

**APPENDIX M**

**BIOLOGICAL RESOURCES ALTERNATIVES ANALYSIS**

## **ALTERNATIVE B-5 NO DEVELOPMENT WITHIN THE SAN MATEO CREEK WATERSHED**

### **BIOLOGICAL RESOURCES**

#### **OVERVIEW OF ALTERNATIVE B-5**

Alternative B-5 embodies an over-arching conservation goal of preserving the San Mateo Creek watershed portion of the planning area in its generally undeveloped current conditions (other than the existing Northrop Grumman facility). This conservation strategy for the San Mateo Creek watershed attempts to maximize large blocks of protected contiguous habitat in order to complement prior large-scale open space commitments in the eastern portion of the Southern Subregion and adjoining federal lands including: (a) the Starr Ranch Audubon Sanctuary and Caspers Wilderness Park north of San Juan Creek, (b) the Caspers Wilderness park area south of San Juan Creek created through a prior RMV dedication, (c) Cleveland National Forest areas in the upper San Juan Creek watershed, and (d) the San Mateo Wilderness.

Alternative B-5 maximizes the scale and contiguity of protected habitat in the eastern portion of the planning area, including major canyon connections through Cristianitos Canyon and Blind Canyon into adjoining Camp Pendleton areas and through Gabino Canyon, La Paz Canyon, Upper Verdugo Canyon and Lucas Canyon to the San Mateo Wilderness. In these ways, Alternative B-5 protects the 17 percent of the watershed of San Mateo Creek located within the planning area in order to complement adjacent protected open space (the San Mateo Wilderness and adjacent portions of the Cleveland National Forest) and significant habitat areas within Camp Pendleton providing habitat for several listed species.

A fundamental assumption of the B-5 Alternative is that complete avoidance within the portion of the San Mateo Creek watershed within the planning area is a more beneficial conservation strategy than attempting to provide large-scale blocks of protected open space throughout the RMV landholdings. Alternative B-5 assumes the commitment of 9,257 acres of land in the San Mateo watershed to open space. Accordingly, significant land areas would need to be committed to development within the San Juan Creek watershed in order to: (a) meet County housing needs and related project objectives that would not be addressed at all within the San Mateo watershed, and (b) provide a sufficient level of economic opportunity to justify a large land dedication by RMV (some amount of public acquisition would likely also be required within the RMV San Mateo watershed lands).

#### **Economic Feasibility Issues**

Pursuant to CEQA Guidelines Section 15126.6, in selecting alternatives to the proposed project, the lead agency is to consider alternatives that could feasibly obtain most of the basic objectives of the project. Feasibility may take into account many factors including economic viability. However, no one factor establishes a fixed limit on the scope of alternatives considered, and the lead agency may consider alternatives even if they would impede to some degree the attainment of the project objectives or would be more costly. This Program EIR considers certain alternatives that (1) provide for less development (due either to a reduction in the density/intensity of development, or a reduction in the total acreage proposed for development) than the applicant's proposed project, and/or (2) modify the locations of the applicant's proposed development. Depending on the magnitude of reductions in the amount of development allowed and the effect of modifying the locations of development, such alternatives could affect the ability to achieve one of the stated project objectives, namely, providing "the financial return necessary for the landowner to offset the level of risk, loss of investment opportunities, and commitment of land and financial resources required to provide for the

large-scale protection of many valuable natural resources.” The applicant has indicated that the failure to achieve sufficient economic return would affect (1) the amount of open space that could be dedicated under a given alternative (thus requiring that dedication rights to certain portions of the open space be acquired with alternative funds, e.g., public funds) and (2) the amount of funding that would be available to support the Adaptive Management Program that is proposed for project open space. The applicant has expressed particular concern regarding the economic feasibility of alternatives B-5, B-6, B-8 and B-9. The question of economic feasibility/liability is complex and, as noted above, may be affected not only by the density/intensity of development and development acreage provided by an alternative, but also by the location of that acreage, as well as the related costs of development in given areas. While the analysis of economic feasibility is beyond the scope of this EIR, it is a key consideration that will ultimately need to be factored into decisions regarding the feasibility of any alternative selected for approval by the County. In the following comparison of alternatives, where economic feasibility concerns may arguably be a consideration (such as in the discussion of open space dedication and Adaptive Management Program funding) the issue is noted but not resolved.

### **Impact Analysis**

Section 4.9.4 reviews the impacts anticipated to occur as a result of implementation of the Proposed Project. Significant impacts are identified on the basis of the criteria established by the County for this EIR section forth in Section 4.9.4. This section examines the impacts to biological resources anticipated to result from implementation of the project alternatives. The same significance criteria are applied to the analysis of alternatives as the Proposed Project.

Impacts to the vegetation communities/land covers by each of the alternatives are summarized in Table M-1. In addition, impacts to USACE and CDFG jurisdictional areas are summarized in Table M-2.

Impacts to sensitive species are summarized in Table M-3 for each of the alternatives. Because infrastructure impacts were not available for each of the alternatives, only impacts by the development areas have been identified. Additional infrastructure impacts for each alternative would be proportional to the impacts of the development areas for each alternative.

**TABLE M-1  
VEGETATION COMMUNITY/LAND COVER IMPACTS BY PROJECT ALTERNATIVES  
(INCLUDES DEVELOPMENT ACRES ONLY-NOT INFRASTRUCTURE)**

Vegetation/Land Cover	RMV	B-5	B-6	B-8	B-9	B-10	B-11
		Impacts (acres)	Impacts (acres)	Impacts (acres)	Impacts (acres)	Impacts (acres)	Impacts (acres)
Agriculture	2554.8	1957.7	846.0	614.3	1141.3	1349.7	1446.9
Chaparral	3792.9	801.5	796.4	466.0	1091.9	1078.7	1201.3
Developed	534.7	274.5	397.2	209.3	349.6	344.1	351.9
Disturbed	501.2	327.5	399.9	246.7	250.3	276.2	331.3
Forest	311.9	171.2	164.4	95.4	171.7	172.7	172.1
Grassland	5040.9	1059.3	1841.3	833.5	1552.9	1785.8	2019.9
Open Water	135.7	63.4	64.4	62.5	62.7	63.7	64.3
Freshwater Marsh	25.2	7.9	8.0	7.2	7.5	7.6	7.4
Riparian	1920.3	367.8	345.0	202.5	365.9	378.3	413.2
Cliff & Rock	6.2	4.1	4.1	4.1	4.1	4.1	4.1
Coastal Sage Scrub	7682.0	1989.2	1733.2	880.8	2061.0	2084.6	2491.2
Water Courses	13.2	0.0	0.0	0.0	0.0	0.0	0.0
Vernal Pools	19.9	4.1	4.1	0.0	0.0	0.0	0.0
Woodland	275.9	141.2	135.8	57.6	108.4	88.6	90.9
<b>Total</b>	<b>22814.8</b>						

Source: Dudek 2004

**TABLE M-2  
ALTERNATIVE ANALYSIS**

USACE				
Alternative	Wetlands (acres)	Waters (acres)	Total USACE (acres)	
B5	13.35	34.92	48.27	
B6	22.10	41.57	63.67	
B8	7.70	16.95	24.65	
B9	8.62	27.51	36.13	
B10	8.98	30.30	39.28	
B11	13.36	35.84	49.20	
CDFG Jurisdictional				
Alternative	Riparian (acres)	Unvegetated (acres)	Total CDFG (acres)	Unresolved*
B5	119.06	10.72	129.78	90.47
B6	129.4	19.28	148.68	91.65
B8	56.6	7.65	64.25	90.47
B9	100.7	12.75	113.45	90.47
B10	104.84	14.77	119.61	90.49
B11	118.53	18.92	137.45	91.65

\* Total Area for features being proposed as non-jurisdictional for which CDFG has not yet made their final determination.

Source: Dudek 2004



**TABLE M-3  
RMV SENSITIVE SPECIES DEVELOPMENT AREA IMPACTS**

Species	RMV	B-5	B-6	B-8	B-9	B-10	B-11
		Impact	Impact	Impact	Impact	Impact	Impact
Wildlife							
Barn Owl	25	11	9	9	10	12	12
California Gnatcatcher	243	90	32	21	46	55	76
California Horned Lark	15	8	1	0	1	3	1
Cactus Wren	523	192	137	58	161	180	217
Cooper's Hawk	23	5	3	1	5	5	5
Grasshopper Sparrow	584	263	97	40	115	199	238
Great Horned Owl	9	2	3	1	2	2	2
Least Bell's Vireo	30	1	1	0	0	0	0
Loggerhead Shrike	2	0	0	0	0	0	0
Long-eared Owl	4	0	0	0	0	0	0
Red-diamond Rattlesnake	11	4	2	2	4	4	4
Orange-throated Whiptail	147	64	49	31	37	41	43
Red-shouldered Hawk	25	7	5	2	4	4	4
Red-tailed Hawk	59	21	16	8	17	18	20
Riverside Fairy Shrimp	2	1	1	1	1	1	1
Rufous-crowned Sparrow	356	161	72	46	90	119	149
San Diego Fairy Shrimp	3	1	1	1	1	1	1
San Diego Horned Lizard	43	9	2	0	7	7	7
Southwestern Pond Turtle	12	2	3	2	2	2	3
Southwestern Willow Flycatcher	6	0	0	0	0	0	0
Tricolored Blackbird	3	2	0	0	0	1	0
Two-striped Garter Snake	7	1	2	0	0	1	0
Coast Patch-nosed Snake	1	0	0	0	0	0	0
Western Spadefoot Toad	15	6	6	5	5	5	5
Western Whiptail	53	15	5	3	5	8	7
White-tailed Kite	14	1	1	1	2	2	2
Yellow Warbler	17	2	1	0	0	0	0
Yellow-breasted Chat	75	13	9	7	8	9	8
Plants							
Beaked Spikerush							
Locations <sup>2</sup>	2	2	0	0	0	0	0
Individuals <sup>3</sup>	1501	1501	0	0	0	0	1501
Catalina Mariposa Lily							
Locations	100	76	7	4	55	61	60
Individuals	4881	4378	22	5	4051	4103	4191
Chaparral Beargrass							
Locations	6	0	0	0	1	0	0
Individuals	6	0	0	0	1	0	0
Coulter's Saltbush							
Locations	34	16	4	0	0	4	1
Individuals	3086	926	100	0	0	9	6

**TABLE M-3 (Continued)  
RMV SENSITIVE SPECIES DEVELOPMENT AREA IMPACTS**

Species	RMV	B-5	B-6	B-8	B-9	B-10	B-11
		Impact	Impact	Impact	Impact	Impact	Impact
Fish's Milkwort							
Locations	1	0	0	0	0	0	0
Individuals	5	0	0	0	0	0	0
Many-stemmed Dudleya							
Locations	284	156	114	63	113	118	124
Individuals	47192	19269	17284	6205	12562	15771	18341
Mesa Brodiaea							
Locations	2	0	0	0	1	1	1
Individuals	2	0	0	0	1	1	1
Mud Nama							
Locations	3	2	2	2	2	2	2
Individuals	9850	9500	9500	9500	9500	9500	9500
Palmer's Grapplinghook							
Locations	81	63	43	31	57	62	60
Individuals	27131	21744	4684	3178	20273	22338	22385
Salt Spring Checkerbloom							
Locations	3	3	1	1	1	1	1
Individuals	1503	1503	3	3	3	3	3
Small-flowered Microseris							
Locations	20	2	8	2	2	10	15
Individuals	28775	25	1475	25	25	2675	5475
Southern Tarplant							
Locations	38	27	0	0	0	11	1
Individuals	146067	52688	0	0	0	23726	750
Thread-leaved Brodiaea							
Locations	30	6	11	0	7	8	15
Individuals	9314	2335	6473	0	248	275	6508
Upright Burhead							
Locations	1	0	0	0	0	0	0
Individuals	1	0	0	0	0	0	0
Vernal Barley							
Locations	6	2	6	2	2	4	6
Individuals	11921	5400	11921	5400	5400	5421	11921
Western Dichondra							
Locations	4	0	1	0	0	0	0
Area <sup>4</sup>	40 acres	0	10 acres	0	0	0	0

Source: Dudek 2004

## **Consistency with Subregional Conservation Planning Goals and Guidelines**

As previously reviewed in Section 4.9.4, the NCCP/HCP Working Group developed Draft NCCP/HCP Planning Guidelines (Draft NCCP Guidelines) and Draft Watershed and Sub-basin Planning Principles (Draft Watershed Principles) incorporating and applying the NCCP Conservation Guidelines/Science Advisors Reserve Design Tenets and the SAMP Tenets Prepared by the USACE. These guidelines and principles provide guidance for decision-makers keyed to local biologic, hydrologic and geomorphic conditions. Although considered “works in progress,” by the Wildlife Agencies both the guidelines and principles represent the most current thinking regarding protection, restoration and management priorities for the resources within the study area and for this reason the County is using these in its assessment of the Alternatives reviewed in this section of the GPA/ZC EIR. The guidelines and principles have been subject to public input during public workshops associated with the NCP/HCP and SAMP/MSAA programs and are available for review on the County website.

