upper Gobernadora through a 2,000 to 2,500 feet wide wildlife movement corridor to the Caspers Wilderness Park portion of the proposed Habitat Reserve;
 - The mesa area west of Trampas Canyon and south of San Juan Creek (*i.e.*, the Radio Tower Road area);
 - All of the San Juan Creek 100-year floodplain within the RMV property;
 - All of the mainstem creek and associated drainage within Verdugo Canyon.
- Within the San Juan Creek Watershed:

- All of the Gabino Canyon sub-basin, with the exception of the Blind Canyon sub-unit;
- All of the La Paz Canyon sub-basin on RMV property;
- All of the Cristianitos Creek sub-basin except for 50 acres of new orchards and 25 acres for the relocation of the Ranch headquarters; and
- The lower Cristianitos Creek floodplain to the RMV property line;

2. Significant Reserve Design and Land Use Elements of the B-12 Alternative

The following are significant reserve design and land use elements of the B-12 Alternative:

- 16,536 acres of RMV land (73 percent) would be committed to the Habitat Reserve through phased dedications. All of the San Mateo Creek Watershed on RMV lands would be protected, except a 500-acre development area in PA 8. Fifty acres of new orchard to be located within PAs 6 and/or 7, and 25 acres for the relocated Ranch headquarters in PA 7.
- The 16,536 acres of RMV lands proposed for open space would result in approximately 32,818 acres of protected open space within the subregion including County parklands, non-profit lands and conservation easement open space already set aside, but not including 40,000 acres in the CNF.
- Proposed development areas total 6,279 acres (27 percent, including orchards and the 175-acre PA 4 reservoir) of RMV as follows:
 - The area on both sides of Ortega Highway immediately east of the existing residential uses in the City of San Juan Capistrano (PA 1);
 - In Chiquita Canyon (PA 2) immediately adjacent to Tesoro High School in middle Chiquita Canyon and in lower Chiquita Canyon south of the SMWD waste treatment plant and immediately north of the SMWD facility;
 - In the Gobernadora area north of San Juan Creek (PA 3);
 - In Trampas Canyon (PA 5);
 - Orchards and a relocated Ranch Headquarters in Cristianitos Meadows and Canyon (PAs 6 and 7); and
 - In Talega and Lower Gabino (PA 8).

- Create a single, large habitat block of about 23,210 acres that connects previously protected open space in Caspers Wilderness Park and Starr Ranch with RMV open space in Verdugo Canyon and the RMV and Donna O’Neill Conservancy.
- Create two additional substantial blocks of connected habitat, including about 7,300 acres encompassing the Radio Tower Road mesa area south of the creek, Chiquita Ridge north of San Juan Creek, middle Chiquita Canyon, the Upper Chiquita Conservancy, Thomas F. Riley Wilderness Park, Sulphur Canyon, a portion of Chiquadora Ridge and lands on both sides of Gobernadora Creek; and an 1,900-acre block encompassing Arroyo Trabuco and extending north to the CNF.
- Assemble designated open space through phased dedications.
- In order to improve habitat functions in extensive areas south of San Juan Creek and to provide access to proposed development areas, this Alternative proposes to potentially reduce existing traffic on Ortega Highway by diverting significant trips north of San Juan Creek through the construction of a new arterial and crossover of San Juan Creek connecting PAs 3 and 4.

Alternative B-12 is designed to address the sub-basin-level guidelines and principles, as well as the watershed scale SAMP Tenets and NCCP landscape scale guidelines. This Alternative is based on input from the USACE, CDFG, USFWS, and the environmental community through the Settlement Agreement and is designed to concentrate new development in San Juan Creek Watershed areas with lower resource values while continuing to protect high resource value areas.

Due to the longer term timeframe for development planning in PAs 4 and 8, it is not possible at this time to identify the precise location and configuration of new development within each PA. The amount of future residential/commercial development (PAs 4 and 8) and citrus development (PAs 6 and 7) acreage actually allowed under the B-12 Alternative is considerably smaller than the size of the respective “impact areas” represented by the planning areas. To allow for the flexibility of siting and configuring new development areas within these PAs, the impact/consistency analyses in this Appendix and in *Part I, Chapter 8* overstates the potential impact of future development by assuming that the entirety of PAs 4, 6, 7 and 8 are developed in order to allow for a current review of any impacts that could result from ultimate development. The total “impact areas” under the B-12 analysis, including the overstated impacts within these four Planning Areas would be 7,788 acres; however, actual development impacts would be significantly less. For instance, under the B-12 Alternative, only 550 acres of residential/commercial development and 175 acres of reservoir would be permitted within the 1,127-acre PA 4 and only 500 acres of residential/commercial development would be permitted

in the 1,349-acre PA 8. Similarly, only a total of 50 acres of new citrus orchards would be permitted in the combined 431 acres in PA 6 and 7. Thus, while the impact/consistency analyses for all PAs under the B-12 Alternative would address a total 7,788 acres, only 6,279 acres of new development would actually occur. See also *Part Chapters 8 and 13* for discussions of the “overstated” impact analysis.

3. Reserve Design Features

Under the B-12 Alternative, the proposed Habitat Reserve on RMV lands, when combined with other large-scale open space areas proposed for inclusion in the Habitat Reserve, would create three large blocks of habitat (see *Figure 159-M*) that are both connected with one another and with three other large scale protected habitat areas:

- The eastern and northern portions of the proposed Habitat Reserve connect with other previously protected open space areas to comprise a large, contiguous habitat block containing approximately 23,210 acres – this habitat block extends westward to include that portion of the San Juan Creek corridor located between the East Ortega and Trampas development areas;
- An 7,300-acre block to the west, extending from the Upper Chiquita Canyon Conservation Area in the northern portion of the Chiquita Canyon sub-basin to San Juan Creek and connecting with adjacent portions of Chiquadora Ridge, the Riley Wilderness Park, Gobernadora Creek and to Caspers Wilderness Park via an open space corridor at the northern edge of the proposed Gobernadora/Central San Juan development area; and
- A 1,900-acre block of habitat in Arroyo Trabuco, connecting with the Chiquita Canyon habitat block through Habitat Linkage B and extending to the Foothill-Trabuco Specific Plan area to the north and to the Cleveland National Forest to the east.

SECTION 3.2 CONSISTENCY ANALYSIS OF THE B-12 ALTERNATIVE APPLYING LANDSCAPE GUIDELINES AND PRINCIPLES IN RELATION TO THE PURPOSES AND GOALS OF THE PLANNING PARTICIPANTS

3.2.1 Subregional NCCP Program – Purposes and Goals

Natural Communities Planning and Regulatory Coverage. The central purpose of the Planning Participants is to undertake natural communities-based planning for the major habitat systems found in the County of Orange Southern NCCP/HCP Subregion in a manner that would further the statutory purposes of the NCCP Act Fish and Game Code Section 1600 *et seq* and FESA and

meet the requirements of the Special 4(d) Rule for the coastal California gnatcatcher, including the NCCP Conservation Guidelines, and, in so doing, provide the basis for authorizing regulatory coverage of the impacts of Covered Activities on designated Covered Species (including both listed and unlisted species) and Covered Vegetation Communities pursuant to the NCCP/MSAA/HCP.

Consistency Review: The central goal of the NCCP/MSAA/HCP is to formulate an NCCP/MSAA/HCP “Conservation Strategy” to carry out the SRP and Science Advisors conservation planning principles and tenets of reserve design. The four programmatic elements that comprise a subregional NCCP/HCP Conservation Strategy are:

- Creation of a Habitat Reserve
- Formulation of a Habit Reserve Management Program
- Regulatory coverage for Designated Species
- Implementation Agreement and Funding

The manner and the extent to which the B-12 Alternative addresses the above four elements of the Conservation Strategy are reviewed in the following subsections.

a. Conservation Strategy Element One: *Creation of a Habitat Reserve*

The Habitat Reserve design proposed pursuant to the B-12 Alternative is assessed for consistency with three sets of landscape level planning principles set forth below: **(1)** consistency with the SRP/Science Advisors Tenets of Reserve Design; **(2)** consistency with the SAMP Tenets; and **(3)** consistency with the Baseline Conditions Watershed Planning Principles.

1. B-12 Alternative – Consistency with the SRP/Science Advisors Tenets of Reserve Design

SRP Tenet 1: Conserve Target Species throughout the Planning Area.

As described above, 28 planning species were used as planning “surrogates” for reserve design and evaluation. As noted above in the consistency analysis, mud nama is excluded from the analysis because it all alternatives would impact the mud nama and thus inclusion of the mud nama in the consistency analysis would artificially lower comparative summary scores for the alternatives. For the listed planning species, Alternative B-12 has high consistency with the Draft Southern Planning Guidelines (see consistency analysis in *Part I, Chapter 8*). B-2 protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo and southwestern willow flycatcher. For the arroyo toad, all *key locations* of breeding habitat would be protected, as would all adjacent upland foraging and estivation habitat, with the exception of suitable habitat north of San Juan Creek associated with the Gobernadora development area, and all sources of

coarse sediment important for maintaining suitable breeding habitat, including Verdugo Canyon. For the gnatcatcher, overall protection would be 77 percent of locations and 80 percent of coastal sage scrub habitat, including 85 percent of locations and 89 percent of coastal sage scrub in the Chiquita Canyon/Chiquadora Ridge *major population/key location*. For the vireo and flycatcher, *important populations* in GERA would be conserved. The San Diego and Riverside fairy shrimp vernal pools along Radio Tower Road would be protected. For brodiaea 57 percent of locations and 98 percent of flowering-stalks would be protected, including the *major population/key locations* on Chiquadora Ridge and in the Lower Cristianitos/Lower Gabino Canyon.

B-12 provides high protection for the unlisted planning species (see discussion in *Part I, Chapter 8*). *Major* and/or *important populations* were identified for grasshopper sparrow, tricolored blackbird, yellow warbler, yellow-breasted chat, western spadefoot toad, orange-throated whiptail, San Diego horned lizard, southwestern pond turtle, Coulter's saltbush, many-stemmed dudleya, Salt Spring checkerbloom, and southern tarplant. Substantial protection would be provided for *key locations* of all of these species, ranging from 63 percent protection of populations of grasshopper sparrows to 93 percent protection of southern tarplant.

Unlisted planning species for which *major/important populations* in *key locations* were not identified are cactus wren, Cooper's hawk, golden eagle, merlin, white-tailed kite, mountain lion, mule deer, and mud nama. For the cactus wren, Cooper's hawk, and white-tailed kite 78 percent of cactus wren locations, 80 percent of historic nest sites for the Cooper's hawk, and 86 percent of historic nest sites for the kite, as well as at least 80 percent of suitable habitat for the three species, would be protected under the B-8 Alternative. For the golden eagle and merlin approximately 73 percent of foraging habitat would be protected and both species likely would persist in the subregion. The B-12 Open Space would include a key foraging area for the merlin in Middle and Lower Chiquita Canyon. Under B-8, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

SRP Tenet 2: Larger reserves are better.

As reviewed in the preceding summary of "Habitat Reserve Design Features," when combined with already protected open space in the Subregion, the B-12 Alternative is comprised of three major habitat blocks: the Eastern block (23,300 acres), the Western block (8,480 acres), and the Arroyo Trabuco block (1,830 acres). These habitat blocks combined total about 33,610 acres and account for about 73 percent of the B-9 Alternative open space. The Eastern block connects to substantial uninterrupted open space to the east in the CNF and Camp Pendleton.