The Draft NCCP Guidelines and Draft Watershed Principles contain both broad planning principles applicable at the watershed scale and specific planning considerations and planning recommendations applicable to specific sub-basins within the study area. The following sub-sections present consistency analyses at both scales of analysis, starting with the geographically specific sub-basin guidelines and principles.

The analyses presented in the following sub-sections will use the same methodology in assessing the level of consistency of each of the “B” Alternatives with Subregional Conservation Planning Goals and Guidelines.

### **1. Open Space/Habitat Protection**

#### **B-5 Alternative Consistency with Sub-basin Planning Guidelines and Principles**

Section 4.9.4 examines the degree to which the Proposed Project is consistent with the Draft NCCP/HCP Planning Guidelines and Watershed and Sub-basin Planning Principles. This section performs the same consistency analysis for the project alternatives. Similar to the consistency analysis for the Proposed Project, the comparative analysis of alternatives is presented in matrix form. Table M-4 presents a matrix that provides “NCCP/HCP Planning Guidelines Consistency Findings.” Table M-5 presents a matrix that provides the “Watershed and Sub-basin Planning Principles Consistency Findings” using the identical approach described for Table M-4. Because these matrices are extremely detailed, tabular summaries for the two matrices are presented in Table M-6 for the NCCP/HCP Planning Guidelines, Table M-7 for the Watershed Planning Principles, Table M-8 for the Planning Species in relation to the Planning Guidelines, and Table M-9 for the Planning Species in relation to the Watershed Principles. These summary tables are accompanied in the text by narrative summaries of the findings. Table M-10 provides an overall conservation summary for the Planning Species in terms of locations, suitable habitat, major and important populations and key locations in the alternatives. Table M-11 provides a tabular summary of the habitat protection of the alternatives. The concluding section provides a series of analyses of Circulation System Consistency of each alternative for each sub-basin.

#### **NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-5 is 73 percent (110/150 total) consistent with the Planning Guidelines. Modifications would be necessary for Alternative B-5 to achieve consistency with Planning Guideline 27 and therefore falls into the “Could be Consistent” category. Alternative B-5 conflicts with 39 (26 percent) of the Planning Guidelines.

**TABLE M-4  
SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>SAN JUAN CREEK WATERSHED</b>						
<b>Chiquita Canyon Sub-basin Protection Recommendations</b>						
1. Protect the major north-south connection to Central San Juan Creek by providing a habitat linkage between Chiquita Creek and the eastern edge of the Ladera Open Space and by restricting new impervious surfaces west of Chiquita Creek in order to maintain habitat integrity between the creek and Chiquita Ridge.	<b>Not consistent.</b> B-5 would not be consistent because it proposes impervious land use west of Chiquita Creek affecting the integrity of the north-south connection.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon and therefore would protect the major north-south connection to San Juan Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon and therefore would protect the major north-south connection to San Juan Creek.	<b>Consistent.</b> B-9 would be consistent because it would provide a habitat linkage in the Chiquita sub-basin to San Juan Creek by protecting Chiquita Ridge and proposing no development west of Chiquita Creek or above the treatment plant. The relocation of Ortega Highway would necessitate the construction of a bridge over Chiquita Creek (see Circulation Consistency Review in Section 11.3).	<b>Consistent.</b> B-10 would be consistent because it would provide a habitat linkage in the Chiquita sub-basin to San Juan Creek by protecting Chiquita Ridge and proposing a pervious land use (golf course) west of Chiquita Creek. The relocation of Ortega Highway would necessitate the construction of a bridge over Chiquita Creek (see Circulation Consistency Review in Section 11.3).	<b>Consistent.</b> B-11 would be consistent because it would provide a habitat linkage in the Chiquita sub-basin to San Juan Creek by protecting Chiquita Ridge and proposing no development west of Chiquita Creek. The relocation of Ortega Highway would necessitate the construction of a bridge over Chiquita Creek (see Circulation Consistency Review in Section 11.3).
2. Maintain east-west biological connectivity by protecting habitat linkages and wildlife corridors between Arroyo Trabuco, Chiquita Canyon, and Gobernadora Canyon. Biological connectivity should be maintained between Chiquita, Gobernadora and Arroyo Trabuco by protecting habitat linkages at a minimum of three locations within the sub-basin: 1) via rim-to-rim preservation of Sulphur Canyon (approximately 2,000 to 2,500 feet wide); 2) at the Narrows where the canyon is only 700-800 feet wide (approximately 3,000 feet south of Tesoro High School) and connects to Sulphur Canyon; and 3) in contiguous patches of coastal sage scrub through the major canyon north and east of the wastewater treatment plant.	<b>Not consistent.</b> B-5 would not be consistent because the proposed extension of Crown Valley Parkway would disrupt habitat linkage D through the Narrows and development would occur in Sulphur Canyon and constrain wildlife movement between Chiquita and Gobernadora canyons in linkage H.	<b>Not consistent.</b> B-6 would not be consistent because while it proposes no development within Chiquita Canyon and therefore would provide for unrestricted east-west movement throughout the canyon, development would occur in Sulphur Canyon and constrain wildlife movement between Chiquita and Gobernadora canyons in linkage H.	<b>Could be consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon, and thus would allow movement throughout of the canyon and specifically movement at the Narrows, north of the treatment plan, and through Sulphur Canyon, which would be protected rim-to-rim. For B-8 to be consistent it would need to address wildlife movement across the proposed arterial within the Habitat Reserve that would connect the Gobernadora development area to Oso Parkway (i.e., the extension of Cristianitos Road) on Chiquadora Ridge and in the valley bottom. Avian species would be able to cross the roadway but culverts and possibly fencing would be needed to accommodate movement by ground-dwelling species.	<b>Could be consistent.</b> B-9 could be consistent because it proposes no development within Chiquita Canyon north of the wastewater treatment plant, allowing unrestricted movement throughout this portion of the canyon and specifically unrestricted movement at the Narrows, north of the treatment plan, and through Sulphur Canyon, which would be protected rim-to-rim. For B-9 to be consistent it would need to address wildlife movement across the proposed arterial within the Habitat Reserve proposed to connect the Gobernadora development area to Oso Parkway (i.e., the extension of Cristianitos Road) on Chiquadora Ridge and in the valley bottom. Avian species would be able to cross the roadways but culverts and possibly fencing would be needed to accommodate movement by ground-dwelling species.	<b>Consistent.</b> B-10 would be consistent because it would maintain east-west connectivity by protecting the narrows, protecting coastal sage scrub patches in the major canyon north and east of the treatment plant and protecting Sulphur Canyon rim-to-rim within an expansion of Riley Wilderness Park. B-10 would need to address wildlife movement across the proposed arterial proposed to connect the Gobernadora development area to Oso Parkway (i.e., the extension of Cristianitos Road) on Chiquadora Ridge and in the valley bottom through the provision of culverts and possibly fencing to assure connectivity.	<b>Not consistent.</b> B-11 would not be consistent because although it protects Sulphur Canyon and the Narrows, it does not protect the major canyon north and east of the treatment plant. B-11 would also need to address wildlife movement across the proposed arterial proposed to connect the Gobernadora development area to Oso Parkway (i.e., the extension of Cristianitos Road) on Chiquadora Ridge and in the valley bottom through the provision of culverts and possibly fencing to assure connectivity.
3. Protect breeding and foraging habitat for the least Bell's vireo within Chiquita Canyon by focusing on protection of riparian habitat in Chiquita Creek.	<b>Not consistent.</b> B-5 would not be consistent because while it would avoid direct impacts to Chiquita Creek riparian habitat, substantial development is proposed on both sides of the creek that would result in potential indirect impacts to both breeding and foraging habitat.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon, and therefore breeding and foraging habitat for the vireo would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon, and therefore breeding and foraging habitat for the vireo would be protected.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to the riparian habitat in Chiquita Creek and uplands west of the creek south of the wastewater treatment plant, and proposes no development north of the treatment plant.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to the riparian habitat in Chiquita Creek and uplands west of the creek south of the wastewater treatment plant. B-10 also would restrict development west of the creek and north of the treatment plant to pervious surfaces and proposed golf course that would be consistent with maintaining upland foraging habitat for the vireo.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to the riparian habitat in Chiquita Creek and uplands west of the creek both north and south of the wastewater treatment plant.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
4. Protect breeding habitat and, to the extent feasible, protect foraging habitat for raptors and other species along Chiquita Creek.	<b>Not consistent.</b> B-5 would not be consistent because while it would avoid direct impacts to Chiquita Creek raptor breeding habitat, substantial development is proposed on both sides of the creek, resulting in impacts to foraging habitat.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon and therefore raptor breeding and foraging habitat would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon and therefore raptor breeding and foraging habitat would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within Chiquita Canyon north of the treatment plant, and therefore both breeding and foraging habitat for raptors would be protected in this area. Raptor breeding habitat south of the treatment plant would be protected, although foraging habitat east of Chiquita Creek would be affected.	<b>Consistent.</b> B-10 would be consistent because it would avoid raptor breeding habitat in Chiquita Creek. Adjacent foraging habitat would be maintained by the proposed golf course use north of the treatment plant and a development pattern which would avoid the major side canyons.	<b>Consistent.</b> B-11 would be consistent because breeding habitat associated with Chiquita Creek would be protected as would foraging habitat west of Chiquita Creek. Foraging habitat east of the creek would be affected.
5. Protect riparian habitat in Chiquita Canyon by recognizing the influences of terrains and hydrology on the Chiquita Creek riparian system (see Watershed and Sub-basin Planning Principles).	<b>Not consistent.</b> B-5 would not be consistent because it does not consider the influence of terrains and hydrology of the Chiquita Creek riparian system, as development is proposed within the side canyons and adjacent to the creek.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in Chiquita Canyon and riparian habitat and existing terrains and hydrology would be maintained.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in Chiquita Canyon and riparian habitat and existing terrains and hydrology would be maintained.	<b>Consistent.</b> B-9 would be consistent because the proposed development pattern considers the influence of terrains and hydrology on Chiquita Creek. The major side canyons would be avoided along the entire western side of the creek and along both sides of the creek north of the treatment plant under the proposed development.	<b>Consistent.</b> B-10 would be consistent because the development pattern proposed under B-10 considers the influence of terrains and hydrology on Chiquita Creek. The major side canyons would either be avoided along the entire western side of the creek and along both sides of the creek north of the treatment plant or a pervious land use (golf course) would be constructed.	<b>Not consistent.</b> B-11 would not be consistent because it does not recognize the influence of terrains and hydrology of the Chiquita Creek riparian system, as development is proposed within the side canyons.
6. Protect the two vernal pools and their contributing hydrologic sources along Radio Tower Road that support the Riverside fairy shrimp, San Diego fairy shrimp and western spadefoot toad. The vernal pools located on Chiquita Ridge are within the existing protected Ladera Open Space.	<b>Not consistent.</b> B-5 would not be consistent because it would impact one vernal pool on Radio Tower Road and the other one would be protected.	<b>Not consistent.</b> B-6 would not be consistent because it would impact one vernal pool on Radio Tower Road and the other one would be protected.	<b>Consistent.</b> B-8 would be consistent because it would avoid the Radio Tower Road vernal pools.	<b>Consistent.</b> B-9 would be consistent because it would avoid the Radio Tower Road vernal pools.	<b>Consistent.</b> B-10 would be consistent because it would avoid the Radio Tower Road vernal pools.	<b>Consistent.</b> B-11 would be consistent because it would avoid the Radio Tower Road vernal pools.
7. Protect slope wetlands and maintain their primary sub-surface water supply recharge characteristics and, where avoidance is infeasible, minimize and mitigate impacts.	<b>Not consistent.</b> B-5 would not be consistent because it would result in impacts to the slope wetlands.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in Chiquita Canyon and the slope wetlands and their contributing hydrologic sources would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in Chiquita Canyon and the slope wetlands and their contributing hydrologic sources would be protected.	<b>Consistent.</b> B-9 would be consistent because it would not directly impact the two slope wetlands in lower Chiquita and their subsurface recharge characteristics would not be affected. With regard to maintaining the primary recharge characteristics that support these wetlands, project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.	<b>Not consistent.</b> B-10 would not be consistent because it would impact two slope wetlands north of the treatment plant and east of the creek. It would not impact slope wetlands below the treatment plant or west of the creek. With regard to maintaining the primary recharge characteristics that support these wetlands, project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.	<b>Not Consistent.</b> B-11 would not be consistent because two slope wetlands east of Chiquita Creek, north and south of the treatment plant would be impacted. Slope wetlands west of the creek would be protected.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
8. In conjunction with the large population of 2,000 thread-leaved brodiaea flowering stalks on Chiquadora Ridge in the Gobernadora sub-basin, protect two of the four small locations of thread-leaved brodiaea in Chiquita Canyon. Combined with the large population on Chiquadora Ridge, protection of these key locations would contribute to protection of a major population.	<b>Not consistent.</b> B-5 would not be consistent because it would impact the major population of 2,000 flowering stalks on Chiquadora Ridge and all four small locations of the brodiaea.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in Chiquita Canyon and all brodiaea locations would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in Chiquita Canyon and all brodiaea locations would be protected.	<b>Not consistent.</b> B-9 would not be consistent because while it would protect the large population of 2,000 brodiaea, the four small populations would be impacted.	<b>Not consistent.</b> B-10 would not be consistent because while it would protect the large population of 2,000 brodiaea, the four small populations would be impacted.	<b>Not consistent.</b> B-11 would not be consistent because while it would protect the large population of 2,000 brodiaea, the four small populations would be impacted.
9. Protect the Chiquita Ridge important population and key location of many-stemmed dudleya totaling about 2,430 individuals in approximately 35 discrete locations. This population includes seven locations totaling 100 to 420 individuals each.	<b>Not consistent.</b> B-5 would not be consistent because it would impact approximately 50% of the important population and key location of dudleya on Chiquita Ridge.	<b>Consistent.</b> B-6 would be consistent because it proposes no development on Chiquita Ridge.	<b>Consistent.</b> B-8 would be consistent because it proposes no development on Chiquita Ridge.	<b>Consistent.</b> B-9 would be consistent because it proposes no development on Chiquita Ridge.	<b>Consistent.</b> B-10 would be consistent because it would avoid the important population and key location of many-stemmed dudleya on Chiquita Ridge.	<b>Consistent.</b> B-11 would be consistent because it would avoid the important population and key location of many-stemmed dudleya on Chiquita Ridge.
10. Protect approximately six locations of intermediate mariposa lily along Chiquita Ridge together with the location south of the treatment plant that supports 660 individuals, totaling protection of about 1,600 individuals. Although these locations are scattered, together they comprise an important population in a key location	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
11. Protect the 14 locations of intermediate mariposa lily comprising the major population on Chiquadora Ridge that overlaps the Chiquita and Gobernadora sub-basins, for a total protection of 2,000 individuals.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
12. Minimize impacts to the key location of southern tarplant west of Chiquita Creek in Middle Chiquita Canyon to the maximum extent feasible. Minimize impacts to the remainder of the major population in Middle Chiquita Canyon. Mitigate impacts to southern tarplant in a manner similar to the successful Tesoro mitigation project (ongoing mitigation projects in Chiquita Canyon have demonstrated over three successive years that this plant can be readily propagated from seed).	<b>Not consistent.</b> B-5 would not be consistent because it proposes development on the west side of Chiquita Creek, including the construction of Crown Valley Parkway, and thus would not minimize impacts to the southern tarplant major population in a key location.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within Chiquita Canyon north of the treatment plant.	<b>Could be consistent.</b> B-10 could be consistent because it proposes a golf course west of Chiquita Creek, the design of which would minimize impacts to the key location and major population of southern tarplant.	<b>Consistent.</b> B-11 would be consistent because it proposes no development west of Chiquita Creek thus protecting the key location of southern tarplant.
13. Protect the major population of southern tarplant in a key location in Lower Chiquita Canyon.	<b>Consistent.</b> B-5 would be consistent because it would avoid impacts to this major population in a key location.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to this major population in a key location.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to this major population in a key location.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to this major population in a key location.
14. Protect the key locations of Coulter's saltbush in Middle and Lower Chiquita Canyon. Minimize impacts to important populations within the sub-basin and mitigate unavoidable impacts in Chiquita Canyon.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in Middle Chiquita Canyon that would affect the major and important populations of Coulter's saltbush in Middle and Lower Chiquita Canyon.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-9 would be consistent because it proposes no development north of the wastewater treatment plant and would avoid the important population southwest of the treatment plant.	<b>Could be consistent.</b> B-10 could be consistent because it proposes a golf course west of Chiquita Creek, the design of which would minimize impacts to the key location and major population of Coulter's saltbush.	<b>Consistent.</b> B-11 would be consistent because it proposes no development west of Chiquita Creek thus protecting the key locations of Coulter's saltbush.
15. Protect the two key locations of salt spring checkerbloom in the slope wetlands in lower Chiquita Canyon	<b>Not consistent.</b> B-5 would not be consistent because it would impact the slope wetlands and therefore the salt spring checkerbloom would be impacted.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within Chiquita Canyon.	<b>Consistent.</b> B-9 would be consistent because it would not directly impact the two slope wetlands supporting salt spring checkerbloom in lower Chiquita and their subsurface recharge characteristics would not be affected. With regard to maintaining the primary recharge characteristics that support these wetlands, project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to the slope wetlands in lower Chiquita supporting salt spring checkerbloom and their subsurface recharge characteristics would not be affected. With regard to maintaining the primary recharge characteristics that support these wetlands, project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to the slope wetlands in lower Chiquita supporting salt spring checkerbloom and their subsurface recharge characteristics would not be affected. With regard to maintaining the primary recharge characteristics that support these wetlands, project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
16. Protect the important population of the California gnatcatcher and coastal sage scrub in the portion of the sub-basin south of San Juan Creek to maintain resident and dispersal habitat for the gnatcatcher between Chiquita Ridge and San Juan Capistrano and San Clemente.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in the portion of the Chiquita sub-basin south of San Juan Creek that would directly impact coastal sage scrub and the gnatcatcher important population.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development in the portion of the Chiquita sub-basin south of San Juan Creek that would directly impact coastal sage scrub and the gnatcatcher important population.	<b>Consistent.</b> B-8 would be consistent because it would avoid impacts to coastal sage scrub and the gnatcatcher important location south of San Juan Creek in the Chiquita sub-basin and therefore would maintain opportunities for resident and dispersal habitat between Chiquita Ridge and San Juan Capistrano and San Clemente.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to coastal sage scrub and the gnatcatcher important population south of San Juan Creek in the Chiquita sub-basin and therefore would maintain opportunities for resident and dispersal habitat between Chiquita Ridge and San Juan Capistrano and San Clemente.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to coastal sage scrub and gnatcatchers located south of San Juan Creek in the Chiquita sub-basin and therefore would maintain opportunities for resident and dispersal habitat between Chiquita Ridge and San Juan Capistrano and San Clemente.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to coastal sage scrub and the gnatcatcher important population south of San Juan Creek in the Chiquita sub-basin and therefore would maintain opportunities for resident and dispersal habitat between Chiquita Ridge and San Juan Capistrano and San Clemente.
17. Protect at least 80 percent of the existing coastal sage scrub and gnatcatcher locations within the major population within the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin.	<b>Not consistent.</b> B-5 would not be consistent because it would protect 82% of existing coastal sage scrub and 78% of gnatcatcher locations within the major population located in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin. 94% of gnatcatcher sites and 96% of existing coastal sage scrub within the major population located in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin would be protected. The only impacts to coastal sage scrub and gnatcatchers would be in the Narrow Canyon portion of the Chiquita sub-basin and just north of Sulphur Canyon as a result of development in PA 1 (not to be confused with the "Narrows" in lower Chiquita Canyon).	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin. 95% of gnatcatcher sites and 97% of existing coastal sage scrub within the major population located in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin would be protected. The only impacts to coastal sage scrub and gnatcatchers would be in the Narrow Canyon portion of the Chiquita sub-basin as a result of development in PA 1 (not to be confused with the "Narrows" in lower Chiquita Canyon).	<b>Consistent.</b> B-9 would be consistent because it would protect 90% of existing coastal sage scrub and 90% of gnatcatcher locations within the major population located in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin.	<b>Consistent.</b> B-10 would be consistent because it would protect 88% of existing coastal sage scrub and 88% of gnatcatcher locations within the major population located in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin.	<b>Consistent.</b> B-11 would be consistent because it would protect 87% of existing coastal sage scrub and 84% of gnatcatcher locations within the major population located in the Chiquita and Wagon Wheel sub-basins and the Chiquadora Ridge portion of the Gobernadora sub-basin.
<b>Chiquita Canyon Sub-basin Management Recommendations</b>						
18. Implement a cowbird trapping program to mitigate for impacts to existing habitat within the sub-basin and for potential impacts associated with future development. The cowbird trapping program will be evaluated on an annual basis and trap locations and trapping effort will be adjusted as part of the overall Adaptive Management Program (e.g., if the number of trapped cowbirds drops to a prescribed threshold, the trapping program may be terminated or otherwise modified).	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Not applicable.</b> B-6 proposes no development in Chiquita Canyon and therefore implementation of this management recommendation within the sub-basin would not be necessary.	<b>Not applicable.</b> B-8 proposes no development in Chiquita Canyon and therefore implementation of this management recommendation within the sub-basin would not be necessary.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.



**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
19. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing and minimization of human access and disturbance as part of the Adaptive Management Program.	<b>Not consistent.</b> B-5 would not be consistent because not all of the Adaptive Management Program measures could be implemented with the development pattern, such as management of sensitive plants and management of grazing on a rotational basis.	<b>Consistent.</b> B-6 would be consistent with the recommendation. B-6 proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Invasive Species Control Plan and Grazing Management Plan components.	<b>Consistent.</b> B-9 would be consistent it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
<b>Chiquita Canyon Sub-basin Restoration Recommendations</b>						
20. Implement a coastal sage scrub (coastal sage scrub)/valley needlegrass grassland (VGL) restoration program to enhance habitat connectivity and mitigate for impacts to existing habitat associated with future development.	<b>Not consistent.</b> B-5 would not be because it proposes development west of Chiquita Creek that would preclude full implementation of the upland habitat component of the Habitat Restoration Plan for this area.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the sub-basin and thus there would be opportunities for restoration under the Habitat Restoration Component of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development in the sub-basin and thus there would be opportunities for restoration. For B-8 to be consistent an additional funding source likely would needed to be identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent through implementation of the Adaptive Management Program, which includes a Habitat Restoration Plan component consistent with implementation of the CSS/VGL restoration recommendations.	<b>Consistent.</b> B-10 would be consistent through implementation of the Adaptive Management Program, which includes a Habitat Restoration Plan component consistent with implementation of the CSS/VGL restoration recommendations.	<b>Consistent.</b> B-11 would be consistent through implementation of the Adaptive Management Program, which includes a Habitat Restoration Plan component consistent with implementation of the CSS/VGL restoration recommendations.
21. Translocate salvaged thread-leaved brodiaea and many-stemmed dudleya to CSS/VGL restoration and enhancement areas where feasible and appropriate. Potential restoration and enhancement areas in the sub-basin include Chiquita Ridge and Chiquadora Ridge.	<b>Not consistent.</b> B-5 would not be consistent because the proposed development pattern would preclude full implementation of the CSS/VGL restoration plan. Development would occur in targeted restoration areas west of Chiquita Creek and therefore would preclude translocation of thread-leaved brodiaea and many-stemmed dudleya to these areas.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program. For B-8 to be consistent an additional funding source likely would be needed to implement the Adaptive Management Program.	<b>Consistent.</b> B-9 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.
22. Salvage clay topsoils from development areas where feasible and appropriate and transport to restoration areas. Salvaged topsoils may be used to create additional suitable brodiaea and dudleya habitat and may contain seedbank.	<b>Not consistent.</b> B-5 would not be consistent because the proposed development pattern would preclude full implementation of the CSS/VGL restoration plan. Development would occur in targeted restoration areas west of Chiquita Creek and therefore would preclude transport of clay soils to these areas.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program. For B-8 to be consistent an additional funding source likely would be needed to implement the Adaptive Management Program.	<b>Consistent.</b> B-9 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.