Reserve function is a function of both total area (as addressed above) and configuration. Large blocks of habitat containing large populations of species indicative of habitat quality are superior to small blocks of habitat containing small populations (Science Advisors 1997). A large, but fragmented reserve will function less effectively than a smaller, but intact reserve. In order to

assess the degree of habitat contiguity, a “coarse” habitat block analysis was conducted by delineating intact habitat blocks, defined as contiguous areas at least 1,000 acres in size and at least 2,000 feet in width at their narrowest point and with little or no internal fragmentation by non-habitat of land covers such as disturbed covers and hardscape development. The exception is the Arroyo Trabuco which narrows to less than 2,000 feet in several areas, but which is effectively separated from adjacent development by its steep bluffs. The habitat blocks include both Habitat Reserve and SOS in Subarea 1 and extend into other subareas where there is contiguous SOS that adds to the biological function of the block, such as Subarea 3 Coto de Caza open space adjacent to the Upper Chiquita Conservation Area. *Table 9* presents the results of the habitat block analysis and *Figure 159-M* shows the spatial distribution of the habitat blocks.

**TABLE 9
MAJOR VEGETATION COMMUNITIES WITHIN
THE B-12 ALTERNATIVE HABITAT BLOCKS**

| Vegetation Community/Land Cover Type | Habitat Block Acres ¹ | | |
|---|----------------------------------|--------------|---------------|
| | Arroyo Trabuco | Western | Eastern |
| Coastal Sage Scrub | 328 | 2,734 | 10,643 |
| Chaparral | 121 | 298 | 4,926 |
| Grassland | 552 | 1,678 | 3,666 |
| Woodland & Forest | 144 | 215 | 1,252 |
| Riparian | 616 | 509 | 2,351 |
| Other Habitats/Land Covers | 33 | 1,685 | 88 |
| Developed/Disturbed (% of Total in Block) | 109 (6%) | 185 (2%) | 286 (1%) |
| Total Acres in Block | 1,903 | 7,304 | 23,212 |
| ¹ Acreage does not include infrastructure impacts. | | | |

With respect to the overall *Part I, Chapter 4* goal of preserving habitat at a large-scale and providing for connectivity, the B-12 Alternative would create three large blocks of habitat (*Figure 159-M*) that are both connected with one another and with three other large-scale protected habitat areas:

- The eastern and northern open space areas would connect with other previously protected open space areas to comprise a large, contiguous habitat block containing approximately 23,212 acres. This habitat block extends westward to include that portion of the San Juan Creek corridor located between the East Ortega and Trampas development areas;
- A 7,304-acre block to the west, extending from the Upper Chiquita Canyon Conservation Area in the northern portion of the Chiquita Canyon sub-basin to San Juan Creek and connecting with adjacent portions of Chiquadora Ridge, the Riley Wilderness Park, Gobernadora Creek, and to Caspers Wilderness Park via an open space corridor at the northern edge of the proposed Gobernadora/Central San Juan development area; and
- A 1,903-acre block of habitat in Arroyo Trabuco, connecting with the Chiquita Canyon habitat block through linkage B and extending to the Foothill-Trabuco Specific Plan area to the north and to the CNF to the east.

Within the context of the overall B-12 Alternative Habitat Reserve, these three blocks combined (32,419 acres) account for about 73 percent of the conserved lands in the planning area (including Habitat Reserve and SOS). For Subarea 1 alone, the three habitat blocks total 31,926 acres and account for about 89 percent of the conserved lands in Subarea 1.

The three habitat blocks are all interconnected by habitat linkages (*Figure 159-M*). The Arroyo Trabuco and Western habitat blocks are connected by existing linkage B between Ladera Ranch and Las Flores, which has a minimum width of about 1,500 feet. The Western and Eastern blocks are connected by linkages I and J. Linkage I is located between Coto de Caza and PA 3 in the Gobernadora sub-basin and would have a minimum width of 2,000 feet. Linkage J is located along San Juan Creek and would have a minimum width of about 1,320 feet with planned setbacks from the 100-year floodplain. These three habitat linkages would ensure connectivity among the proposed Covered Vegetation Communities in the three large habitat blocks.

The three large habitat blocks have high habitat contiguity and exhibit relatively little internal fragmentation. Existing development and disturbed land uses within the habitat blocks comprise very small percentages of the blocks, ranging from about six percent of the Arroyo Trabuco block to one percent of the Eastern block (see *Part I, Chapter 13, Table 13-19*). The construction of roads and other infrastructure within the Habitat Reserve, however, would contribute to some additional internal fragmentation in the future. Cristianitos Road/"F" Street would cross San Juan Creek and would extend from Gobernadora development to Oso Parkway. Cow Camp Road also would cross San Juan, Gobernadora and Chiquita creeks. These effects are reflected in the refined habitat block analysis shown in *Part I, Chapter 13, Table 13-9* where the roads result in the delineation of seven discrete blocks compared to the three blocks in the

coarse analysis. Each of these crossings would be designed to avoid and minimize impacts to vegetation communities and ensure long-term connectivity and contiguity (see Circulation Systems Consistency Analysis in *Section 8.3.4 of Part I, Chapter 8*). For example, bridge heights would be a minimum of 20 feet high to minimize shading effects on riparian vegetation. Other infrastructure, such as sewer and water lines, water tanks and reservoirs, pump stations, trails, drainage culverts, *etc.* would contribute to impacts within the Habitat Reserve, but would not significantly impact the function of the Habitat Reserve.

SRP Tenet 3: Keep reserve areas close. Link reserves with corridors.

The three habitat blocks are all interconnected by habitat linkages (*Figure 159-M*). The Arroyo Trabuco and Western habitat blocks are connected by existing linkage B between Ladera Ranch and Las Flores, which has a minimum width of about 1,500 feet. The Western and Eastern blocks are connected by linkages I and J. Linkage I is located between Coto de Caza and PA 3 in the Gobernadora sub-basin and would have a minimum width of 2,000 feet. Linkage J is located along San Juan Creek and would have a minimum width of about 1,320 feet with planned setbacks from the 100-year floodplain. These three habitat linkages would ensure connectivity among the proposed Covered Vegetation Communities in the three large habitat blocks.

With regard to linkage J, it is important to assess the adequacy of this linkage in terms of: **(1)** dimensions of the San Juan Creek floodplain and the scale of the proposed setback area when added to the size of the existing floodplain. **(2)** other conditions affecting aquatic species such as the arroyo toad with regard to live-in, habitat linkage functions; and **(3)** other conditions affecting aquatic, small and large mammal and avian species movement along the San Juan Creek corridor. These issues are summarized below:

- At its narrowest point with the proposed setbacks from the 100-year floodplain, the distance between Planning Area 3 and Planning Area 4 is about 1,320 feet and thus meets the minimum criterion set forth by Beier (1993) for a mountain lion wildlife movement corridor. This linkage also is required per USACE SAMP Permit Special Condition I.D.2.
- Other conditions affecting habitat linkage functions for aquatic species. For most aquatic riparian species, the 100-year floodplain defines the area providing "live-in" habitat and/or linkage functions. According to the prior critical habitat designation for the arroyo toad (which has been incorporated by reference into the new proposed critical habitat designation):

The width of the upland component of critical habitat varies based on topography. The habitat widens in broad alluvial valleys and narrows in places where streams run through constricted canyons or between surrounding hills.

(66 Federal Register, 9420, 2/7/01)

Although the upland habitat use patterns of this species are poorly understood, activity probably is concentrated in the alluvial flats (areas created when sediments from the stream are deposited) and sandy terraces found in valley bottoms of currently active drainages (Service 1999, Griffin *et al.* 1999, Sweet in litt. 1999, Ramirez 2000, Holland and Sisk 2000).”

(Ib. 9415)

Thus, in broad alluvial valleys such as the San Juan Creek streamcourse, arroyo toad “activity probably is concentrated in alluvial flats . . . and sandy terraces found in valley bottoms of currently active drainages,” as confirmed in a recent study of San Juan Creek arroyo toad movement (Ramirez 2003). Almost all locations of yellow warblers and yellow-breasted chats are found within these areas of San Juan Creek. For these species, not only is the additional setback from the 100-year floodplain significant, but also the invasive species control program is vital. As shown in the Invasive Species Control Plan *Appendix J* extensive areas of the San Juan Creek streamcourse are presently characterized by large-scale infestations of giant reed and other non-native species. As a consequence, both water-supply for arroyo toad breeding and riparian vegetation important to aquatic/riparian species has been and is being displaced both as a result of the presence and continuing expansion of giant reed vegetation, and as a result of the tremendous water consumption demands of giant reed. Implementation of the Invasive Species Control Plan is essential to enhancing and restoring live-in and foraging habitat for all aquatic/riparian species found within the San Juan Creek floodplain.

- Other conditions affecting aquatic, small and large mammal and avian species movement along the San Juan Creek corridor. In terms of wildlife movement and arroyo toad lateral foraging and estivation, the southern side of San Juan Creek is currently impacted by Ortega Highway and attendant noise and road kill impacts. The discussion of habitat linkages/wildlife movement under General Policy 3 in *Part I, Chapter 4* addresses mountain lion movement requirements which would embrace the needs of other mammals. Avian species such as the gnatcatcher move along corridors with riparian and other vegetation as well as habitat such as coastal sage scrub (see the discussion in the proposed new critical habitat designation for the gnatcatcher – 68 Federal Register 68, 20229, 4/24/03).

For the above reasons, it is concluded that the dimensions of linkage J along San Juan Creek are adequate for habitat linkage and wildlife movement functions, and thus are consistent with the NCCP landscape level and sub-basin guidelines

SRP Tenet 4: Keep habitat contiguous.

The tenet primarily refers to avoiding and minimizing fragmentation within habitat blocks and maintaining habitat continuity within habitat blocks. Habitat and land cover types within the three habitat blocks described above under Tenet 2 are presented in *Table 9*. As shown in *Table 9*, the vast majority of the three habitat blocks that would be protected under the B-12 Alternative are comprised of the five major vegetation communities reviewed and addressed in *Part I, Chapter 8*: coastal sage scrub, chaparral, grassland, woodland and forest, and riparian, although the relative proportions of the vegetation communities vary among the blocks. Grassland, agriculture and coastal sage scrub are the largest components of the Western habitat block at 84 percent, while chaparral is a predominant component of the Eastern block.

The three habitat blocks exhibit relatively little internal habitat fragmentation; *i.e.*, existing development or disturbance that disrupts the habitat contiguity of the blocks. As shown in *Table 9*, existing developed and disturbed land uses within the habitat blocks comprise relatively small percentages of the blocks, ranging from about five percent of the Arroyo Trabuco block to one percent of the Eastern block. Reflecting in significant part the existing pattern of urbanization in the planning area, internal fragmentation decreases from west to east, with the highest percentage of development and disturbed land uses in the Arroyo Trabuco block and the lowest percentage in the Eastern block.

SRP Tenet 5: Reserves should be biologically diverse.

The Science Advisors (1997) stated that blocks of habitats for reserves should contain a diverse representation of physical and environmental conditions. The overall diversity of the conserved vegetation communities in the Habitat Reserve and SOS is addressed in terms of overall habitat conservation and its proportional and spatial representation within the Habitat Reserve and SOS. The extent to which the Habitat Reserve and SOS in Subarea 1 (the 4,466 acres on Starr Ranch and Prima Deshecha) conserves the five major vegetation communities (coastal sage scrub, chaparral, grassland, woodland and forest, and riparian) and maintains the existing diversity is considered in several ways: (1) amount of vegetation conserved; (2) the proportional relationship between the amount of a vegetation community conserved and the amount of the community in Subarea 1 (*e.g.*, is a vegetation community over- or under-represented in the Habitat Reserve and SOS compared to other communities in relation to existing conditions?); and (3) the physiographic diversity of a conserved vegetation community compared to existing conditions in the Subarea, as measured by elevation gradient and distributions within watersheds. Distance from coast also could be used as a measure of biological and physiographic diversity, but it is

highly correlated with elevation in the planning area (Pearson Correlation = 0.91; $p < 0.01$), and thus only elevation was used to evaluate diversity.

Part I, Chapter 13, Section 13.3 contains an extensive analysis of biological diversity features of the B-12 Alternative and is incorporated here by reference; the reader should consult the cited *Part I, Chapter 13* analyses which are summarized here. *Chapter 13, Table 13-21* shows the gross amount and percentage of the major vegetation communities conserved in the Habitat Reserve and SOS, both for the overall Subarea 1 and broken down by watersheds.¹ Overall, the large majority of the major vegetation communities in Subarea 1 are conserved in the Habitat Reserve and SOS. Gross conservation ranges from a low of 75 percent for grassland to a high of 96 percent for riparian. Other than grassland, the lowest overall conservation percentage of the major vegetation communities is 77 percent for woodland and forest.

The Habitat Reserve and SOS also provide relatively balanced conservation of the major vegetation communities within the San Juan and San Mateo watersheds. As an example, in both the San Juan and San Mateo watersheds 87 percent of coastal sage scrub is conserved in Habitat Reserve and SOS. Similarly, woodland and forest and riparian are conserved at similar levels in the two watersheds. There is a larger difference in the relative conservation of chaparral and grassland in the two watersheds. For chaparral, 76 percent is conserved in the San Juan Watershed and 95 percent is conserved in the San Mateo Watershed. This disparity is partly due to the large chaparral component in PAs 3 and 4 (43 percent of the PA) compared to other PAs in the San Mateo Watershed (see *Part I, Chapter 13, Table 13-19*). The percentage of conserved chaparral ultimately will be increased with the overall reduction of impacts in PA 4 by 402 acres compared to this overstated impact scenario. Likewise there is a relatively large difference in the percent conservation of grasslands between the two watersheds, with 84 percent conserved in the San Juan Watershed and 66 percent conserved in the San Mateo Watershed. This is a result of the relatively greater amounts of grassland in the San Mateo Watershed (*Chapter 13, Table 13-19*). The percentage of conserved grassland in the San Mateo Watershed will be significantly increased because most of the area designated as potential orchard is grassland and only 50 acres of the designated 431 acres will be converted; approximately 300 additional acres of grassland will be conserved in the San Mateo Watershed upon final siting of the orchards in PAs 6 and 7. Similarly, in PA 8 development will be limited to only 500 acres within the 1,349-acre area.

SRP Tenet 6: Protect reserves from encroachment.

In general, blocks of habitat that are roadless or otherwise serve to minimize human access better serve species than accessible habitat blocks. The B-12 proposed circulation system compliance with Draft Southern Planning Guidelines and with General Policy 4 (roads and infrastructure to

¹ Gross acreages were used for this analysis and the following analyses because of the greatly increased complexity of incorporating the various layers of infrastructure with relatively little gain in analytic precision. Also note that the analyses presented for Alternatives B-8 and B-10M were based on the entire NCCP planning area, whereas the B-12 analysis is based on Subarea 1. Thus, total acreages for the sets of tables presented in this Appendix and *Part I, Chapter 13* are different.

be located outside the Habitat Reserve to the maximum extent feasible) is set forth in *Part I, Chapter 8*. Protection of long-term, indirect effects/ encroachment (*i.e.*, fuel management zones, exotic species, harmful chemicals, lighting, human and pet access), would be assured by compliance with Draft Southern Planning Guidelines, General Policy 5 requirements.

Watershed Planning Principles/Southern Science Advisors Tenet 7 –Terrains/ Hydrology.

From a terrains perspective, emphasis has been placed on protecting sources of coarse sediment important to maintaining the function of stream-associated habitats for species such as the arroyo toad; these areas include Verdugo Canyon, middle Gabino Canyon and La Paz Canyon (the latter a source of cobbles); overall, the B-12 Alternative protects all of the important sources of coarse sediments on RMV lands except a small side canyon adjacent to Verdugo Canyon within the Verdugo Canyon sub-basin. Also, from a terrains perspective, development would avoid the alluvial side canyons in middle Chiquita and has been located on ridges above Chiquita Canyon and in “hard-pan” of the Gobernadora sub-basin in order to protect the geomorphology of the creek systems and the surface and groundwater flows essential to perennial flow in Chiquita Creek and Gobernadora Creek. Within the San Mateo Watershed, development would be focused in significant part on areas of clay soils on Blind Canyon Mesa and on the Northrop Grumman ridge where potential sources of fine sediments detrimental to aquatic habitats can be eliminated.

From a hydrologic perspective, development has been located away from all major streams and has been located on ridges with hard-pan soils and clay soils where existing runoff patterns characterized by high runoff rates can be more effectively emulated (*e.g.*, lower Chiquita, Gobernadora, Blind Canyon Mesa and the Northrop Grumman Ridge, although some development would occur in smaller side canyons in the Gobernadora sub-basin). In the case of Gobernadora Creek, proposed development areas have been located away from the valley floor above the knickpoint in order to allow for the potential restoration of the stream meander and other measures proposed in the riparian component of the Habitat Restoration Plan component of the AMP (*Appendix H*) and away from the Sulphur Canyon tributary to the creek system. Implementation of the Invasive Species Control Plan (*Appendix J*) in San Juan Creek would significantly enhance streamcourse hydrology while the control of invasive plants, particularly tamarisk and pampas grass in the San Mateo Creek Watershed would maintain and protect aquatic habitats both within the planning area and in downstream reaches.

Consistency with Tenet 7 is examined in considerably greater detail in the Baseline Conditions Watershed Planning Principles Consistency review that follows the SAMP Tenets consistency analysis.

2. B-12 Alternative Consistency with SAMP Tenets

SAMP Tenet 1: No Net Loss of Acreage and Functions of Waters of the U.S./Waters of the State

The B-12 Alternative has been designed to protect the major riparian/wetlands systems, particularly those in the San Mateo Watershed and mainstem creeks in the San Juan Watershed. Specifically, land uses associated with the B-12 Alternative (*i.e.*, residential, commercial) would avoid direct impacts to all mainstem creeks other than those associated with infrastructure (*e.g.*, road crossings, drainage outfalls).

With regard to net acreage of Waters of the U.S./Waters of the State, the B-12 Alternative would need to provide mitigation in the form of new restoration/creation of wetlands acreage equal to the loss of 9.4 acres of wetlands and 31.3 acres of non-wetlands waters due to proposed development. Note that these impacts are calculated on the overstated impact analysis as described earlier and the ultimate development or orchard configuration for Planning Areas 4, 6, 7 and 8 will likely reduce these impacts and by association reduce the amount of mitigation required. Mitigation for these impacts is discussed conceptually in the Aquatic Resources Restoration Plan (Habitat Restoration Plan, *Appendix H*). Because of the limited amount of Waters of the U.S. acreage impacted by Alternative B-12, it is anticipated that suitable compensatory mitigation sites could be identified.

Approximately 116 acres of CDFG riparian habitat would be affected by this alternative that would be addressed by the NCCP/MSAA/HCP. Again, as noted above, this represents an overstated analysis.

The B-12 Alternative is consistent with this tenet.

SAMP Tenet 2: Maintain/Restore Riparian Ecosystem Integrity

Given its focus on protecting the major canyon systems as well as the mainstem creeks, Alternative B-12 addresses the protection aspect of this tenet within all of the major creek systems. The restoration aspect of this tenet related to impacts caused by development proposed under this alternative would be addressed through the identification of compensatory mitigation noted above.

SAMP Tenet 3: Protect Headwaters

Each of the mainstem headwaters areas not already urbanized or otherwise altered would be protected under this B-12 Alternative scenario. The headwaters area of Trampas Creek is

proposed for development, but this area is currently significantly altered due to existing mining operations. Tributaries within Gobernadora sub-basin would be affected by this alternative. Overall, the B-12 Alternative is consistent with this tenet because all major headwaters would be protected.

SAMP Tenet 4: Maintain/Protect/Restore Riparian Corridors

All major riparian corridors would be protected including Chiquita, Gobernadora, San Juan, Verdugo, Cristianitos, Talega, La Paz, and Gabino Creeks. Regarding San Juan Creek, the B-12 Alternative provides for the 1,312-foot-wide (400 meter) recommendations of Beier (1993) for large mammal (*e.g.*, mountain lion) movement via setbacks associated with Planning Areas 3 and 4, and in accordance with USACE SAMP Permit Special Condition I.D.2. Restoration would be addressed through the implementation of the Aquatic Resources Restoration Plan.

SAMP Tenet 5: Maintain/and or/Restore Floodplain Connection

The B-12 Alternative would maintain all existing areas of floodplain connection. The B-12 Alternative could provide for the recommended restoration of the meander in Gobernadora Creek, thereby helping restore historic floodplain connection. Where longer term terrains/hydrology processes are responsible for areas with existing loss of floodplain connection (*e.g.*, Chiquita Canyon at the “Narrows” and lower Gobernadora Creek below the knick point), the B-12 Alternative does not propose any actions that would be contrary to such processes.

SAMP Tenet 6: Maintain and/or Restore Sediment Sources and Transport Equilibrium

The B-12 Alternative would: (a) protect all of the major sources of coarse sediment in order to assure the continued generation of such sediments important for riparian/wetlands habitat systems (see Draft Watershed Planning Principles consistency analysis in *Part I, Chapter 8*) and (b) focus development on areas generating fine sediments in order to reduce the runoff of fine sediments that can cause deleterious impacts on riparian/wetlands habitats and associated species.

SAMP Tenet 7: Maintain Adequate Buffer for the Protection of Riparian Corridors

Under the B-12 Alternative, most major riparian corridors would be adequately buffered from development. Major riparian corridors within the RMV Planning Area can be defined as Chiquita Creek, Gobernadora Creek, San Juan Creek, Verdugo Creek, Cristianitos Creek, Gabino Creek, La Paz Creek, and Talega Creek and would be protected in the following manner:

- Development in Planning Area 2 below the SMWD wastewater treatment plant would be set back from a minimum of 225 feet to over 500 feet from centerline of Chiquita Creek.
- Development in Planning Area 3 would have a 656-foot-wide (200 meter) setback to buffer northerly San Juan Creek. When combined with the 656-foot-wide (200 meter) setback for Planning Area 4, a 1,312-foot-wide (400 meter) corridor as recommended by Beier (1993) would be provided for mountain lion movement along San Juan Creek.
- Verdugo Creek Canyon would not be directly impacted by the proposed Planning Area 4 development, thereby protecting the Verdugo Creek riparian corridor and its associated coarse sediments.
- No development is proposed in the Gabino, or La Paz sub-basins under the B-12 Alternative; therefore, Gabino Creek, and La Paz Creek would be protected. Very limited development (50 acres of citrus orchard and a 25-acre Rancho Mission Viejo headquarters) is proposed for the Cristianitos sub-basin and neither use is anticipated to result in significant impacts to this sub-basin.
- Based on the overstated impact analysis boundary for Planning Area 8, the setback for development from Talega Creek would range from 1,000 to 1,650 feet to the creek and has an elevation range of 80 to 280 feet above the creek. From the southern middle of Planning Area 8 to the southeastern edge of Planning Area 8, the setback range for development would be 1,875 to 3,350 feet from the creek with an elevation range of 280 to 500 feet above the creek. As noted previously, development in the Talega sub-basin is limited to 500 acres; therefore, further protection of the Talega Creek riparian corridor is anticipated.