**TABLE M-4 (Continued)  
SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
23. Initiate an intermediate mariposa lily seed collection program in 2003 if sufficient rain falls to warrant the collection program. Receiver sites should be identified in the winter of 2003 and a pilot planting program should be implemented to determine the effectiveness of propagation from seed.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
24. Translocate salvaged intermediate mariposa lily bulbs to areas where suitable soil conditions occur. Specific translocation areas have not been identified, but based on the existing distribution potential general translocation areas in the sub-basin area include Chiquita Ridge and Chiquadora Ridge.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
25. Translocate salvaged southern tarplant and Coulter's saltbush to suitable restoration and enhancement areas in the sub-basin. Receiver areas should support alkali soils suitable for both species and should be placed in locations that maximize connectivity and genetic exchange.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in both Chiquita and Gobernadora canyons in the most suitable areas for translocation and propagation of these species.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program. For B-8 to be consistent an additional funding source likely would be needed to implement the Adaptive Management Program.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.
26. Implement restoration efforts to address localized headcuts within the sub-basin as further described in the Watershed and Sub-basin Planning Principles – Chiquita Sub-basin.	<b>Consistent.</b> B-5 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-6 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development in the sub-basin and thus there would be opportunities for implementation of the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program. For B-8 to be consistent an additional funding source likely would be needed to implement the Adaptive Management Program.	<b>Consistent.</b> B-9 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>Gobernadora Canyon Sub-basin Protection Recommendations</b>						
27. Maintain a continuous upland habitat linkage along the east-facing slopes of Chiquadora Ridge between San Juan Creek and Sulphur Canyon.	<b>Could be consistent.</b> B-5 could be consistent because it would provide for a continuous habitat linkage along the east-facing slope of Chiquadora Ridge. However, for B-5 to be consistent, it would have to address wildlife movement along Chiquadora Ridge where the extension of Cristianitos Road connecting the Gobernadora development area to Oso Parkway would cross the ridgeline. Avifauna would be able to cross the roadway, but accommodation of movement by ground-dwelling wildlife would need to be addressed by a culvert and possibly fencing.	<b>Could be consistent.</b> B-6 could be consistent because it would provide for a continuous habitat linkage along the east-facing slope of Chiquadora Ridge. However, for B-6 to be consistent, it would have to address wildlife movement along Chiquadora Ridge where the extension of Cristianitos Road connecting the Gobernadora development area to Oso Parkway would cross the ridgeline. Avifauna would be able to cross the roadway, but accommodation of movement by ground-dwelling wildlife would need to be addressed by a culvert and possibly fencing.	<b>Could be consistent.</b> B-8 could be consistent because it would provide for a continuous habitat linkage along the east-facing slope of Chiquadora Ridge. However, for B-8 to be consistent, it would have to address wildlife movement along Chiquadora Ridge where the extension of Cristianitos Road connecting the Gobernadora development area to Oso Parkway would cross the ridgeline. Avifauna would be able to cross the roadway, but accommodation of movement by ground-dwelling wildlife would need to be addressed by a culvert and possibly fencing.	<b>Could be consistent.</b> B-9 could be consistent because it would provide for a continuous habitat linkage along the east-facing slope of Chiquadora Ridge. However, for B-9 to be consistent, it would have to address wildlife movement along Chiquadora Ridge where the extension of Cristianitos Road connecting the Gobernadora development area to Oso Parkway would cross the ridgeline. Avifauna would be able to cross the roadway, but accommodation of movement by ground-dwelling wildlife would need to be addressed by a culvert and possibly fencing.	<b>Could be consistent.</b> B-10 could be consistent because it would provide for a continuous habitat linkage along the east-facing slope of Chiquadora Ridge. However, for B-4 to be consistent, it would have to address wildlife movement along Chiquadora Ridge where the extension of Cristianitos Road connecting the Gobernadora development area to Oso Parkway would cross the ridgeline. Avifauna would be able to cross the roadway, but accommodation of movement by ground-dwelling wildlife would need to be addressed by a culvert and possibly fencing.	<b>Could be consistent.</b> B-11 could be consistent because it would provide for a continuous habitat linkage along the east-facing slope of Chiquadora Ridge. However, for B-4 to be consistent, it would have to address wildlife movement along Chiquadora Ridge where the extension of Cristianitos Road connecting the Gobernadora development area to Oso Parkway would cross the ridgeline. Avifauna would be able to cross the roadway, but accommodation of movement by ground-dwelling wildlife would need to be addressed by a culvert and possibly fencing.
28. Protect Sulphur Canyon rim-to-rim to maintain a functional biological connection from Gobernadora to Gen. Thomas F. Riley Regional Park in Wagon Wheel Canyon and upper Chiquita Canyon.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development within Sulphur Canyon, including the extension of Crown Valley Parkway.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development within Sulphur Canyon.	<b>Consistent.</b> B-8 would be consistent because it would protect Sulphur Canyon rim-to-rim.	<b>Consistent.</b> B-9 would be consistent because it would protect Sulphur Canyon rim-to-rim.	<b>Consistent.</b> B-10 would be consistent because it would protect Sulphur Canyon rim-to-rim.	<b>Consistent.</b> B-11 would be consistent because it would protect Sulphur Canyon rim-to-rim.
29. Protect a 2,000- to 2,500-foot area along the southern boundary of Coto de Caza to provide for functional east-west wildlife movement from Sulphur Canyon to Bell Canyon.	<b>Not consistent.</b> B-5 would not be consistent because it would provide an approximately 1,000 foot-wide area between proposed development and the southern boundary of Coto de Caza for east-west movement.	<b>Not consistent.</b> B-6 would not be consistent because it would provide an approximately 1,000 foot-wide area between proposed development and the southern boundary of Coto de Caza for east-west movement.	<b>Consistent.</b> B-8 would be consistent because it would protect a 2,500-foot area along the southern boundary of Coto de Caza to provide for functional east-west wildlife movement from Sulphur Canyon to Bell Canyon.	<b>Consistent.</b> B-9 would be consistent because it would protect a 2,500-foot area along the southern boundary of Coto de Caza to provide for functional east-west wildlife movement from Sulphur Canyon to Bell Canyon.	<b>Consistent.</b> B-10 would be consistent because it would protect a 2,500-foot area along the southern boundary of Coto de Caza to provide for functional east-west wildlife movement from Sulphur Canyon to Bell Canyon.	<b>Consistent.</b> B-11 would be consistent because it would protect a 2,500-foot area along the southern boundary of Coto de Caza to provide for functional east-west wildlife movement from Sulphur Canyon to Bell Canyon.
30. Minimize impacts to native grasslands. Any impacts resulting from future land uses will be addressed through an overall native grasslands restoration program. (Note: Anecdotal observations have documented native grassland in the Gobernadora sub-basin, but it has not been mapped or quantified. This task will be completed prior to completion of the EIR/EIS.	<b>Not consistent.</b> B-5 would not be consistent because the vast majority of grassland (native and non-native) in the sub-basin would be impacted. However, the Habitat Restoration Plan component of the Adaptive Management Program would provide for VGL restoration elsewhere in the planning area.	<b>Not consistent.</b> B-6 would not be consistent because the vast majority of grassland (native and non-native) in the sub-basin would be impacted. However, the Habitat Restoration Plan component of the Adaptive Management Program would provide for VGL restoration elsewhere in the planning area.	<b>Not consistent.</b> B-8 would not be consistent because the vast majority of grassland (native and non-native) in the sub-basin would be impacted. Also, under B-8 the ability to fund the Habitat Restoration Plan component of the Adaptive Management Program is uncertain.	<b>Not consistent.</b> B-9 would not be consistent because the vast majority of grassland (native and non-native) in the sub-basin would be impacted. However, the Habitat Restoration Plan component of the Adaptive Management Program would provide for VGL restoration elsewhere in the planning area.	<b>Not consistent.</b> B-10 would not be consistent because the vast majority of grassland (native and non-native) in the sub-basin would be impacted. However, the Habitat Restoration Plan component of the Adaptive Management Program would provide for VGL restoration elsewhere in the planning area.	<b>Not consistent.</b> B-11 would not be consistent because the vast majority of grassland (native and non-native) in the sub-basin would be impacted. However, the Habitat Restoration Plan component of the Adaptive Management Program would provide for VGL restoration elsewhere in the planning area.