The B-12 Alternative is consistent with this tenet.

SAMP Tenet 8: Protect Riparian Areas and Associated Habitats of Listed and Sensitive Species

As reviewed above for SAMP Tenet 1, riparian areas associated with listed species, other planning and sensitive species would be protected. Regarding listed species and planning species associated with aquatic/riparian habitats (arroyo toad, least Bell's vireo, southwestern willow flycatcher, Cooper's hawk, tricolored blackbird, white-tailed kite, yellow warbler, yellow-breasted chat, western spadefoot toad, and southwestern pond turtle), the B-12 Alternative would protect these species.

Conclusion

On an overall basis, B-12 Alternative is consistent with the SAMP Tenets. This alternative is not expected to result in significant impacts.

3. B-12 Consistency with Baseline Conditions Watershed Planning Principles

GEOMORPHOLOGY/TERRAINS

Principle 1: Recognize and account for the hydrologic response of different terrains at the sub-basin and watershed scale.

Land use/resource planning (hereafter Planning) should recognize the characteristics of each of the terrains found within the planning area: “sandy” terrains; (2) “silty/sandy” terrains; (3) “clayey” terrains; and (4) “crystalline” terrains. Please refer to Figure 4.1.1-3.

Sandy Terrains

Planning in sandy terrains should provide for setbacks from the mainstem channel in order to retain the infiltration capacity of the valley floor and protect the integrity of the mainstem channels and corridors. Planning should avoid the addition of significant impervious surfaces to major tributary side canyons and swales to the extent feasible. Planning should direct significant new impervious surfaces to areas characterized by relatively high runoff rates/low infiltration rates under existing conditions.

The B-12 Alternative is consistent with this principle. Except for development in one canyon in Lower Chiquita and in minor side-canyons in the Gobernadora sub-basin, the B-12 Alternative provides setbacks from the mainstem channels to retain infiltration capacity of the valley floor in canyons with sandy terrains and thus is consistent with this principle.

Sandy Terrains

Drainage from new impervious surfaces should, where feasible, be directed to major tributary side canyons for infiltration/detention. Drainage into major side canyons and swales must be accompanied by adequate detention/infiltration addressing the particular characteristics of sandy terrains.

The B-12 Alternative is consistent with this Principle because drainage is directed to major tributary side canyons for infiltration/detention through the combined control system discussed further below under Hydrology.

Clayey Terrains

Planning in clayey terrains should attempt, to the maximum extent feasible, to emulate the runoff/infiltration characteristics of clayey terrains and to correct any existing erosion in clayey terrains contributing to downstream turbidity impacts.

As reviewed in the WQMP and *Geomorphology Factors Affecting Sediment Generation and Transport under Pre-and Post-Urbanization Conditions at Rancho Mission Viejo and in the San Juan And San Mateo Watersheds, Orange County, California*, Balance Hydrologics, 2005 (*Appendix Q*), the B-12 Alternative generally concentrates development in areas with clayey or hardpan terrains that, under existing conditions, are characterized by relatively high runoff rates and thus impervious surface runoff would be comparable to existing conditions. The *Part I, Chapter 7 AMP* includes revegetation measures that would help restore existing erosion in clayey terrains as reviewed below.

Clayey Terrains

Restoration of native grasslands may be a strategy for existing grazing lands in headwaters and other appropriate areas to reduce surface erosion, increase stormwater infiltration and reduce downstream turbidity.

Under the proposed Conservation Strategy AMP, potential native grassland restoration areas are identified.

Crystalline Terrains

Planning in crystalline terrains should provide for the protection of sources of coarse sediments (e.g., Verdugo Canyon).

B-12 avoids all crystalline terrains except a small portion of the Verdugo Canyon Sub-basin outside Verdugo Canyon.

HYDROLOGY

Principle 2: Emulate, to the extent feasible, the existing runoff and infiltration patterns in consideration of specific terrains, soil types and ground cover.

Planning should consider existing rainfall infiltration and runoff processes in the context of terrains, land use, ground cover, soil types (e.g., sandy soils with high infiltration vs. clays soils with high runoff), basin size and shape, natural zones of high runoff (e.g., hard-pan caps), and natural infiltration areas (e.g., sandy swales)

The above Principle is an “impact assessment principle.” As reviewed in Chapter 3 of the WQMP:

“The USEPA Storm Water Management Model (SWMM) was used to estimate the effects of the proposed development on the hydrologic balance. SWMM is a public domain model that is widely used for modeling hydrologic and hydraulic processes affecting

runoff from urban and natural drainages. The model can simulate all aspects of the urban hydrologic cycle, including rainfall, surface and subsurface runoff, flow routing through the drainage network, storage, and treatment. The model is particularly appropriate for analyzing post development flow duration because the model takes into account the effects of precipitation, topography, land use, soils, and vegetation on surface runoff, infiltration, evapotranspiration, and groundwater recharge.

The model incorporates a continuous soil moisture accounting algorithm which requires soil properties to model infiltration and vegetation type to model evapotranspiration. Soils information was obtained from the US Department of Agriculture Soil Survey of Orange County and Western Part of Riverside County, California (1978) and also the hardpan areas mapped by Morton. More recent information on hardpan areas was provided by Balance Hydrologics. Evapotranspiration estimates utilized vegetation typing based on the PWA Codes contained in the Baseline Hydrologic Conditions Report (PCR et al. 2002). Reference evapotranspiration rates were obtained from the California Irrigation Management Information System (CIMIS) website (CIMIS 2003).”

Alternative B-10M addressed above includes the results of the above modeling program and indicates the capability of emulating existing stormwater flow conditions. As reviewed previously, the modeling for the B-10M Alternative applies equally to proposed development areas for B-12 Alternative that are comparable to this Alternative.

Planning should recognize and account for the inherent characteristics of each sub-basin’s channel network as it relates to the particular terrains and infiltration/runoff characteristics of the sub-basin.

This is an “impact assessment principle.” The WQMP addressed the inherent characteristics of each sub-basin’s channel network in relation to particular terrains and infiltration/runoff characteristics identified in the sub-basin Planning Recommendations of the Watershed Planning Principles. Additionally, the following methodology summarized in the WQMP was employed in the impact analyses:

“A detailed description of the hydrologic model, data sources and values, and calibration results is provided in Appendix A (of the WQMP).

In this application, PC-SWMM Version 4 was applied to each sub-basin to model the hydrologic response of the sub-basin under existing and proposed land use conditions, and to assess the hydrologic effectiveness of the proposed BMPs. Each sub-basin was divided into catchments to account for changes in topography, soils, and land use. For example, the Cañada Chiquita Sub-basin was divided into 18 catchments.”

Alternative B-12 is consistent with this Principle.

Principle 3: Address potential effects of future land use changes on hydrology.

Planning should address the following hydrologic considerations under future land use scenarios: (1) potential increases in dry season streamflow and wet season baseflow between storms; (2) changes in the magnitude, frequency, and duration of annually expected flow events (1-2 year events); (3) changes in hydrologic response to major episodic storm events; [sub-part (4) involving “potential changes in sediment supply” is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]...(5) changes in the infiltration of surface/soil water to groundwater.

This Principle is an “impacts assessment principle” that identifies key hydrologic considerations for impact assessment and associated minimization/mitigation measures. Each of the four elements of Principle 3 cited at the introduction to this subsection is addressed by the components of the WQMP summarized below.

According to the WQMP (unquoted sections are paraphrased for brevity):

“HYDROLOGIC MODELING

The [SWMM] model was applied in a continuous mode in which the model is driven with a continuous record of rainfall. The record extended for 53 years, from Water Year (WY) 1949 to WY 1998. The model was run for the entire 53 year period; a wet period of 17 years (WY 1978-1983 and 1991-2001); and a dry period of 36 years (WY 19459-1077 and 1984-1990). The model incorporates a continuous soil moisture accounting algorithm which requires soil properties to model infiltration and vegetation type to model evapotranspiration. The model also incorporated the effects of anticipated landscape irrigation on the water balance based on water usage projections in the Santa Margarita Water District Landscape Irrigation Usage Analysis.

Once calibrated for specific sub-basins, the SWMM model was used to model all aspects of the hydrologic cycle (e.g., rainfall, runoff, stream flow, evaporation, infiltration, percolation, and groundwater discharge) over the 53 year period of rainfall records. The output from the model includes continuous stream flow hydrographs for storm events at any location in the sub-basin; continuous stream flow hydrographs for dry weather base flows; the amount of precipitation infiltrated within each modeled catchment; and a continuous estimation of evapotranspiration losses due to plants within each modeled catchment. This output was then used to project, by month, the volume of storm runoff, groundwater flows, and evapotranspiration.

Runoff volumes and flows were predicted for pre-development or existing condition, post-development condition without BMPs, and post-development with BMPs condition. The latter scenario involved evaluating the effectiveness of the flow and water quality management facilities, and trying to optimize the performance of these facilities.

WATER BALANCE AND FLOW DURATION ANALYSIS

The effect of development on modifying the hydrologic regime within the riparian corridors and the subsequent effect on sediment transport and habitat are “hydrologic conditions of concern” [*the term used in the County of Orange MS4 Permit/DAMP and San Diego RWQCB Model SUSMP to embrace the analytic/regulatory framework for addressing potentially significant changes in post-development hydrology and the term applied throughout the WQMP*]. This effect was analyzed by comparing pre-versus-post development monthly *water balance* and *flow duration*.

Water Balance Analysis

The ultimate goal of the WQMP is to manage the overall balance, termed “*water balance*,” of all the hydrologic components of the water cycle. The water balance concept is a useful accounting tool for evaluating and controlling the effects of land use changes on hydrology. A water balance, like a checkbook balance, is intended to show the balance between the “deposits,” which include precipitation and irrigation, and “withdrawals” which include: (1) infiltration into the soils, (2) evapotranspiration, and (3) water which runs off the surface of the land. This latter withdrawal is called surface runoff and occurs during storm events or wet weather conditions. The water balance is a monthly accounting of how precipitation and irrigation water become distributed among (a) surface runoff, (b) groundwater infiltration that contributes to baseflows in streams or deep groundwater recharge, and (c) evapotranspiration.

Water that infiltrates into the ground ultimately moves down gradient and can contribute to stream flows. The contribution of groundwater flow provides for flow in streams when it is not raining, and [is] often referred to as “baseflow.” In semi-arid areas, the water balance varies dramatically from season to season, and from stream to stream. In streams where the groundwater storage is sufficient to sustain stream flows throughout the year, the streams are referred to as perennial. In streams sustained by aquifers with limited storage volume, the baseflows are limited to the wet season and the streams are called intermittent or ephemeral streams. In the San Juan and San Mateo Watersheds, both types of streams exist, and the distinction is carefully preserved in the impact analysis.

A key element in the evaluation of impacts for the proposed alternatives is modeling changes to the water balance caused by development and implementation of BMPs. Important inputs

and outputs that were assessed include precipitation, landscape irrigation, infiltration, groundwater discharge and baseflows, and evapotranspiration. Historical dry and wet cycles over a period of years or decades have an important effect on the water balance, and thus the water balance analyses were conducted for dry and wet cycles within the variable rainfall record. In semi-arid areas, the variability in the water balance between wet and dry cycles is important to characterize when defining the baseline conditions.

Flow Duration Analysis

The impacts of urbanization on hydrology include increased runoff volumes, peak flow rates, and the duration of flows, especially modest flows less than the 10-year event. Yet it is these more frequent, modest flows that can have the most effect on long-term channel morphology (Leopold 1997). The effect of changes in flow on stream geomorphology is a cumulative one; therefore the magnitude of flows (volume and flow rate), how often the flows occur (the frequency), and for how long (the duration) are all important. Managing the frequency and duration of flows is referred to herein as "*flow duration matching*" and refers to matching the post-development flow duration conditions with pre-development conditions. This matching is achieved through appropriate sizing of a flow duration basin and design of the outlet structure. In order to achieve flow duration matching, "*excess flows*," defined as the difference in runoff volume between the post-development without controls condition and the pre-development condition, must be captured and either infiltrated, stored and recycled, or diverted to a less sensitive stream or stream reach.

The flow duration analyses were conducted for the 53-year continuous rainfall record and the dry and wet cycles within that record as described above.

COMBINED FLOW AND WATER QUALITY CONTROL SYSTEM

In order to achieve flow duration matching, address the water balance and provide for water quality treatment, a combined flow and water quality control system (term *combined control system*) will be utilized.

Combined Control System Components

The proposed combined control system will include one or more of the following components, each of which provides an important function to the system (Figure 3-5 of the WQMP):

- Flow Duration Control and Water Quality Treatment (FD/WQ) Basin
- Infiltration Basin
- Bioinfiltration Swale

- Storage Facility for Non-Potable Water Supply
- Diversion Conduit to Export Excess Flows out of the sub-basin

The flow duration control and water quality treatment basin provides the initial flow and water quality treatment control functions to the system. The remaining components address the excess flows, alone or in combination with each other, generated during wet weather...”

Thus, each of the four elements of Principle 3 cited at the introduction to this subsection is addressed by the components of the WQMP summarized above and as further elaborated in the WQMP. The WQMP presents a flow management strategy for each sub-basin and presents the impact analysis in applying the particular flow-management strategies to post-development conditions (with the Combined Control System Components, as applicable, serving as mitigation BMPs). The consistency review under Principle 5 below provides additional discussion.

The WQMP analyses have been prepared for the B-10M Alternative. Based on this analysis, the B-12 Alternative has a demonstrated capability of being consistent with the Watershed Planning Principles underlying this Principle (see analyses of “hydrologic conditions of concern” in the WQMP).

Principle 4: Minimize alterations of the timing of peak flows of each sub-basin relative to the mainstem creeks.

Planning should address the relationship between the timing of peak flows of each sub-basin in relation to peak flows through and along the mainstem creeks. Instances where the relative timing of peak flows from tributary sub-basins coincides with those of the mainstem channel may result in amplification of flow rates, volumes and associated sediment transport. Therefore, management of the timing of peak flows important to safeguard downstream areas from the effects of increased frequency of high flows and sediment yields. The goal should be to not adversely alter the runoff interactions between the sub-basins and mainstem creeks in relation to peak flow characteristics identified in the Baseline Conditions Report.

This Principle is “impact assessment principle” and was addressed for the “B” Alternatives as summarized below.

To address County Flood Control planning and management considerations, a HEC-1 analysis was completed for the pre- and post-project 2-, 5-, and 100-year events. HEC-1 was used to determine the comparative effects of the “B” Alternatives in relation to pre-project conditions. These analyses are in addition to the SWMM modeling prepared for the WQMP. Potential impacts on the timing of peak flows have been analyzed and would be addressed through the use of the combined control system. Commensurate with the level of entitlement being sought, the

specific location and design of future flood control facilities are not identified. Rather, mitigation in terms of volume storage requirements and measures to assure that the timing of peak flows is not significantly altered from pre-development conditions is proposed where significant flood-related impacts are identified. While the general locations of facilities are identified, the specific location and design of future flood control facilities would be identified through subsequent levels of entitlement, specifically at the area plan approval stage; accordingly, the specific measures required to address and manage the timing of peak flows consistent with this policy would be provided for at the area plan approval stage through an Addendum or other appropriate CEQA review.

The B-12 Alternative is consistent with the peak flow timing policy set forth in this Principle due to flow control measures reviewed in the WQMP and overall distribution of land uses.

Principle 5: Maintain and/or restore the inherent geomorphic structure of major tributaries and their floodplains.

Land use and restoration should be planned in the context of the nature of the mainstem channel and its associated floodplains, flow characteristics, terraces and important surface and sub-surface drainage systems. Land planning should consider channel form (e.g., well-defined single channel, meandering channel, braided channel system) in relation to governing physical processes in the sub-basin, including terrains and groundwater. To the extent possible, the role of long-term geologic processes needs to be differentiated from localized processes influenced by specific land uses.

The WQMP presents flow control and water quality control strategies in response to the geographic-specific conditions found in each sub-basin. In this way, the role of long-term geologic processes identified in other planning documents has been differentiated from localized processes influenced by specific land uses. The introduction to the WQMP summarizes the manner in which the above concerns have been addressed in the WQMP:

“WATER QUALITY MANAGEMENT PLAN ELEMENTS

In order to address considerations of terrains and hydrologic conditions of concern, Section 4.2 through 4.9 rely on and address information set forth in the Baseline Conditions Report (PCR et al, 2002) and the Draft Watershed and Sub-basin Planning Principles (NCCP/SAMP Working Group, 2003a). The Geomorphology/Terrains; Hydrology; Sediment Sources, Storage and Transport; Groundwater Hydrology; and Water Quality Principles from the Draft Watershed and Sub-Basin Planning Principles have been employed. Additionally, the sub-basin “Planning Considerations” and Planning Recommendations” have been addressed and employed in formulating flow control and water quality control strategies in response to the geographic-specific conditions found in each sub-basin. The sub-basin specific elements

include site assessment, planning considerations, and combined control system conceptual design, and are presented in Section 4.2 through 4.9 of [of the WQMP].”

Within each sub-basin, the WQMP presents flow control strategies prepared both with respect to specific portions of the sub-basin using the “catchment” level of analysis and with respect to overall characteristics of the sub-basin (*e.g.*, see the discussion of the proposed flow management planning for specific development areas). The particular characteristics of each sub-basin’s surface and sub-surface drainage systems have been taken into account in each strategy analysis and relate governing physical processes in the sub-basin, including terrains and groundwater, to channel form. For instance, the ground infiltration and surface flow management prescriptions for the Gobernadora Sub-basin differ considerably from those for the Chiquita Sub-basin even though the two sub-basins adjoin one another and both flow into San Juan Creek. Similarly, the management of “excess flows,” takes into account the nature of San Juan Creek and overall goals of supplementing groundwater recharge in the San Juan Creek aquifers.

The WQMP evaluates the impacts of the proposed alternatives on pollutants of concern and hydrologic conditions of concern at a sub-basin level of analysis taking into account the WQMP elements. The cumulative impacts analysis further analyzes the cumulative implications of sub-basin flow management strategies on the large mainstem creeks (San Juan Creek and lower Cristianitos/San Mateo Creek) both within the RMV Planning Area and downstream of the NCCP Planning Area.

For the above reasons, the B-12 Alternative is consistent with this planning principle.

Planning should consider the role of longer-term wet/dry cycles and how such cycles influence hydrologic conditions.

This Principle is an “impact assessment principle.” As reviewed previously under Planning Principle 3, both the water balance and flow duration analyses specifically address longer-term wet/dry cycles and how such cycles influence hydrologic conditions such as base flow and stream geomorphology. For instance, the flow control strategies and annual water balance analyses for each sub-basin are addressed in Chapter 5 of the WQMP under three climatic scenarios (All Years, Dry Years, and Wet Years) under pre-development conditions and post-development conditions with Project Design Features (PDFs). Thus, because climate cycle influences on hydrologic conditions have specifically been accounted for in the WQMP methodologies, the B-12 Alternative is consistent with this Principle.

The role of major episodic storm events in transporting sediment, re-organizing channel/floodplain structure, and re-generating riparian plant communities should also be considered.

The B-12 Alternative is consistent with this Principle. The role of major episodic storm events in transporting sediment, re-organizing channel/ floodplain structure, and re-generating riparian plant communities has been considered and incorporated into the design of the B-12. The B-12 Alternative avoids all mainstem channels and geomorphically-active floodplain surfaces, where episodic adjustments occur (Appendix H).

3.2.3 Sediment Sources, Storage and Transport

Principle 6: Maintain coarse sediment yields, storage and transport processes.

Planning should take into account the volume and grain size of sediment generation occurring within the terrains specific to each sub-basin. In general, sandy and crystalline terrains will produce coarse sediments that may be important for downstream channel structure and habitat. Clayey terrains will produce fine sediments that may be associated with increased turbidity in downstream areas.

The manner and extent to which all the proposed Conservation Strategy protects sources of coarse sediments in sandy and crystalline terrains is reviewed under Geomorphology/Terrains–Principle 1. The manner in which the B-12 Alternative concentrates development in clayey trains, with the effect of reducing yields of fine sediments, is also reviewed under Geomorphology/Terrains–Principle 1. The WQMP analyses of “hydrologic conditions of concern” and indicates that overall existing coarse sediment production would be maintained. An extensive discussion of these factors and the manner in which sediment size considerations have been taken into account is set forth in the Balance Report (*Appendix Q*).

Planning should maintain sediment transport and storage processes between hillslope, tributaries, sub-basin channels, and mainstem creeks.

The B-12 Alternative avoids the sandy and crystalline terrains that protect moderate and substantial sources of coarse sediments. Further, each source of coarse sediments—the sandy terrains in Chiquita and Gobernadora Sub-basins and the crystalline terrains in Verdugo Canyon, middle Gabino and La Paz Canyon—is avoided in such a way that sediment transport and storage processes between hillslope, tributaries, sub-basin channels, and mainstem creeks are protected by means of maintaining physical contiguity in these areas and through avoidance of structures that would impede sediment movement in tributaries and in mainstem creeks. An extensive discussion of sediment transport and storage processes factors and the manner in which these processes have been taken into account is addressed in the Balance Report (*Appendix Q*).

Planning should maintain the geomorphic characteristics of streambeds, including maintaining the supply and transport of sediment types that are important to aquatic habitat systems (e.g., sand, gravel, cobbles).

The B-12 Alternative protects sources of coarse sediments that are important to aquatic habitat systems (also see the consistency analyses for the Watershed Planning Principles in *Part I, Chapters 8 and 9*). The WQMP presents flow management strategies addressing the sub-basin Planning Considerations and policies directed toward maintaining the geomorphic characteristics of streambeds. An extensive discussion of sediment types and processes important to aquatic habitat systems is provided in the Balance Report (*Appendix Q*) and indicates consistency with this Principle.

Planning should maintain significant sediment transport and storage processes in: (a) central San Juan Creek which transports coarse sediments from the upper San Juan watershed, Bell Canyon and Verdugo Canyon to downstream areas; and (b) middle and lower Gabino Creek and Cristianitos Creek downstream of the Gabino/Upper Cristianitos confluence containing areas with coarse texture channel beds and over-bank terraces supporting important aquatic habitats. The Balance Sediment Report analyses indicate consistency for the B-12 Alternative with respect to this Principle.

Planning should assure that major new detrimental sources (or sinks) of sediment are not created. New sources can result from either causing new locations for sediment generation or mobilizing sediment through accelerating existing erosional areas or initiating sedimentation from recently inactive areas such as landslides. Particular attention must be paid to avoiding creating new sources of in-channel sediment.

The manner in which the B-12 Alternative addresses existing sources of erosion in clay soils has been reviewed previously under Principle 1. The manner in which the B-12 Alternative focuses development in areas with clay soils, thereby reducing potential future generation of fine sediments, has also been reviewed previously. The extent to which the B-12 Alternative avoids sandy soils and thereby avoids generating new sources of erosion has also been reviewed previously under Principle 1. The WQMP provides strategies for the B-12 Alternative directed toward achieving “flow duration matching” under the post-development “water balance” scenarios under average, wet and dry cycle rainfall conditions. As reviewed in the WQMP, these strategies are designed to protect stream geomorphology and avoid generating new sources of erosion.