**TABLE M-4 (Continued)  
SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
31. Protect the southern willow scrub in GERA that provides nesting habitat for least Bell's vireo, southwestern willow flycatcher, yellow-breasted chat, Cooper's hawk, red-shouldered hawk, and barn owl.	<b>Not consistent.</b> B-5 would not be consistent because while it would avoid impacts to GERA, development is proposed upstream, potentially resulting in downstream impacts on habitat quality in GERA.	<b>Not consistent.</b> B-6 would not be consistent because while it would avoid impacts to GERA, development is proposed upstream, potentially resulting in downstream impacts on habitat quality in GERA.	<b>Consistent.</b> B-8 would be consistent because it would avoid impacts to GERA as well as upstream habitat in Gobernadora.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to GERA as well as upstream habitat in Gobernadora.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to GERA as well as upstream habitat in Gobernadora.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to GERA as well as upstream habitat in Gobernadora.
32. Avoid and minimize impacts to oak woodlands in northern Gobernadora along the ridgelines between the Gobernadora and Bell Canyon sub-basins.	<b>Not consistent.</b> B-5 would not be consistent because it would impact oak woodlands both within the sub-basin and along the ridgeline between Bell and Gobernadora.	<b>Not consistent.</b> B-6 would not be consistent because it would impact oak woodlands both within the sub-basin and along the ridgeline between Bell and Gobernadora.	<b>Consistent.</b> B-8 would be consistent because it would include a setback from the Gobernadora/Bell ridgeline and also would protect oak woodlands in the northern portion of the sub-basin.	<b>Consistent.</b> B-9 would be consistent because it would include a setback from the Gobernadora/Bell ridgeline and also would provide for the protection of oak woodlands within the upper part of the sub-basin.	<b>Consistent.</b> B-10 would be consistent because it would include a setback from the Gobernadora/Bell ridgeline and also would provide for the protection of oak woodlands within the upper part of the sub-basin.	<b>Consistent.</b> B-11 would be consistent because it would include a setback from the Gobernadora/Bell ridgeline and also would provide for the protection of oak woodlands within the upper part of the sub-basin.
33. Keep open sufficient valley bottom south of Coto de Caza and above the knickpoint to allow creek meander for floodplain connection. Refer also to the Watershed and Sub-basin Planning Principles – Chiquita Gobernadora Sub-basin.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in the canyon bottom and would not allow Gobernadora Creek to naturally meander.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development in the canyon bottom and would not allow Gobernadora Creek to naturally meander.	<b>Consistent.</b> B-8 would be consistent because development in the sub-basin would provide for sufficient open valley bottom south of Coto de Caza and above the knickpoint to allow creek meander for floodplain connection.	<b>Consistent.</b> B-9 would be consistent because development in the sub-basin would provide for sufficient open valley bottom south of Coto de Caza and above the knickpoint to allow creek meander for floodplain connection.	<b>Consistent.</b> B-10 would be consistent because development in the sub-basin would provide for sufficient open valley bottom south of Coto de Caza and above the knickpoint to allow creek meander for floodplain connection.	<b>Consistent.</b> B-11 would be consistent because development in the sub-basin would provide for sufficient open valley bottom south of Coto de Caza and above the knickpoint to allow creek meander for floodplain connection.
34. Protect sufficient grassland habitat in the valley bottom in the northern portion of lower Gobernadora on RMV property to support a nesting population of the tricolored blackbird. (The existing nesting ponds are located within Coto de Caza.)	<b>Not consistent.</b> B-5 would not be consistent because it proposes development of grassland habitat in northern Gobernadora.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development of grassland habitat in northern Gobernadora.	<b>Consistent.</b> B-8 would be consistent because it would protect grassland habitat in the valley bottom in the northern portion of lower Gobernadora. The SMWD Multipurpose Basin would result in impacts to a portion of this grassland area, but these potential impacts to foraging grasslands could be offset by the expansion of wetland breeding habitat associated with the basin.	<b>Consistent.</b> B-9 would be consistent because it would protect grassland habitat in the valley bottom in the northern portion of lower Gobernadora. The SMWD Multipurpose Basin would result in impacts to a portion of this grassland area, but these potential impacts to foraging grasslands could be offset by the expansion of wetland breeding habitat associated with the basin.	<b>Consistent.</b> B-10 would be consistent because it would protect grassland habitat in the valley bottom in the northern portion of lower Gobernadora. The SMWD Multipurpose Basin would result in impacts to a portion of this grassland area, but these potential impacts to foraging grasslands could be offset by the expansion of wetland breeding habitat associated with the basin.	<b>Consistent.</b> B-11 would be consistent because it would protect grassland habitat in the valley bottom in the northern portion of lower Gobernadora. The SMWD Multipurpose Basin would result in impacts to a portion of this grassland area, but these potential impacts to foraging grasslands could be offset by the expansion of wetland breeding habitat associated with the basin.
35. Protect the thread-leaved brodiaea major population in a key location supporting approximately 2,000 flowering stalks on Chiquadora Ridge.	<b>Not consistent.</b> B-5 would not be consistent because it would impact this population.	<b>Consistent.</b> B-6 would be consistent because it would avoid this population.	<b>Consistent.</b> B-8 would be consistent because it would avoid this population.	<b>Consistent.</b> B-9 would be consistent because it would avoid this population.	<b>Consistent.</b> B-10 would be consistent because it would avoid this population.	<b>Consistent.</b> B-11 would be consistent because it would avoid this population.
36. Protect the 12 locations of intermediate mariposa lily comprising the major population on Chiquadora Ridge that overlaps the Chiquita and Gobernadora sub-basins, for total protection of about 1,580 individuals.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
37. Protect the Chiquadora Ridge major population of many-stemmed dudleya totaling about 8,600 individuals in approximately 48 discrete locations. This population includes 24 locations totaling 100 to 750 individuals each, with nine of these locations numbering more than 500 individuals.	<b>Not consistent.</b> B-5 would not be consistent because it would protect about 21 of 48 locations (44%) totaling approximately 4612 individuals (54%) in this major population of dudleya.	<b>Consistent.</b> B-6 would be consistent because it would protect about 40 of 48 locations (83%) totaling approximately 6,420 individuals (76%) in this major population of dudleya.	<b>Consistent.</b> B-8 would be consistent because all locations of dudleya in this major population would be protected.	<b>Consistent.</b> B-9 would be consistent because it would protect about 40 of 48 locations (83%) totaling approximately 7,680 individuals (10%) in this major population of dudleya.	<b>Consistent.</b> B-10 would be consistent because it would protect about 40 of 48 locations (83%) totaling approximately 7,680 individuals (90%) in this major population of dudleya.	<b>Consistent.</b> B-11 would be consistent because it would protect about 40 of 48 locations (83%) totaling approximately 7,680 individuals (90%) in this major population of dudleya.
38. Protect the major population of southern tarplant totaling 10,000+ individuals located in GERA.	<b>Not consistent.</b> B-5 would not be consistent because although it would avoid GERA and the major population of tarplant, development within Gobernadora Creek upstream of GERA could result in downstream impacts on the tarplant population.	<b>Not consistent.</b> B-6 would not be consistent because although it would avoid GERA and the major population of tarplant, development within Gobernadora Creek upstream of GERA could result in downstream impacts on the tarplant population.	<b>Consistent.</b> B-8 would be consistent because it would avoid impacts to GERA and therefore would protect the major population of southern tarplant.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to GERA and therefore would protect the major population of southern tarplant.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to GERA and therefore would protect the major population of southern tarplant.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to GERA and therefore would protect the major population of southern tarplant.
39. Consistent with the Species Accounts recommendations and the Planning Recommendations for the Chiquita sub-basin, protect at least 80 percent of the coastal sage scrub and gnatcatcher sites along the eastern slopes of Chiquadora Ridge to contribute to achieving the overall goal of protecting at least 80 percent of the major population of gnatcatchers extending from Chiquita Canyon across to Gobernadora Creek. A further goal is the maintenance of connectivity between the protected coastal sage scrub patches to allow for dispersal of gnatcatchers between patches.	<b>Not consistent.</b> B-5 would not be consistent because it would protect 43% of existing coastal sage scrub and 54% of gnatcatcher locations. However, connectivity among protected coastal sage scrub would be maintained.	<b>Consistent.</b> B-6 would be consistent because it would protect 93% of existing coastal sage scrub and 91% of gnatcatcher locations. Connectivity among protected coastal sage scrub would be maintained.	<b>Consistent.</b> B-8 would be consistent because it would protect 100% of existing coastal sage scrub and 100% of gnatcatcher locations. Connectivity among protected coastal sage scrub would be maintained.	<b>Not consistent.</b> B-9 would not be consistent because it would protect 62% of existing coastal sage scrub and 71% of gnatcatcher locations. However, connectivity among protected coastal sage scrub would be maintained.	<b>Not consistent.</b> B-10 would not be consistent because it would protect 57% of existing coastal sage scrub and 68% of gnatcatcher locations. However, connectivity among protected coastal sage scrub would be maintained.	<b>Not consistent.</b> B-11 would not be consistent because it would protect 57% of existing coastal sage scrub and 68% of gnatcatcher locations. However, connectivity among protected coastal sage scrub would be maintained.
<b>Gobernadora Canyon Sub-basin Management Recommendations</b>						
40. Implement a cowbird trapping program to mitigate for impacts to existing habitat within the sub-basin and for potential impacts associated with future development. The cowbird trapping program will be evaluated on an annual basis and trap locations and trapping effort will be adjusted as part of the overall Adaptive Management Program (e.g.,	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source were identified to implement the Adaptive Management Program, including cowbird trapping as part of the Invasive Species Control Plan component	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes cowbird trapping as part of the Invasive Species Control Plan.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
if the number of trapped cowbirds drops to a prescribed threshold, the trapping program may be terminated or otherwise modified).						
41. Protect existing riparian habitat downstream of the knickpoint in GERA for the least Bell's vireo, southwestern willow flycatcher and other riparian nesting bird species.	<b>Not consistent.</b> B-5 would not be consistent because while it would avoid impacts to GERA, development is proposed upstream, potentially resulting in downstream impacts on habitat quality in GERA.	<b>Not consistent.</b> B-6 would not be consistent because while it would avoid impacts to GERA, development is proposed upstream, potentially resulting in downstream impacts on habitat quality in GERA.	<b>Consistent.</b> B-8 would be consistent because it would avoid GERA and upstream development.	<b>Consistent.</b> B-9 would be consistent because it would avoid GERA and upstream development.	<b>Consistent.</b> B-10 would be consistent because it would avoid GERA and upstream development.	<b>Consistent.</b> B-11 would be consistent because it would avoid GERA and upstream development.
42. Protect downstream habitat for the arroyo toad, least Bell's vireo, arroyo chub, and other sensitive riparian and aquatic species by maintaining hydrology, water quality and sediment delivery in San Juan Creek and minimizing additional loadings of nutrients or toxics.	<b>Consistent.</b> B-5 would be consistent because management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-6 would be consistent because management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-8 would be consistent because management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. In addition, if additional funding were identified to implement the Adaptive Management Program, hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-9 would be consistent because management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-10 would be consistent because management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-11 would be consistent because management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.
43. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing as part of the Adaptive Management Program, and prevention of human disturbance.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent if additional funding were identified to implement the Adaptive Management Program.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
<b>Gobernadora Canyon Sub-basin Restoration Recommendations</b>						
44. Implement a coastal sage scrub restoration program in Sulphur Canyon to enhance habitat connectivity and mitigate for impacts to existing habitat associated with future development.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in a substantial portion of Sulphur Canyon targeted for restoration in the Habitat Restoration Plan component of the Adaptive Management Program, although the northeast portion would be available for restoration.	<b>Consistent.</b> B-6 would be consistent because although it proposes development in the lower portion of Sulphur Canyon, the northern portion of the canyon targeted for restoration by the Habitat Restoration Plan component of the Adaptive Management Program would not be developed.	<b>Could be consistent.</b> B-8 could be consistent if additional funding were identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in Sulphur Canyon and would implement an Adaptive Management Program that includes a Habitat Restoration Plan that targets Sulphur Canyon for coastal sage scrub restoration.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in Sulphur Canyon and would implement an Adaptive Management Program that includes a Habitat Restoration Plan that targets Sulphur Canyon for coastal sage scrub restoration.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in Sulphur Canyon and would implement an Adaptive Management Program that includes a Habitat Restoration Plan that targets Sulphur Canyon for coastal sage scrub restoration.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
45. Translocate salvaged many-stemmed dudleya to CSS/VGL restoration and enhancement areas where feasible and appropriate. Potential restoration and enhancement areas in the sub-basin include Chiquadora Ridge. Receiver areas should support clay soils suitable for dudleya and should be placed in locations that maximize connectivity and genetic exchange.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in a substantial portion of Sulphur Canyon targeted for restoration in the Habitat Restoration Plan component of the Adaptive Management Program, although the northeast portion would be available for restoration.	<b>Consistent.</b> B-6 would be consistent because although it proposes development in the lower portion of Sulphur Canyon, the northern portion of the canyon targeted for restoration by the Habitat Restoration Plan component of the Adaptive Management Program would not be developed.	<b>Could be consistent.</b> B-8 could be consistent if additional funding were identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it proposes development in this sub-basin consistent with implementation of the CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes development in this sub-basin consistent with implementation of the CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes development in this sub-basin consistent with implementation of the CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan.
46. Salvage clay topsoils from development areas where feasible and appropriate and transport to restoration areas. Salvaged topsoils may be used to create additional suitable dudleya habitat and may contain seedbank.	<b>Consistent.</b> B-5 would be consistent because it proposes development in this sub-basin consistent with implementation of CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan. Salvaged topsoils could be transported to the available restoration area in Sulphur Canyon or elsewhere in the Habitat Reserve such as Chiquadora or Chiquita ridges.	<b>Consistent.</b> B-6 would be consistent because it proposes development in this sub-basin consistent with implementation of CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan. Salvaged topsoils could be transported to the available restoration area in Sulphur Canyon or elsewhere in the Habitat Reserve such as Chiquadora or Chiquita ridges.	<b>Could be consistent.</b> B-8 could be consistent because it proposes development in this sub-basin consistent with implementation of CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation. To be consistent additional funding would need to be identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it proposes development in this sub-basin consistent with implementation of the CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes development in this sub-basin consistent with implementation of the CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes development in this sub-basin consistent with implementation of the CSS/VGL restoration recommendations via implementation of the Adaptive Management Program and the Plant Species Translocation, Propagation and Management Plan.
47. Translocate salvaged intermediate mariposa lily bulbs to areas where suitable soil conditions occur. Specific translocation areas have not been identified, but based on the existing distribution, potential general translocation areas in the sub-basin area include Chiquadora Ridge.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
48. Initiate an intermediate mariposa lily seed collection program in 2003 if sufficient rain falls to warrant the collection program. Receiver sites should be identified in the winter of 2003 and a pilot planting program should be implemented to determine the effectiveness of propagation from seed.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
49. Implement a restoration program in Gobernadora Creek which addresses (1) the historic creek meander above the knickpoint; and (2) upstream land use induced channel incision and erosion, including potentially excessive surface and groundwater originating upstream.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development in the northern portion of the sub-basin that would preclude implementing the Habitat Restoration Plan.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development in the northern portion of the sub-basin that would preclude implementing the Habitat Restoration Plan.	<b>Could be consistent.</b> B-8 could be consistent, but would require additional funding to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-4 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it would implement the Habitat Restoration Plan component of the Adaptive Management Program.
<b>CENTRAL SAN JUAN &amp; TRAMPAS CANYON SUB-BASIN</b>						
<b>Central San Juan Subunit Protection Recommendations</b>						
50. Maintain and manage riparian and aquatic habitats along San Juan Creek for breeding populations of the arroyo toad, least Bell's vireo, and other sensitive species such as yellow warbler, yellow-breasted chat, raptors, southwestern pond turtle, two-striped garter snake, western spadefoot toad, silvery legless lizard, arroyo chub and threespine stickleback.	<b>Consistent.</b> B-5 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control. A realigned Ortega Highway would bridge San Juan Creek and avoid aquatic resources.	<b>Consistent.</b> B-6 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control. A realigned Ortega Highway would bridge San Juan Creek and avoid aquatic resources.	<b>Consistent.</b> B-8 could be consistent because it would avoid riparian and aquatic habitats along San Juan Creek thereby maintaining these habitats. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. For B-8 to be consistent, additional funding would need to be identified to implement the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. If the Adaptive Management Program could be funded, hydrology and sediment transport would be improved through invasive species control. A realigned Ortega Highway would bridge San Juan Creek and avoid aquatic resources.	<b>Consistent.</b> B-9 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control. A realigned Ortega Highway would bridge San Juan Creek and avoid aquatic resources.	<b>Consistent.</b> B-10 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control. A realigned Ortega Highway would bridge San Juan Creek and avoid aquatic resources.	<b>Consistent.</b> B-11 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control. A realigned Ortega Highway would bridge San Juan Creek and avoid aquatic resources.