As addressed in the WQMP, the combined control system measures would satisfy this Principle for B-12 Alternative. The Balance Sediment Report further confirms consistency with this Principle.

Planning should attempt, to the extent feasible, to address existing sources of sediment, deficits of sediments, that may be detrimental to the streams systems. Such sources may include increased fine sediment yields from upper Cristianitos Creek and upper Gabino Creek.

The proposed Conservation Strategy includes vegetation restoration measures addressing this principle.

3.2.4 Groundwater Hydrology

Principle 7: Utilize infiltration properties of sandy terrains for groundwater recharge and to offset potential increases in surface runoff and adverse effects to water quality.

Land planning should take advantage of the infiltration opportunities associated with sandy terrains to offset potential effects of changes in surface runoff and water quality associated with existing and future land uses and groundwater extractions.

The B-12 Alternative is consistent with this Principle. Infiltration opportunities are most prevalent in sub-basins with sandy terrains, namely the valley floor and side canyons in the Chiquita and Gobernadora Sub-basins. The B-12 Alternative limits development in Chiquita Canyon in middle Chiquita Canyon, thereby protecting infiltration in all but one of the major side canyons in the Chiquita sub-basin (Alternative B-12 would site development on the ridges of Middle Chiquita and uses the side canyons for infiltration). Although Alternative B-12 allows limited development in smaller side canyons of the Gobernadora Sub-basin, the B-12 has taken advantage of the infiltration capacities of the sandy terrains within the Gobernadora sub-basin, along with improved conjunctive management of existing flows through the construction and operation of the proposed Gobernadora Multi-Purpose Basin. The WQMP provides for an extensive groundwater monitoring program and adaptive management based on monitoring results.

Principle 8: Protect existing groundwater recharge areas supporting slope wetlands and riparian zones; and maximize groundwater recharge of alluvial aquifers to the extent consistent with aquifer capacity and habitat management goals.

Planning should take into account and provide for the differences in character and function of groundwater recharge areas in specific sub-basins.

The influence of terrains on recharge areas is discussed under Principles 1, 2, and 5.

The WQMP sets forth “hydrologic conditions of concern” in accordance with the Orange County DAMP and Orange County/San Diego Regional Water Quality Control Board MS4 permit. Two

of the identified conditions of concern are: (1) decreased infiltration and groundwater recharge and (2) changed base flow.

The B-12 Alternative is consistent with this Principle. Although impacting a portion of the Gobernadora groundwater recharge area, the B-12 Alternative would avoid the Chiquadora Ridge and Sulphur Canyon areas that contribute to groundwater recharge while providing opportunities for increasing groundwater recharge in San Juan Creek. The WQMP analyzes and includes measures for the B-12 Modified Alternative for addressing high groundwater levels and for increasing flows to San Juan Creek to increase groundwater recharge. The measures identified in the WQMP analyses for the B-12 Modified Alternative, including monitoring and adaptive management, would apply to all three alternatives.

Planning should explore opportunities to utilize urban-generated runoff that has been treated in natural water quality systems for aquifer recharge.

The B-12 Alternative is consistent with this Principle. As noted below under “Water Quality,” the combined control systems proposed for each sub-basin provide for aquifer recharge where such recharge may be beneficial. For example, recharge of the San Juan Creek aquifer may benefit the arroyo toad.

Planning should anticipate the need to maintain infiltration and groundwater recharge in the main valleys of Chiquita and Gobernadora Sub-basins and their wide and sandy tributaries in order to maintain groundwater levels important for sustaining creek flows and associated wetlands and riparian habitats.

The preceding analyses addressing the first principle under Principle 7 apply equally to this Principle.

Planning should protect the relationship between subsurface water and the slope wetlands.

The B-12 Alternative is consistent with this Principle. Site design BMPs have been incorporated into the WQMP which address recommendations contained in the Southern Planning Guidelines and the Watershed Planning Principles regarding the avoidance of slope wetlands. For those slope wetlands which are avoided by the B-12 Alternative, the recharge area for the slope wetland is also considered as part of the avoidance.

3.2.5 Water Quality

Principle 9: Protect water quality by using a variety of strategies, with particular emphasis on natural treatment systems such as water quality wetlands, swales and

infiltration areas and application of Best Management Practices within development areas to assure comprehensive water quality treatment prior to the discharge of urban runoff into the Habitat Reserve.

Planning should account for the range of pollutant loadings and filtration functions associated with the specific terrains of each sub-basin.

As reviewed in subsection 6.2 above, the WQMP analyzes potential development impacts and proposed water quality minimization/mitigation measures addressing pollutant loadings associated with specific terrains including TSS (total suspended solids), phosphorus, and nutrients. Although the modeling assumptions use information from the Los Angeles County database as a conservative baseline, the analysis of each sub-basin includes specific information regarding sub-basin geology and additional baseline information from Wildermuth's in-stream data and the Baseline Conditions Report to assess the modeling results. These strategies would be employed under the "B" Alternatives where feasible. With regard to the filtration functions associated with the specific terrains of each sub-basin, the WQMP identifies different flow management/water quality treatment strategies deriving in significant part from the infiltration characteristics of the soils/geology within each sub-basin.

The B-12 Alternative is consistent with this Principle. Alternative B-12 is reviewed extensively in the WQMP at the sub-basin level in order to provide different flow management/water quality treatment strategies for pollutant loadings that are responsive to differences in terrains/infiltration capacities within each sub-basin. The B-12 Alternative proposed development areas are coterminous with development areas identified in the B-10M Alternative and are, therefore, fully addressed in the corresponding sub-basin strategies and impact analyses in the WQMP.

Planning should provide for water quality treatment prior to the discharge of stormwater runoff into native or restored habitat areas or shallow groundwater systems. To the maximum extent feasible, water quality management for future land-use scenarios should rely on the use of "natural treatment systems" such as water quality wetlands, swales and infiltration areas described in Management Measures 6B and 6C of the State Nonpoint Source Plan. These systems should address both dissolved and particulate-bound pollutants. Where feasible, such natural treatment systems should maintain existing hydrologic patterns, including infiltration of treated waters into groundwater systems, and should not displace existing significant habitat. Natural treatment system should be capable of treating dry season nuisance flows, non-storm wet season flows and 1-2 year storms.

All dry season non-storm wet season flows and 1- to 2-year stormwater flows in accordance with County DAMP requirements would receive water quality treatment prior to the discharge of stormwater runoff into native or restored habitat areas or to groundwater systems. Three

components of the Combined Control System provide important water quality functions using natural treatment system approaches: (1) Flow Duration Control and Water Quality Treatment (FD/WQ) Basin; (2) Infiltration Basin; and (3) Bioinfiltration Swale. The flow duration control and water quality treatment basin provides the initial flow and water quality treatment control functions to the system. Depending on whether infiltration is an element of flow duration management and water quality treatment, additional water quality treatment control would also be provided in the infiltration basin and bioinfiltration swale components of the Combined Control System. Water quality/flow management strategies are reviewed in the WQMP and pollutant loadings minimization/mitigation and impact analyses are provided in the WQMP.

For the above reasons, the B-12 Alternative is consistent with this Principle. Alternative B-12 (through the B-10M analysis) is reviewed extensively in the WQMP at the sub-basin level in order to provide different flow management/water quality treatment strategies for pollutant loadings that are responsive to differences in terrains/infiltration capacities within each sub-basin. The impact assessments in the WQMP demonstrate compliance with applicable water quality standards.

Planning should consider restoration of upland vegetation and riparian habitat as a strategy, where appropriate, to reduce loadings from uplands, and increase assimilation of pollutants.

The B-12 Alternative would avoid coastal sage scrub and native grasslands areas identified for potential restoration (except on Blind Canyon mesa depending on the final development configuration, the B-12 Alternative).

Planning should consider infiltration in conjunction with created wetlands and recharge ponds as another strategy to assimilate and transform pollutants as near to the source as possible. Such systems should protect existing shallow aquifers.

The ability of each alternative to employ infiltration strategies was discussed previously. As described above, the WQMP proposes a combined control system to achieve flow duration matching, address the water balance and provide for water quality treatment for each sub-basin where development is proposed, thus treating “pollutants of concern” as close to the source as possible. Pre- and post-project pollutant loadings are reviewed extensively in the WQMP. Comprehensive groundwater monitoring is included as part of the combined control system adaptive management program.

Planning should assess the need for changing agricultural practices to reduce nutrients loading consistent with applicable water quality requirements.

The B-12 Alternative is consistent with this Principle. Although agricultural uses would continue under all alternatives, urban land uses would occur in the San Juan Watershed for the B-12 Alternative. Thus the potential pollutants would be more urban in nature and include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides, and trash and debris. Strategies and specific measures to reduce the excess generation of fine sediments would reduce non-agricultural sources of nutrients that, in combination with agricultural Best Management Practices to manage herbicides and pesticides over time, would reduce nutrient loadings compared with existing conditions.

Dry season and stormwater discharges under future land use scenarios should achieve appropriate levels of treatment for nutrients, metals, pathogens and other potential pollutants. Stormwater discharges should address the policies established by the San Diego Regional Water Quality Control Board and the County of Orange for purposes of preparing a Jurisdictional Urban Runoff Management Program pursuant to the Regional Board's Stormwater Program. Areas that contain aquatic habitats supporting sensitive aquatic species should receive particular attention and meet appropriate water quality requirements.

In conformance with the Orange County DAMP and Orange County/San Diego Regional Quality Control Board MS4 permit, the WQMP identifies “pollutants of concern” that are anticipated or potentially could be generated by a proposed project, based on the proposed land uses and past land uses that have been identified by regulatory agencies as potentially impairing beneficial uses in the receiving water bodies or that could adversely affect receiving water quality or endangered species. These “pollutants of concern” include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides and trash and debris. The WQMP reviews the combined control system elements, including size, required for each sub-basin where development is proposed. The WQMP discusses pre-and post project pollutant loadings quantitatively and qualitatively relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

The B-12 Alternative is consistent with this Principle as demonstrated by the B-10M analysis. Alternative B-10 M is reviewed extensively in the WQMP at the sub-basin level in order to provide different flow management/water quality treatment strategies for pollutant loadings that are responsive to differences in terrains/infiltration capacities within each sub-basin; the WQMP provides an extensive review of pollutant loadings following treatment in relation to Orange County DAMP/San Diego RWQCB requirements, the California Toxics Rule, and other applicable water quality standards. The B-12 Alternative proposed development areas are coterminous with the proposed development areas identified for the B-10M Alternative and, therefore, are fully addressed in the corresponding sub-basin strategies and impact analyses in the WQMP. Finally, a proposed USACE special permit condition would limit late dry season discharges in proximity to arroyo toad breeding habitat in San Juan Creek.

b. Conservation Strategy Element Two: *Habitat Reserve Management Program*

Regarding Habitat Reserve management, the second element of the Conservation Strategy, Alternative B-12, is consistent and helps carry out the comprehensive Invasive Species Control Plan component of the AMP described in *Part I, Chapter 7*. Alternative B-13 protects the coastal sage scrub restoration areas in Chiquita Canyon (see *Figure 43-M*). Within the Gobernadora sub-basin, Sulphur Canyon and associated coastal sage scrub restoration areas are protected. Importantly, Alternative B-12 is consistent with the restoration proposed for Gobernadora Creek as reviewed in *Part I, Chapter 7*. Native grassland restoration and enhancement areas proposed in the draft Southern Planning Guidelines for Narrow Canyon within the Chiquita sub-basin and within Upper Cristianitos Canyon are protected (see *Figure 43-M*). However, native grassland restoration areas proposed for Blind Canyon Mesa could be precluded by development. The coastal sage scrub/valley needlegrass grasslands (CSS/VGL) restoration/enhancement areas in Upper Gabino Canyon would be consistent with the B-12. Alternative B-12 is consistent with the Wildland Fire Management Plan (*Appendix N*) component of the AMP.

c. Conservation Strategy Element Three: *Regulatory Coverage for Designated Species*

Because the B-12 Alternative is being recommended for consideration for inclusion as a part of the proposed Conservation Strategy a suite of species proposed for regulatory coverage is identified for the Alternative in *Part I, Chapter 13* and shown in *Table 11*.