**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
51. Provide upland foraging and estivation habitat within the upland terraces in the floodplain of San Juan Creek, with a particular focus on the south side of the creek, to maintain existing population levels of the arroyo toad.	<b>Not consistent.</b> B-5 would not be consistent because although it would avoid San Juan Creek and adjacent floodplain terrace foraging habitat, as well as proposes relocation of Ortega Highway which could provide improved estivation habitat south of the creek, development is proposed south of the creek adjacent to the key location of arroyo toads without substantial setbacks from the creek.	<b>Not consistent.</b> B-6 would not be consistent because while it would avoid San Juan Creek and adjacent floodplain terrace foraging habitat, as well as proposes relocation of Ortega Highway which could provide improved estivation habitat south of the creek, development is proposed south of the creek adjacent to the key location of arroyo toads without substantial setbacks from the creek.	<b>Consistent.</b> B-8 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace foraging habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and this development would be set back from the creek. B-8 also proposes relocation of Ortega Highway which would provide improved estivation habitat south of the creek.	<b>Consistent.</b> B-9 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace foraging/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and within the Central San Juan sub-basin to an area that would be set back 300 ft from the creek. B-9 also proposes relocation of Ortega Highway which would provide improved foraging/estivation habitat south of the creek.	<b>Consistent.</b> B-10 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace foraging/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and within the Central San Juan sub-basin to an area that would be set back 300 ft from the creek. B-10 also proposes relocation of Ortega Highway which would provide improved foraging/estivation habitat south of the creek.	<b>Consistent.</b> B-11 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace foraging/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and within the Central San Juan sub-basin to an area that would be set back 300 ft from the creek. B-11 also proposes relocation of Ortega Highway which would provide improved foraging/estivation habitat south of the creek.
52. Protect upland habitat adjoining riparian and aquatic habitats to support nesting sites of southwestern pond turtle.	<b>Not consistent.</b> B-5 would not be consistent because although it would avoid San Juan Creek and adjacent floodplain terrace nesting/estivation habitat, as well as proposes relocation of Ortega Highway which could provide improved nesting/estivation habitat south of the creek, development is proposed south of the creek adjacent without substantial setbacks from the creek.	<b>Not consistent.</b> B-6 would not be consistent because although it would avoid San Juan Creek and adjacent floodplain terrace nesting/estivation habitat, as well as proposes relocation of Ortega Highway which could provide improved nesting/estivation habitat south of the creek, development is proposed south of the creek adjacent without substantial setbacks from the creek.	<b>Consistent.</b> B-8 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace nesting/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and this development would be set back from the creek. B-8 also proposes relocation of Ortega Highway which would provide improved nesting/estivation habitat south of the creek.	<b>Consistent.</b> B-9 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace nesting/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and within the Central San Juan sub-basin to an area that would be set back 300 ft from the creek. B-9 also proposes relocation of Ortega Highway which would provide improved nesting/estivation habitat south of the creek.	<b>Consistent.</b> B-10 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace nesting/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and within the Central San Juan sub-basin to an area that would be set back 300 ft from the creek. B-10 also proposes relocation of Ortega Highway which would provide improved nesting/estivation habitat south of the creek.	<b>Consistent.</b> B-11 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace nesting/estivation habitat. Proposed development on the south side of the creek would be limited to the Trampas sub-basin and within the Central San Juan sub-basin to an area that would be set back 300 ft from the creek. B-11 also proposes relocation of Ortega Highway which would provide improved nesting/estivation habitat south of the creek.
53. Protect upland habitat adjoining riparian and aquatic habitats to support all life stages of western spadefoot toad.	<b>Consistent.</b> B-5 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace estivation habitat.	<b>Consistent.</b> B-6 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace estivation habitat.	<b>Consistent.</b> B-8 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace estivation habitat.	<b>Consistent.</b> B-9 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace estivation habitat.	<b>Consistent.</b> B-10 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace estivation habitat.	<b>Consistent.</b> B-11 would be consistent because it would avoid San Juan Creek and adjacent floodplain terrace estivation habitat.
54. Protect breeding habitat and, to the extent feasible, protect foraging habitat for raptors adjacent to San Juan Creek.	<b>Not consistent.</b> B-5 would not be consistent because although breeding habitat in San Juan Creek and the major adjacent tributaries would be protected, they would be constrained because development would occur along much of the interface with the creek. Impacts to adjacent foraging habitat in Chiquita, Gobernadora, Trampas and Central San Juan sub-basins also would occur as a result of the B-5 development pattern.	<b>Not consistent.</b> B-6 would not be consistent because although breeding habitat in San Juan Creek and adjacent major tributaries (e.g., Chiquita, Gobernadora) and foraging habitat in the Chiquita sub-basin would be protected, development would occur along much of the interface with the creek and impacts to foraging habitat in Gobernadora, Trampas and Central San Juan sub-basins would occur as a result of the B-6 development pattern.	<b>Not consistent.</b> B-8 would not be consistent because although breeding habitat in San Juan Creek and adjacent major tributaries (e.g., Chiquita, Gobernadora) and foraging habitat in the Chiquita sub-basin would be protected, as would foraging habitat in Central San Juan, impacts to foraging habitat in Gobernadora and Trampas sub-basins would occur as a result of the B-8 development pattern.	<b>Not consistent.</b> B-9 would not be consistent because although breeding habitat in San Juan Creek and the major adjacent tributaries would be protected, impacts to adjacent foraging habitat in the lower Chiquita, Gobernadora, Trampas and Central San Juan sub-basins would occur as a result of the B-9 development pattern.	<b>Not consistent.</b> B-10 would not be consistent because although breeding habitat in San Juan Creek and the major adjacent tributaries would be protected, impacts to adjacent foraging habitat in the lower Chiquita, Gobernadora, Trampas and Central San Juan sub-basins would occur as a result of the B-10 development pattern.	<b>Not consistent.</b> B-11 would not be consistent because although breeding habitat in San Juan Creek and the major adjacent tributaries would be protected, impacts to adjacent foraging habitat in the lower Chiquita, Gobernadora, Trampas and Central San Juan sub-basins would occur as a result of the B-11 development pattern.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
55. Provide floodplain and upland habitat linkages adjacent to San Juan Creek for east-west and north-south dispersal by the California gnatcatcher between the Chiquita Canyon and Cristianitos sub-basins.	<b>Not consistent.</b> B-5 would not be consistent because although it would protect the floodplain habitat linkage along San Juan Creek (linkage J), the east-west upland linkage would be constrained by development along the interface with San Juan Creek, as would the north-south linkage G along Gobernadora Creek and the linkage J/N to Cristianitos.	<b>Not consistent.</b> B-6 would not be consistent because although it would protect the floodplain habitat along San Juan Creek (linkage J), the north-south linkages along Chiquita Ridge (C) and Chiquadora Ridge (G) would be protected. The east-west upland linkage would be constrained by development along the interface with San Juan Creek and would linkages J and N to Cristianitos.	<b>Consistent.</b> B-8 would be consistent because linkages along Chiquita Ridge (C), Chiquadora Ridge (G), San Juan Creek (J) and Cristianitos (N) would be protected.	<b>Consistent.</b> B-9 would be consistent because it would provide for upland habitat linkages in an east- west direction by the protection of San Juan Creek and adjacent floodplain terraces (linkage J). The north-south movement would be provided by protection of Chiquita (C) and Chiquadora (G) ridges, protection of San Juan Creek (J) and adjacent floodplain terraces and protection of the coastal sage scrub and gnatcatcher sites located in the northern portion of the Cristianitos sub-basin (N).	<b>Consistent.</b> B-10 would be consistent because it would provide for upland habitat linkages in an east- west direction by the protection of San Juan Creek and adjacent floodplain terraces (linkage J). The north-south movement would be provided by protection of Chiquita (C) and Chiquadora (G) ridges, protection of San Juan Creek (J) and adjacent floodplain terraces and protection of the coastal sage scrub and gnatcatcher sites located in the northern portion of the Cristianitos sub-basin (N).	<b>Consistent.</b> B-11 would be consistent because it would provide for upland habitat linkages in an east- west direction by the protection of San Juan Creek and adjacent floodplain terraces (linkage J). The north-south movement would be provided by protection of Chiquita (C) and Chiquadora (G) ridges, protection of San Juan Creek (J) and adjacent floodplain terraces and protection of the coastal sage scrub and gnatcatcher sites located in the northern portion of the Cristianitos sub-basin (N).
56. Provide a habitat linkage at the confluences of Verdugo Canyon and Bell Canyon with San Juan Creek. Maintain an adequate habitat linkage along central San Juan Creek for "live-in" dispersal and movement habitat for terrestrial species, including mountain lion, bobcat, coyote and mule deer between sub-basins and especially between Chiquita Ridge, Canada Gobernadora, Bell Canyon, upper San Juan Creek, Verdugo Canyon, Trampas Canyon and Cristianitos Canyon.	<b>Not consistent.</b> B-5 would not be consistent because while it would provide for protection of the floodplain habitat linkage along San Juan Creek (J), upland habitat and the San Juan, Bell and Verdugo confluence may be compromised by the proximity of development. Linkages along Chiquita Ridge (C), Chiquadora/Gobernadora (G), and Trampas/Cristianitos (J, N) would be constrained by proximity of development. Movement through Verdugo Canyon and from Verdugo to Lucas (L and M) also would be impacted under this alternative.	<b>Not consistent.</b> B-6 would not be consistent because while it would provide for protection of the floodplain habitat linkage along San Juan Creek (J), upland habitat north and south of San Juan Creek may be compromised by the proximity of development. The confluence of San Juan, Bell and Verdugo generally would be protected under B-6, as would linkages along Chiquita Ridge (C), Chiquadora/Gobernadora (G) and Radio Tower Road (K). Linkages from east Trampas to Cristianitos (J, N) would be constrained.	<b>Consistent.</b> B-8 would be consistent because linkages along Chiquita Ridge (C), Chiquadora/Gobernadora (G), San Juan Creek, Bell Canyon, and Verdugo Canyon (J), Radio Tower Road (K) and to Cristianitos (N) would be protected.	<b>Consistent.</b> B-9 would be consistent because proposed development would provide for a minimum 300-ft setback on both sides of the creek at its narrowest point and thus provide for a minimum linkage width of about 900 ft. It would provide for a habitat linkage (J) at the confluence of Bell, Verdugo and San Juan Creeks. B-9 also would protect linkages between central San Juan Creek and Chiquita Ridge (C), Chiquadora/Gobernadora (G), Bell Canyon, upper San Juan Creek, and Verdugo Canyon (J), Radio Tower Road (K), Trampas Canyon and Cristianitos Canyon (J, N). The realignment of Ortega Highway would include a bridge over San Juan Creek south of the confluence with Bell Canyon which would be constructed to avoid impacts to the habitat linkage.	<b>Consistent.</b> B-10 would be consistent because proposed development would provide for a minimum 300-ft setback on both sides of the creek at its narrowest point and thus provide for a minimum linkage width of about 900 ft. It would provide for a habitat linkage (J) at the confluence of Bell, Verdugo and San Juan Creeks. B-10 also would protect linkages between central San Juan Creek and Chiquita Ridge (C), Chiquadora/Gobernadora (G), Bell Canyon, upper San Juan Creek, and Verdugo Canyon (J), Radio Tower Road (K), Trampas Canyon and Cristianitos Canyon (J, N). The realignment of Ortega Highway would include a bridge over San Juan Creek south of the confluence with Bell Canyon which would be constructed to avoid impacts to the habitat linkage.	<b>Consistent.</b> B-11 would be consistent because proposed development would provide for a minimum 300-ft setback on both sides of the creek at its narrowest point and thus provide for a minimum linkage width of about 900 ft. It would provide for a habitat linkage (J) at the confluence of Bell, Verdugo and San Juan Creeks. B-11 also would protect linkages between central San Juan Creek and Chiquita Ridge (C), Chiquadora/Gobernadora (G), Bell Canyon, upper San Juan Creek, and Verdugo Canyon (J), Radio Tower Road (K), Trampas Canyon and Cristianitos Canyon (J, N). The realignment of Ortega Highway would include a bridge over San Juan Creek south of the confluence with Bell Canyon which would be constructed to avoid impacts to the habitat linkage.
57. Address the potential to improve north-south movement of large wildlife between San Juan Creek and Trampas Canyon and Cristianitos Canyon by assessing the benefits and feasibility of relocating Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-5 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-6 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-9 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-10 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-11 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.

**TABLE M-4 (Continued)  
SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>Central San Juan Subunit Management Recommendations</b>						
58. Implement a bullfrog control program for the Cal-Mat Lake within San Juan Creek to help protect arroyo toads.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes bullfrog control as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes bullfrog control as part of the Invasive Species Control Plan.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including the Invasive Species Control Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes bullfrog control as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes bullfrog control as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes bullfrog control as part of the Invasive Species Control Plan.
59. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing as part of the Adaptive Management Program, and prevention of human disturbance.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including the Invasive Species Control Plan and a Grazing Management Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
<b>Central San Juan Subunit Restoration Recommendations</b>						
60. In coordination with upstream eradication efforts, implement a giant reed control program for San Juan Creek within Rancho Mission Viejo boundaries to protect arroyo toad habitat and other riparian areas.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes giant reed control as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes giant reed control as part of the Invasive Species Control Plan.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including the Invasive Species Control Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes giant reed control as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes giant reed control as part of the Invasive Species Control Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes giant reed control as part of the Invasive Species Control Plan.
61. Translocate salvaged many-stemmed dudleya to CSS/VGL restoration and enhancement areas where feasible and appropriate. Potential nearby restoration and enhancement include Chiquadora Ridge. Receiver areas should support clay soils suitable for many-stemmed dudleya and should be placed in locations that maximize connectivity and genetic exchange.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes many-stemmed dudleya salvage and translocation as part of the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes many-stemmed dudleya salvage and translocation as part of the Plant Species Translocation, Propagation and Management Plan.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including the Plant Species Translocation, Propagation and Management Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes many-stemmed dudleya salvage and translocation to Chiquadora Ridge as part of the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes many-stemmed dudleya salvage and translocation to Chiquadora Ridge as part of the Plant Species Translocation, Propagation and Management Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes many-stemmed dudleya salvage and translocation to Chiquadora Ridge as part of the Plant Species Translocation, Propagation and Management Plan.
62. Salvage clay topsoils from development areas where feasible and appropriate and transport to restoration areas. Salvaged topsoils may be used to create additional suitable dudleya habitat and may contain seedbank.	<b>Consistent.</b> B-5 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan as part of the Adaptive Management Program.	<b>Consistent.</b> B-6 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan as part of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including the Plant Species Translocation, Propagation and Management Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan as part of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan as part of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it would implement the Plant Species Translocation, Propagation and Management Plan as part of the Adaptive Management Program.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
63. Translocate salvaged intermediate mariposa lily bulbs to areas where suitable soil conditions occur. Specific translocation areas have not been identified, but based on the existing distribution, potential general translocation areas in the sub-basin area include Chiquadora Ridge.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
64. Initiate an intermediate mariposa lily seed collection program in 2003 if sufficient rain falls to warrant the collection program. Receiver sites should be identified in the winter of 2003 and a pilot planting program should be implemented to determine the effectiveness of propagation by seed.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
<b>Trampas Canyon Subunit Protection Recommendations</b>						
65. Protect the vernal pools and their contributing hydrologic sources, Riverside fairy shrimp and San Diego fairy shrimp, as well as the slope wetlands and their primary sub-surface water supply recharge characteristics along Radio Tower Road.	<b>Not consistent.</b> B-5 would not be consistent because it would impact one vernal pool and its hydrology source, and protect one vernal pool and its hydrologic source.	<b>Not consistent.</b> B-6 would not be consistent because it would impact one vernal pool and its hydrology source, and protect one vernal pool and its hydrologic source.	<b>Consistent.</b> B-8 would be consistent because it would protect the Radio Tower Road vernal pools and slope wetlands and their contributing hydrologic sources.	<b>Consistent.</b> B-9 would be consistent because it would protect the Radio Tower Road vernal pools and slope wetlands and their contributing hydrologic sources.	<b>Not consistent.</b> B-10 would not be consistent because it would impact one vernal pool and its hydrology source, and protect one vernal pool and its hydrologic source.	<b>Not consistent.</b> B-11 would not be consistent because it would impact one vernal pool and its hydrology source, and protect one vernal pool and its hydrologic source.
66. Avoid impacts to the important populations of California gnatcatchers and coastal sage scrub to the maximum extent feasible to maintain resident and dispersal habitat for the gnatcatcher between San Juan Creek and Cristianitos Canyon and populations on Camp Pendleton.	<b>Not consistent.</b> B-5 would not be consistent because while it would avoid important population 11 (upper Cristianitos Canyon), it would impact important population 9 (Trampas Canyon). B-5 would thus constrain resident and dispersal habitat from San Juan Creek through the Trampas sub-basin. Movement from the Cristianitos sub-basin to Camp Pendleton would be protected.	<b>Not consistent.</b> B-6 would not be consistent because while it would avoid important population 11 (upper Cristianitos Canyon), it would impact important population 9 (Trampas Canyon). B-5 would thus constrain resident and dispersal habitat from San Juan Creek through the Trampas sub-basin. Movement from the Cristianitos sub-basin to Camp Pendleton would be protected.	<b>Consistent.</b> B-8 would be consistent because it would avoid important population 9 (Trampas Canyon) and 11 (upper Cristianitos Canyon). B-8 thus would provide for resident and dispersal habitat from San Juan Creek through the Trampas sub-basin to the Cristianitos sub-basin southward to Camp Pendleton.	<b>Consistent.</b> B-9 would be consistent because it would avoid important population 9 (Trampas Canyon) and important population 11 (upper Cristianitos Canyon). B-9 thus would provide for resident and dispersal habitat from San Juan Creek through the Trampas sub-basin to the Cristianitos sub-basin southward to Camp Pendleton.	<b>Consistent.</b> B-10 would be consistent because it would avoid important population 9 (Trampas Canyon) and important population 11 (upper Cristianitos Canyon). B-9 thus would provide for resident and dispersal habitat from San Juan Creek through the Trampas sub-basin to the Cristianitos sub-basin southward to Camp Pendleton.	<b>Consistent.</b> B-11 would be consistent because it would avoid important population 9 (Trampas Canyon) and important population 11 (upper Cristianitos Canyon). B-9 thus would provide for resident and dispersal habitat from San Juan Creek through the Trampas sub-basin to the Cristianitos sub-basin southward to Camp Pendleton.

**TABLE M-4 (Continued)  
SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
67. Maintain upland north-south habitat linkages through the central and western portions of the Trampas Canyon subunit to convey wildlife movement and dispersal (especially gnatcatchers) between San Juan Creek, San Juan Capistrano, San Clemente, Cristianitos Canyon, the Donna O'Neill Conservancy at Rancho Mission Viejo and Camp Pendleton.	<b>Consistent.</b> B-5 would be consistent because it would protect linkage K. Linkage J/N would be somewhat constrained by proximity of development. Linkage N would be protected.	<b>Consistent.</b> B-6 would be consistent because it would protect linkage K. Linkage J/N would be somewhat constrained by proximity of development. Linkage N would be protected.	<b>Consistent.</b> B-8 would be consistent because it would protect the north-south habitat linkages J and K.	<b>Consistent.</b> B-9 would be consistent because it would provide for the protection of north-south habitat linkages J, K and N.	<b>Consistent.</b> B-10 would be consistent because it would provide for the protection of north-south habitat linkages J, K and N.	<b>Consistent.</b> B-11 would be consistent because it would provide for the protection of north-south habitat linkages J, K and N.
68. Maintain upland east-west habitat linkage/wildlife corridor south of the artificial lake to link Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente with the Donna O'Neill Land Conservancy and the Gabino, La Paz and Talega movement corridors. This habitat linkage should allow for dispersal of gnatcatchers and other avian species, as well as provide a movement corridor for large mammals such as bobcat, coyote, and mule deer.	<b>Not consistent.</b> B-5 would not be consistent because the east-west portion of habitat linkage K south of Trampas Canyon Dam, which links to Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente, would be constrained.	<b>Not consistent.</b> B-6 would not be consistent because the east-west portion of habitat linkage K south of Trampas Canyon Dam, which links to Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente, would be constrained.	<b>Not consistent.</b> B-8 would not be consistent because the east-west portion of habitat linkage K south of Trampas Canyon Dam, which links to Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente, would be constrained.	<b>Not consistent.</b> B-9 would not be consistent because the east-west portion of habitat linkage K south of Trampas Canyon Dam, which links to Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente, would be constrained.	<b>Not consistent.</b> B-10 would not be consistent because the east-west portion of habitat linkage K south of Trampas Canyon Dam, which links to Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente, would be constrained.	<b>Not consistent.</b> B-11 would not be consistent because the east-west portion of habitat linkage K south of Trampas Canyon Dam, which links to Prima Deshecha, Talega Open Space and other habitat to the west in San Juan Capistrano and San Clemente, would be constrained.
69. Address the potential to improve north-south movement of large wildlife between San Juan Creek and Trampas Canyon and Cristianitos Canyon by assessing the benefits and feasibility of relocating Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-5 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-6 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-9 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-10 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.	<b>Consistent.</b> B-11 would be consistent because it proposes the relocation of Ortega Highway to the north side of San Juan Creek.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
70. Maintain and manage riparian and aquatic habitats along San Juan Creek for arroyo toad, least Bell's vireo, and other sensitive species such as yellow warbler, yellow-breasted chat, raptors, southwestern pond turtle, two-striped garter snake, western spadefoot toad, silvery legless lizard, arroyo chub and threespine stickleback.	<b>Consistent.</b> B-5 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-6 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Could be consistent.</b> B-8 could be consistent because it would avoid riparian and aquatic habitats along San Juan Creek thereby maintaining these habitats. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. However, to be consistent additional funding would need to be identified to implement the Adaptive Management Program, including the Invasive Species Control Plan and Habitat Restoration Plan. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-9 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan, and Grazing Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-10 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan, and Grazing Management Plan. Management of water quality would be adaptively managed by the development entities as described in Chapter 9. However, to be consistent additional funding would need to be identified to implement the Adaptive Management Program, including the Invasive Species Control Plan and Habitat Restoration Plan. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-11 would be consistent because it would avoid riparian and aquatic habitats along San Juan Creek and management would occur through implementation of the Adaptive Management Program, including the Invasive Species Control Plan, Habitat Restoration Plan, and Grazing Management Plan. Management of water quality would be adaptively managed by the development entities as described in Chapter 9. However, to be consistent additional funding would need to be identified to implement the Adaptive Management Program, including the Invasive Species Control Plan and Habitat Restoration Plan. Hydrology and sediment transport would be improved through invasive species control.
71. Protect upland terraces and habitat adjoining San Juan Creek to support arroyo toad foraging and estivation.	<b>Consistent.</b> B-5 would be consistent because it would avoid the upland terraces within the 100-year floodplain of San Juan Creek and therefore protect arroyo toad breeding and estivation habitat.	<b>Consistent.</b> B-6 would be consistent because it would avoid the upland terraces within the 100-year floodplain of San Juan Creek and therefore protect arroyo toad breeding and estivation habitat.	<b>Consistent.</b> B-8 would be consistent because it would avoid the upland terraces within the 100-year floodplain of San Juan Creek and therefore protect arroyo toad breeding and estivation habitat.	<b>Consistent.</b> B-9 would be consistent because it would avoid the upland terraces within 300 feet of the 100-year floodplain of San Juan Creek and therefore would protect arroyo toad breeding and estivation habitat.	<b>Consistent.</b> B-10 would be consistent because it would avoid the upland terraces within 300 feet of the 100-year floodplain of San Juan Creek and therefore would protect arroyo toad breeding and estivation habitat.	<b>Consistent.</b> B-11 would be consistent because it would avoid the upland terraces within 300 feet of the 100-year floodplain of San Juan Creek and therefore would protect arroyo toad breeding and estivation habitat.
72. Protect the Trampas Canyon subunit component (approximately nine discrete locations) of the major population of many-stemmed dudleya that extends from the southern portion of the Trampas Canyon in the north, through the Cristianitos Canyon sub-basin south to the Talega development open space located in the San Clemente Watershed.	<b>Consistent.</b> B-5 would be consistent because it would avoid the locations of many-stemmed dudleya in the Trampas Canyon subunit.	<b>Consistent.</b> B-6 would be consistent because it would avoid the locations of many-stemmed dudleya in the Trampas Canyon subunit.	<b>Consistent.</b> B-8 would be consistent because it would avoid the locations of many-stemmed dudleya in the Trampas Canyon subunit.	<b>Consistent.</b> B-9 would be consistent because it would avoid the locations of many-stemmed dudleya in the Trampas Canyon subunit.	<b>Consistent.</b> B-10 would be consistent because it would avoid the locations of many-stemmed dudleya in the Trampas Canyon subunit.	<b>Consistent.</b> B-11 would be consistent because it would avoid the locations of many-stemmed dudleya in the Trampas Canyon subunit.
73. Protect the eight known locations of intermediate mariposa lily comprising an important population in the subunit.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>Trampas Canyon Subunit Management Recommendations</b>						
74. Maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek to preserve breeding habitat for the arroyo toad population and other aquatic species in San Juan Creek.	<b>Consistent.</b> B-5 would be consistent because it would maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it would maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because it would maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-9 would be consistent because it would maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek through management of water quality. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-10 would be consistent because it would maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek through implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.	<b>Consistent.</b> B-11 would be consistent because it would maintain stormwater flow characteristics comparable to existing conditions from Trampas Canyon into San Juan Creek through implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport would be improved through invasive species control.
75. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing as part of the Adaptive Management Program, and prevention of human disturbance.	<b>Consistent.</b> B-5 would be consistent because it would implement an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it would implement an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including an Invasive Species Control Plan and a Grazing Management Plan, was identified. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-9 would be consistent because it would implement an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it would implement an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it would implement an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
<b>Verdugo Canyon Sub-basin Protection Recommendations</b>						
76. Protect, to the extent feasible, patches of coastal sage scrub and patches of southern cactus scrub that support cactus wren with a focus on maintaining contiguous habitat patches that provide north-south dispersal opportunities for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.	<b>Consistent.</b> B-5 would be consistent because it would protect adequate contiguous coastal sage scrub in the eastern portion of the sub-basin to provide dispersal habitat for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.	<b>Consistent.</b> B-6 would be consistent because it would protect adequate contiguous coastal sage scrub in the eastern portion of the sub-basin to provide dispersal habitat for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the sub-basin and thus would protect contiguous coastal sage scrub to provide dispersal habitat for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.	<b>Consistent.</b> B-9 would be consistent because it would protect adequate contiguous coastal sage scrub in the eastern portion of the sub-basin to provide dispersal habitat for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.	<b>Consistent.</b> B-10 would be consistent because it would protect adequate contiguous coastal sage scrub in the eastern portion of the sub-basin to provide dispersal habitat for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.	<b>Consistent.</b> B-11 would be consistent because it would protect adequate contiguous coastal sage scrub in the eastern portion of the sub-basin to provide dispersal habitat for the cactus wren and other species between the Lucas Canyon sub-basin to the north, and the Gabino Canyon/Blind Canyon and La Paz sub-basins to the south.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
77. Maintain habitat connectivity for movement of large mammals such as mountain lion, bobcat, coyote and mule deer between San Juan Creek and Cleveland National Forest; and between upper Verdugo Canyon and the headwaters of Gabino Creek.	<b>Not consistent.</b> B-5 would not be consistent because while it would provide for a floodplain habitat linkage along San Juan Creek to the CNF (linkage J), movement through the confluence of San Juan Creek and Verdugo Creek (linkages J and L) would be constrained by adjacent development and a collector road in the canyon. Linkage M from Upper Gabino to upper Verdugo would be protected under this alternative.	<b>Not consistent.</b> B-5 would not be consistent because while it would provide for a floodplain habitat linkage along San Juan Creek to the CNF (linkage J), movement through the confluence of San Juan Creek and Verdugo Creek would be constrained by development at the mouth of Verdugo Canyon. Linkage M from Upper Gabino to upper Verdugo would be affected under this alternative by development in Upper Gabino Canyon.	<b>Consistent.</b> B-8 would be consistent because no development would occur in the sub-basin under B-8, providing for unobstructed habitat connectivity along San Juan Creek to the CNF (linkage J), and between upper Verdugo Canyon and the headwaters of Gabino Creek (linkage M).	<b>Consistent.</b> B-9 would be consistent because it would provide for habitat connectivity along San Juan Creek to the CNF (linkage J). Impacts to the confluence of Bell, San Juan and Verdugo would be minimized by the inclusion of setbacks in development areas north and south of San Juan Creek. Habitat connectivity between upper Verdugo Canyon and the headwaters of Gabino Creek (M) would be protected as no development is proposed in the Gabino sub-basin and in Verdugo Creek and upper Verdugo Canyon.	<b>Consistent.</b> B-10 would be consistent because it would provide for habitat connectivity along San Juan Creek to the CNF (linkage J). Impacts to the confluence of Bell, San Juan and Verdugo would be minimized by the inclusion of setbacks in development areas north and south of San Juan Creek. Habitat connectivity between upper Verdugo Canyon and the headwaters of Gabino Creek (M) would be protected as no development is proposed in the Gabino sub-basin and in Verdugo Creek and upper Verdugo Canyon.	<b>Consistent.</b> B-11 would be consistent because it would provide for habitat connectivity along San Juan Creek to the CNF (linkage J). Impacts to the confluence of Bell, San Juan and Verdugo would be minimized by the inclusion of setbacks in development areas north and south of San Juan Creek. Habitat connectivity between upper Verdugo Canyon and the headwaters of Gabino Creek (M) would be protected as no development is proposed in the Gabino sub-basin and in Verdugo Creek and upper Verdugo Canyon.
78. Protect riparian habitat that provides nest sites for Cooper's hawk, red-tailed hawk, red-shouldered hawk and barn owl.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development and a collector road within Verdugo Canyon that would result in impacts to raptor riparian breeding habitat.	<b>Consistent.</b> B-6 would be consistent because impacts to raptor riparian breeding habitat would be avoided in the sub-basin. B-6 proposes to upgrade an existing gravel Ranch road to rural collector road through a portion of the sub-basin to the south of Verdugo Canyon. This road is not anticipated to have substantial impacts on riparian habitat (see circulation consistency analysis in Section 11.3.2).	<b>Consistent.</b> B-8 would be consistent because no development would occur in the sub-basin.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to raptor riparian breeding habitat in the sub-basin.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to raptor riparian breeding habitat in the sub-basin.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to raptor riparian breeding habitat in the sub-basin.
79. Protect grassland and wetland/riparian habitat at the mouth of Verdugo Canyon near Ortega Highway to retain tricolored blackbird habitat and to provide for wildlife movement to San Juan Creek.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development and a collector road at the mouth of Verdugo Canyon that would result in impacts to grassland and wetland/riparian habitats.	<b>Not consistent.</b> B-6 would not be consistent because while it would avoid impacts to wetland/riparian habitat at the mouth of Verdugo Canyon, proposed development in the southern portion of the mouth of the canyon would impact grassland habitat.	<b>Consistent.</b> B-8 would be consistent because no development would occur in the sub-basin.	<b>Not consistent.</b> B-9 would not be consistent because while wetland/riparian and grassland habitat north of the canyon would be protected, the patch of grassland in the southern portion of the mouth of the canyon would be developed.	<b>Not consistent.</b> B-10 would not be consistent because while wetland/riparian and grassland habitat north of the canyon would be protected, the patch of grassland in the southern portion of the mouth of the canyon would be developed.	<b>Not consistent.</b> B-11 would not be consistent because while wetland/riparian and grassland habitat north of the canyon would be protected, the patch of grassland in the southern portion of the mouth of the canyon would be developed.
80. Protect Verdugo Canyon hydrology to maintain sources of coarse sediment that are important for arroyo toad breeding habitat in downstream areas.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development and a collector road within Verdugo Canyon that would impact existing hydrology and affect sources of coarse sediment.	<b>Consistent.</b> B-6 would be consistent because it would largely avoid development in the Verdugo sub-basin and therefore would maintain its existing hydrology and coarse sediment generation.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the sub-basin.	<b>Consistent.</b> B-9 would be consistent because development within the Verdugo sub-basin would be limited and would be designed to avoid drainage into Verdugo Creek, and, therefore, would protect the primary sources of coarse sediment in the canyon.	<b>Consistent.</b> B-10 would be consistent because development within the Verdugo sub-basin would be limited and would be designed to avoid drainage into Verdugo Creek, and, therefore, would protect the primary sources of coarse sediment in the canyon.	<b>Consistent.</b> B-11 would be consistent because development within the Verdugo sub-basin would be limited and would be designed to avoid drainage into Verdugo Creek, and, therefore, would protect the primary sources of coarse sediment in the canyon.