**TABLE 11
SOUTHERN NCCP/MSAA/HCP PROPOSED COVERED SPECIES**

| Common Name ¹ | Scientific Name | Federal/State/CNPS (Plants)/Science Advisors Group |
|---------------------------------------|---|--|
| Birds | | |
| Burrowing Owl | <i>Athene cunicularia</i> | FSC, BCC/CSC/3 |
| Coastal Cactus Wren | <i>Campylorhynchus brunneicapillus couesi</i> | BCC/CSC/2 |
| Coastal California Gnatcatcher | <i>Polioptila californica californica</i> | FT/CSC/2 |
| Cooper's Hawk | <i>Accipiter cooperii</i> | None/CSC/2 |
| Grasshopper Sparrow | <i>Ammodramus savannarum</i> | None/None/2 |
| Least Bell's Vireo | <i>Vireo bellii pusillus</i> | FE/SE/3 |
| Long-eared Owl | <i>Asio otus</i> | None/CSC/3 |
| Southwestern Willow Flycatcher | <i>Empidonax trillii extimus</i> | FE/SE/3 |
| Tricolored Blackbird | <i>Agelaius tricolor</i> | FSC, BCC/CSC/3 |
| White-tailed Kite | <i>Elanus leucurus</i> | FSC, MNBMC/FP/3 |
| Yellow-breasted Chat | <i>Icteria virens</i> | None/CSC/3 |

TABLE 11
SOUTHERN NCCP/MSAA/HCP PROPOSED COVERED SPECIES

| Common Name¹ | Scientific Name | Federal/State/CNPS (Plants)/Science Advisors Group |
|--|--|---|
| Yellow Warbler | <i>Dendroica petechia</i> | None/CSC/3 |
| Amphibians | | |
| Arroyo Toad | <i>Bufo californicus</i> | FE/CSC/3 |
| Western Spadefoot Toad | <i>Spea [=Scaphiophus] hammondi</i> | FSC/CSC/3 |
| Reptiles | | |
| California Glossy Snake | <i>Arizona elegans occidentalis</i> | None/None/3/ |
| Coast Patch-nosed Snake | <i>Salvadora hexalepis virgulata</i> | None/CSC/2 |
| Northern Red-diamond Rattlesnake | <i>Crotalus ruber ruber</i> | None/CSC/3 |
| Orange-throated Whiptail | <i>Aspidozelis hyperythra</i> [=Cnemidophorus hyperythrus] <i>beldingi</i> | None/CSC/2 |
| Red Coachwhip | <i>Masticophis flagellum piceus</i> | None/None/None |
| “San Diego” Coast Horned Lizard | <i>Phrynosoma coronatum</i> (blainvillei population) | FSC/CSC/2 |
| Southwestern Pond Turtle | <i>Emys [=Clemmys] marmorata pallida</i> | FSC/CSC/3 |
| Fish | | |
| Arroyo Chub | <i>Gila orcutti</i> | FSC/CSC/3 |
| Partially-armored Threespine Stickleback | <i>Gasterosteus aculeatus</i> ssp. <i>microcephalus</i> | None/None/3 |
| Invertebrates | | |
| Riverside Fairy Shrimp | <i>Streptocephalus woottoni</i> | FE/None/3 |
| San Diego Fairy Shrimp | <i>Branchinecta sandiegonensis</i> | FE/None/3 |
| Plants | | |
| California Scrub Oak | <i>Quercus berberidifolia</i> | None |
| Chaparral Beargrass | <i>Nolina cismontana</i> | None/None/List 1B, 3-2-3/3 |
| Coast Live Oak | <i>Quercus agrifolia</i> | None |
| Coulter’s Saltbush | <i>Atriplex coulteri</i> | None/None/List 1B, 2-2-2/3 |
| Many-stemmed Dudleya | <i>Dudleya multicaulis</i> | None/None/List 1B, 1-2-3/3 |
| Southern Tarplant | <i>Centromadia parryi</i> var. <i>australis</i> | None/None/List 1B, 3-2-2/3 |
| Thread-leaved Brodiaea | <i>Brodiaea filifolia</i> | FT/SE/List 1B, 3-3-3/3 |

¹ NCCP/MSAA/HCP planning species are shown in boldface print.

Federal & State Status

BCC - U.S. Fish and Wildlife Service Bird of Conservation Concern

FE - Federally Listed Endangered Species

FSC - Federal Species of Concern

FP - State Fully Conserved

FT - Federally Listed Threatened Species

MNBMC- U.S. Fish and Wildlife Service Migratory Nongame Birds of Management Concern

CSC - California Species of Special Concern

TABLE 11
SOUTHERN NCCP/MSAA/HCP PROPOSED COVERED SPECIES

| Common Name ¹ | Scientific Name | Federal/State/CNPS (Plants)/Science Advisors Group |
|--------------------------|-----------------|---|
|--------------------------|-----------------|---|

SE - State Listed Endangered

ST - State Listed Threatened

Science Advisors Categories

1. Species whose conservation is minimally affected by the reserve planning process
2. Species conserved most effectively at the habitat or landscape level.
3. Species requiring species-level conservation action.

CNPS (California Native Plant Society)

Lists

1B: Rare or Endangered in California and Elsewhere

2: Rare or Endangered in California, More Common Elsewhere

R-E-D code (e.g., 3-3-3)

R (Rarity)

1- Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.

2- Occurrence confined to several populations or to one extended population.

3- Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

E (Endangerment)

1- Not endangered

2- Endangered in a portion of its range

3- Endangered throughout its range

D (Distribution)

1- More or less widespread outside of California

2- Rare outside California

3- Endemic to California

d. Conservation Strategy Element Four: *Implementation Agreement and Funding*

A draft Implementation Agreement based in significant part on the B-12 Alternative is attached to the draft NCCP/MSAA/HCP EIR/EIS.

SECTION 3.3 SUMMARY OF MAJOR CONSERVATION STRATEGY ISSUES RAISED IN THE PART I, CHAPTER 8 SUB-BASIN CONSISTENCY REVIEWS AND THE PART I, CHAPTER 9 LANDSCAPE-SCALE CONSISTENCY REVIEW FOR THE B-12 ALTERNATIVE

The review of the B-12 Alternative in the subsections above indicates that the major Habitat Reserve design and Guidelines/principles consistency issues are as follows:

3.3.1 Consistency with both Landscape Level and Sub-Basin Guidelines/Principles

On an overall basis, the B-12 Alternative Habitat Reserve design meets landscape-scale planning guidelines and planning principles set forth in NCCP/MSAA/HCP *Part I, Chapters 4 and 5*, as well as providing high levels of consistency with the sub-basin guidelines and principles reviewed in the *Part I, Chapter 7 AMP*. Major guidelines/principles consistency is achieved with respect to the protection of planning species, major vegetation communities, habitat blocks, connectivity, species diversity, significant hydrologic and geomorphic processes and water quality.

3.3.2. Economic Feasibility of Assembling the Habitat Reserve Areas on RMV Lands

The B-12 Alternative provides for assembling Habitat Reserve areas on RMV lands without any need for public or non-profit acquisition funding and is therefore economically feasible.

3.3.3 Long-Term Habitat Management

Regarding adaptive management, Alternative B-12 is consistent and helps carry out the comprehensive Invasive Species Control Plan. Alternative B-12 protects the coastal sage scrub restoration areas in Chiquita Canyon. Within the Gobernadora sub-basin, Sulphur Canyon and associated coastal sage scrub restoration areas are protected. Importantly, Alternative B-12 is consistent with the restoration proposed for Gobernadora Creek as reviewed in *Part I, Chapter 7*. Native grasslands restoration and enhancement areas proposed in the draft Southern Planning Guidelines for Narrow Canyon within the Chiquita sub-basin and Upper Cristianitos Canyon are protected. However, native grasslands restoration areas proposed for Blind Canyon Mesa may be precluded by development, depending on the final siting of the development footprint. The CSS/VGL restoration/enhancement areas in Upper Gabino Canyon would be consistent with the B-12. Alternative B-12 is consistent with the Grazing Management and Wildland Fire Management plans (see *Appendices G and N*, respectively).

3.3.4 Conclusions Regarding Consistency with Subregional Conservation Planning Goals and Objectives

The Alternative B-12 proposed Habitat Reserve design and HRMP generally meet the draft Southern Planning Guidelines and draft Watershed Planning Principles as applied at both the sub-basin and landscape scale. Overall, the B-12:

- protects the majority of the Chiquita Canyon sub-basin and Chiquadora Ridge;
- provides for major restoration within the Gobernadora sub-basin;
- supports a very substantial portion of a *major population/key location* and other *important populations/key locations* of the coastal California gnatcatcher consistent with the draft Southern Planning Guidelines in areas considered to be vital to sustaining gnatcatcher populations within the sub-region and to further recovery;
- protects the *key locations* of the thread-leaved brodiaea;
- provides for very limited development within the San Mateo Creek Watershed, thereby creating a large block of Habitat Reserve on the eastern boundary of the study area that connects with Casper's Wilderness Park, the San Mateo Wilderness, the CNF and Camp Pendleton; and
- Generally, carries out the major elements of the *Part I, Chapter 4* management and restoration recommendations and the *Part I, Chapter 7* AMP both with respect to major vegetation communities and in furtherance of the recovery of state and federally-listed species.

SECTION 3.4 CONSISTENCY WITH OTHER PLANNING PARTICIPANT GOALS AND PURPOSES

This section reviews only those specific purposes that relate to analysis of the Conservation Strategy.

3.4.1. In formulating the Habitat Reserve, Habitat Reserve Management Program and Regulatory Coverage elements of the Conservation Strategy, provide for coordination with the SAMP Program for the planning area in order to maximize consistency between the NCCP/MSAA/HCP and SAMP programs.

All of the Alternatives selected for review in the NCCP/MSAA/HCP and associated environmental documents have been prepared/analyzed for further consideration in cooperation with the USACE. The Watershed Principles contain the USACE SAMP tenets, as well as maps and summaries of the WES functional analyses. Sub-Basin Planning Considerations and Planning Recommendations have been formulated through a collaborative planning effort (see Introduction to the Watershed Principles in *Part I, Chapter 5, Section 5.1.1*). Importantly, many

of the Protection Recommendations set forth in the Draft Southern Planning Guidelines in *Chapter 4* address aquatic and riparian habitats and species, all of which are central to the SAMP program. *Part I, Chapter 8* reviews the consistency of the proposed Conservation Strategy with respect to both the Draft Southern Planning Guidelines and the Draft Watershed Planning Principles, including the extent to which each of the Habitat Reserve Alternatives is consistent with the Guidelines and Principles. The proposed Habitat Reserve under Alternative B-12 thus would achieve the goal of formulating a reserve design that integrates the NCCP reserve with a SAMP Aquatic Resources Conservation Program in one Habitat Reserve for both the NCCP/MSAA/HCP and SAMP.

Part I, Chapter 7 describes and reviews the proposed AMP. Preparation of the elements of the AMP has been coordinated with the USACE as well as the other planning participants. Restoration recommendations prepared by WES as part of the SAMP process have been reviewed and, where practicable, have been integrated with the NCCP sub-basin management and restoration recommendations. Specific elements of the proposed AMP including enhancement/restoration of coastal sage scrub and grasslands would reduce sediment generation and improve stormwater infiltration, consistent with SAMP/MSAA watershed protection goals. The proposed Wildland Fire Management Plan (*Appendix N*) component of the AMP and the Grazing Management Plan (*Appendix G*), which independent of, but consistent with the AMP, are directed toward the long-term health of plant species and toward the reduction of fire-induced sediment generation, both of which goals will benefit watershed processes.

Importantly, a comprehensive WQMP has been applied to Alternative B-12 (*Appendix K*). The WQMP addresses SDRWQCB NPDES requirements including the County of Orange MS4 permit program, aquatic species protection standards, USACE 404(b)(1) water quality guidelines and Clean Water Act 401 requirements. Alternative B-9 would incorporate this water quality program as a required program element for RMV development areas under the NCCP/MSAA/HCP IA. Thus, the goal of integrating Clean Water Act (SAMP), Porter-Cologne Act (state NPDES and non-point source plan requirements) and NCCP/MSAA/HCP water quality considerations would be attained.

Comprehensive review of compliance with the purpose, goals and objectives of the SAMP has been conducted as part of the EIS review of the program proposed for the SAMP planning area. The formulation of the Habitat Reserve as proposed in Alternative B-12 and the AMP reviewed in *Part I, Chapter 8* have been fully coordinated with the SAMP planning program and have addressed the Purpose and Objectives of the SAMP as presented in *Part I, Chapter 2*.

3.4.2. In formulating the NCCP/MSAA/HCP Habitat Reserve and Habitat Reserve Management Program elements of the final Conservation Strategy, provide for coordination with the County General Plan Amendment/Zone Change

process for RMV lands and other planning programs potentially impacting the planning area.

Alternative B-12 has been coordinated with the County GPA/ZC process.

3.4.3. In formulating the Habitat Reserve Management Program element of the final Conservation Strategy and undertaking coordinated land use planning, assure the preparation of a comprehensive water quality management program which, to the maximum extent feasible, integrates a program addressing species and habitat systems water quality considerations, requirements of the SWRCB and the SDRWQCB and the USACE/EPA 404(b)(1) water quality guidelines.

As reviewed above under the consistency review for the Baseline Conditions Watershed Planning Principles, a comprehensive water quality management element has been prepared. Since the WQMP would be implemented entirely outside the Habitat Reserve, the WQMP has not been included as a formal element of the *Part I, Chapter 7* AMP. However, because the WQMP will be adaptively managed over time in order to protect resources within the Habitat Reserve and areas downstream of the Habitat Reserve System (see WQMP Chapter 6) and will be fully coordinated with the HRMP, the WQMP is considered to be consistent with the goal of an integrated water quality management element that is adaptively managed for the benefit of the Habitat Reserve (see discussion in *Part I, Chapter 7*).

As reviewed above, the WQMP presents an analysis employing the County and SDRWQCB concepts of “pollutants of concern” and “hydrologic conditions of concern” to provide a framework for addressing NCCP/MSAA/HCP species/habitat concerns (including Tenet 7 of the Southern Science Advisors tenets of reserve design), the SDRWQCB NPDES and 401 requirements and the USACE/EPA 404(b) water quality guidelines.

SECTION 3.5 CONSISTENCY WITH THE COLLECTIVE PURPOSES OF THE PARTICIPATING LANDOWNERS

3.5.1 Governments/Landowners.

- a. Provide for social and economic needs by identifying development areas consistent with the NCCP Conservation Strategy and in accordance with the requirements of the NCCP Act and FESA.**

RMV and the County identified a series of objectives for the Ranch Plan project that respond, in relevant part, to the community’s desire and need to achieve specific social and economic goals.

Notably, the objectives established for the Ranch Plan include the development of an economically viable mix of land uses which address (i) local housing needs, (ii) jobs/housing balance, (iii) transportation and circulation demands, (iv) recreational opportunities and (v) preservation of resources (ala agricultural, mineral, cultural and historic). Analysis of Alternative B-12 in the context of achieving these social and economic goals/objectives manifests the following:

1. Local Housing Needs – Alternative B-12 contemplates development of up to 14,000 dwelling units (including 6,000 senior units). This figure is generally consistent with the project’s growth management objective of 14,000 units, which goal is within the target range of 20,468 residential units identified in OCP 2000M and the Orange County Growth Management Element. Accordingly, implementation of Alternative B-12 would be consistent with the County’s growth management goals for the project area.
2. Jobs/Housing Balance – Alternative B-12 contemplates development that would be consistent with the County’s jobs/housing balance and employment creation goals for the southern Orange County area.
3. Transportation and Circulation – Circulation plans developed for Alternative B-12 provide for a highway and roadway network that could accommodate local and regional traffic in a manner consistent with (or otherwise amenable to) existing and planned transportation strategies/plans established for South Orange County (see, e.g., Orange County Master Plan of Arterial Highways [MPAH]). Furthermore, implementation of Alternative B-12 would be conditioned, presumably, upon compliance with all County transportation programs and mandatory mitigation of any proximately caused traffic impacts (e.g., intersection service deficiencies). Under these assumptions, Alternative B-12 would satisfy the project’s transportation and circulation goals.
4. Recreation – Alternative B-12 would not provide for the development of any new regional parks, or the expansion or improvement of any existing regional parks. However, in accordance with the mandates of the Quimby Act, it is presumed that new local parklands would be established within the Alternative B-12 project area. Furthermore, it is presumed that implementation of Alternative B-12 would provide for the development of trails, bikeways and other recreational amenities as a condition of project approval and consistent with County policies. Thus, Alternative B-12 would appear to satisfy the project’s recreational goals and objectives.

5. Resource Preservation – Implementation of Alternative B-12 would impact certain archaeological and paleontological resources located upon the project site. However, studies indicate that these cultural and paleontological impacts could be mitigated to a less than significant level in a manner consistent with the project’s resource preservation goals. Furthermore, and as originally designed, implementation of Alternative B-12 would allow for the continuation of agricultural activities over a portion of the project area, and would allow for the continuation of mineral extraction/use for a period of years following commencement of the project. Notwithstanding, mineral extraction would be prohibited after the occurrence of certain development events (*e.g.*, completion of project phases located adjacent to mining areas, and elimination of mining activities within the San Juan Creek mineral extraction zone). Such prohibitions would frustrate the project’s goal of extracting and utilizing on-site mineral resources during the development process.

b. Identify development areas that will serve as the economic basis for Habitat Reserve dedications and long-term management funding.

Alternative B-12 provides for development areas that create the economic basis for dedications essential to the formation of a portion of the Habitat Reserve. With regard to formation of the Habitat Reserve, Alternative B-12 provides an economic basis for a series of phased dedications that would ultimately commit 100 percent of the RMV land areas identified for the Habitat Reserve without the need for public funding.

With respect to providing an economic basis for long-term funding of the AMP, Alternative B-12 provides housing and other uses that would serve as a vehicle for funding ongoing management activities in the Habitat Reserve

SECTION 3.6 CONSISTENCY WITH THE INDIVIDUAL PURPOSES OF THE PARTICIPATING LANDOWNERS

3.6.1 County of Orange

As with other participating local governments and landowners, the individual goals of the County of Orange are set forth in *Part I, Chapter 2, Section 2.2.3.a*. County goals 1-7 are reviewed in previous subsections above. Goal 8 is reviewed in *Part I, Chapter 13* and will be further reviewed in the NCCP/MSAA/HCP EIR/EIS. Goal 9 is reviewed in *Part I, Chapters 8 and 9*. Goal 10, involving analysis of social and economic implications, is reviewed above and in the NCCP/MSAA/HCP EIR/EIS; the technical implications of mitigation measures are reviewed in *Part I, Chapters 7 and 13* and of conservation alternatives are reviewed throughout this Appendix. Mitigation for potential impacts of the Prima Deshecha landfill expansion also

includes a very significant role in the funding and management of the Invasive Species Control Plan within San Juan Creek (see *Part I, Chapter 7* and *Appendix J*). At present, no additional County recreational facilities are contemplated within existing County Parks within the planning area.

3.6.2 Rancho Mission Viejo

Alternative B-12 has been formulated, in part, to address a substantial portion of the housing needs identified in OCP 2000 in furtherance of SCAG jobs/housing balance growth management goals and associated transportation/air quality objectives.

For the reasons set forth in this Section, the B-12 Alternative is capable of fulfilling the habitat, aquatic resource and watershed protection goals of the Southern NCCP/MSAA/HCP and the San Juan Creek and San Mateo Creek SAMP, as well as the water quality protection goals of the State of California Nonpoint Source Pollution Control Program and applicable requirements of the San Diego RWQCB,

Another important RMV goal is to obtain the regulatory assurances that serve as a central element of establishing land uses essential to the financial return necessary for the landowner to offset the level of risk inherent in long-term master-plan development. Given the scale of the proposed development areas, it is likely that buildout would occur over an approximately 20 year basis. Infrastructure expenditures would be made on the basis of total allowable development and thus involve inherent risk. To the extent that development areas provided for under the B-12 Alternative are consistent with the B-10M Alternative approved pursuant to the GPA/ZC, the B-12 appears to allow for a wide range of housing opportunities.

Another RMV assurances goal is to obtain certainty for land uses providing sufficient investment opportunities to serve as the basis for the commitment of land and financial resources necessary for the large-scale protection of natural resources within the planning area. This goal reflects the need to have adequate investment opportunities to provide for long-term resource protection through the creation of a Habitat Reserve and associated management funding. Long-term habitat protection will be provided for, in part, through a series of: (1) phased dedications of conservation easements over lands committed to the Habitat Reserve, and (2) the commitment of pre-existing RMV conservancies to the Habitat Reserve. The phasing of dedications is in keeping with “rough proportionality” legal standards and is also essential to provide a significant degree of assurance for the private landowner. Accordingly, the phased dedications for Habitat Reserve lands have been correlated with specific development approvals (see *Figure 182-M*). The location and sequencing of dedication increments have been selected in accordance with long-term management considerations.

3.6.3 Santa Margarita Water District

The SMWD will require authorization for construction of new facilities and operation and maintenance of future and existing facilities, as described in detail in NCCP/MSAA/HCP *Part I, Chapter 10, Section 10.1.3*. SMWD facilities construction, operations and maintenance were not addressed in the general Alternatives analyses in *Part I, Chapters 8 and 9* or this Appendix because conceptual infrastructure facilities designs, other than the circulation system, were not generated for all of the Alternatives. However, because the SMWD existing and future facilities, operations and maintenance will be Covered Activities under the "SMWD Proposed Project" they will be analyzed in NCCP/MSAA/HCP *Chapter 13*.

3.6.4 Prima Deshecha Landfill

The reader is directed to *Part I, Chapter 10, Section 10.1.a.1* for the discussion of the Prima Deshecha Landfill. This discussion applies equally to all the 'B' Alternatives.

3.6.5 The Transportation Corridor Agencies

The implications of the proposed alignments for the FTC-S for the NCCP/MSAA/HCP are reviewed in the NCCP/MSAA/HCP EIR/EIS. The extent to which each of the proposed alignments is or is not consistent with the Alternative B-12 Habitat Reserve is reviewed in the EIR/EIS. Due to the complexity of the analysis, the reader is referred to that document.