**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>SAN MATEO CREEK WATERSHED</b>						
<b>Cristianitos Canyon Sub-basin Protection Recommendations</b>						
81. Protect a habitat linkage, consisting of the Donna O'Neill Land Conservancy and an area along the east side of Cristianitos Creek, to provide connectivity for gnatcatchers in the upper portion of the sub-basin with other populations in Lower Gabino Creek and Camp Pendleton along lower Cristianitos/San Mateo Creek, and to maintain habitat integrity through connectivity within the Donna O'Neill Land Conservancy at Rancho Mission Viejo.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore this habitat linkage would be protected.	<b>Consistent.</b> B-6 would be consistent because it would provide an area along the east side of Cristianitos Creek which, when combined with the O'Neill Conservancy, would form a north-south habitat linkage (N) connecting gnatcatcher populations in upper Cristianitos sub-basin to other populations in Lower Gabino Creek and Camp Pendleton. B-6 also would maintain habitat integrity through connectivity within the O'Neill Conservancy.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore this habitat linkage would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Cristianitos sub-basin and therefore this habitat linkage would be protected.	<b>Consistent.</b> B-10 would be consistent because it would provide an area along the east side of Cristianitos Creek which when combined with the O'Neill Conservancy would form a north-south habitat linkage. In addition the proposed golf course could provide for the restoration of native habitats such as CSS and VGL to further enhance the linkage.	<b>Consistent.</b> B-11 would be consistent because it would provide an area along the east side of Cristianitos Creek which when combined with the O'Neill Conservancy would form a north-south habitat linkage. In addition the proposed golf course could provide for the restoration of native habitats such as and VGL to further enhance the linkage.
82. Protect appropriate wetland and upland habitats to support a nesting population of the southwestern pond turtle, which occurs in the upper portion of the watershed in a small stockpond along Cristianitos Creek.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the stockpond would be protected.	<b>Consistent.</b> B-6 would be consistent because proposed development in the Cristianitos sub-basin would avoid the stockpond and adjacent upland habitat.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the stockpond would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin and the stockpond would be protected.	<b>Consistent.</b> B-10 would be consistent because it avoids the stockpond and therefore impacts to breeding and nesting/estivation habitat for the pond turtle.	<b>Consistent.</b> B-11 would be consistent because it avoids the stockpond and therefore impacts to breeding and nesting/estivation habitat for the pond turtle.
83. Protect wetlands and adjoining upland habitat to support all life stages of western spadefoot toad.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the breeding and estivation habitat in upper Cristianitos and lower Cristianitos at the confluence with Gabino Creek would be protected.	<b>Consistent.</b> B-6 would be consistent because proposed development would avoid breeding and estivation habitat in upper Cristianitos and lower Cristianitos at the confluence with Gabino Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed and therefore breeding and estivation habitat for the western spadefoot toad would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore breeding and estivation habitat for the western spadefoot toad would be protected.	<b>Consistent.</b> B-10 would be consistent because it avoids wetlands associated with Cristianitos Creek and therefore avoid impacts to breeding and nesting/estivation habitat for the spadefoot in the stockpond in upper Cristianitos Creek. Impacts to the remainder of Cristianitos Creek downstream would also be avoided.	<b>Consistent.</b> B-11 would be consistent because it avoids wetlands associated with Cristianitos Creek and therefore avoid impacts to breeding and nesting/estivation habitat for the spadefoot in the stockpond in upper Cristianitos Creek. Impacts to the remainder of Cristianitos Creek downstream would also be avoided.
84. Avoid riparian/wetland habitat, including alkali wetlands, to the maximum extent feasible.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all wetlands in the Cristianitos sub-basin would be avoided.	<b>Consistent.</b> B-6 would be consistent because proposed development in the Cristianitos sub-basin would avoid all wetlands in upper Cristianitos and along the mainstem of Cristianitos Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all wetlands in the Cristianitos sub-basin would be avoided.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Cristianitos sub-basin and therefore all wetlands in the sub-basin would be avoided.	<b>Consistent.</b> B-10 would be consistent because it avoids wetlands associated with Cristianitos Creek.	<b>Consistent.</b> B-11 would be consistent because it avoids wetlands associated with Cristianitos Creek.
85. Protect the majority of native grasslands in the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore 100% of native grasslands in the Cristianitos sub-basin would be protected.	<b>Consistent.</b> B-6 would be consistent because approximately 75% of native grasslands in the Cristianitos sub-basin would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore 100% of native grasslands in the Cristianitos sub-basin would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Cristianitos sub-basin, and therefore 100% of native grasslands in the sub-basin would be protected.	<b>Consistent.</b> B-10 would be consistent because approximately 64% of native grasslands in the Cristianitos sub-basin would be protected.	<b>Consistent.</b> B-11 would be consistent because approximately 55% of native grasslands in the Cristianitos sub-basin would be protected.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
86. Protect breeding habitat and, to the extent feasible, foraging habitat for resident and wintering raptor species.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore raptor breeding and foraging habitat would be protected.	<b>Consistent.</b> B-6 would be consistent because riparian breeding habitat associated with Cristianitos Creek and substantial grasslands in upper Cristianitos would be protected. However, some impacts to grasslands in the middle and lower portions of the sub-basin would occur.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore raptor breeding and foraging habitat would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore raptor breeding and foraging habitat in this sub-basin would be protected.	<b>Not consistent.</b> B-10 would not be consistent because while riparian breeding habitat associated with Cristianitos Creek would be avoided, substantial impacts to adjacent grassland foraging habitat would occur.	<b>Not consistent.</b> B-11 would not be consistent because while riparian breeding habitat associated with Cristianitos Creek would be avoided, substantial impacts to adjacent grassland foraging habitat would occur.
87. Protect the majority of the cactus wren locations within the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all cactus wren locations in the sub-basin would be protected.	<b>Consistent.</b> B-6 would be consistent because 85% of cactus wren locations in the sub-basin would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all cactus wren locations in the sub-basin would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore all cactus wren locations in the sub-basin would be protected.	<b>Consistent.</b> B-10 would be consistent because 87% of cactus wren locations in the sub-basin would be protected.	<b>Consistent.</b> B-11 would be consistent because 77% of cactus wren locations in the sub-basin would be protected.
88. Maintain a north-south habitat linkage along Cristianitos Creek between San Juan Creek and lower San Mateo Creek for dispersal and movement of gnatcatchers and other avian species, as well as large mammals such as mountain lion, bobcat, coyote, and mule deer, and, in particular, avoid occupied coastal sage scrub habitat in upper Cristianitos Canyon.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore linkage N would be protected.	<b>Consistent.</b> B-6 would be consistent because it would protect linkage N by avoiding impacts within a minimum of approximately 600-700 feet of Cristianitos Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore linkage N would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Cristianitos sub-basin, and therefore linkage N would be protected.	<b>Consistent.</b> B-10 would be consistent because linkage N would be protected through the flexibility of the golf course design including a setback from the creek and the low intensity of development proposed in the sub-basin.	<b>Consistent.</b> B-11 would be consistent because linkage N would be protected through the flexibility of the golf course design including a setback from the creek.
89. Maintain an east-west habitat linkage from Gabino Creek to the confluence with Cristianitos Creek for wildlife movement between Gabino Canyon and the Donna O'Neill Conservancy at Rancho Mission Viejo.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore wildlife movement along Gabino Creek (linkage O), at the Gabino/Cristianitos confluence, and to the O'Neill Conservancy would be protected.	<b>Consistent.</b> B-6 would be consistent because it would provide adequate open space to protect wildlife movement along Gabino Creek (linkage O), at the Gabino/Cristianitos confluence, and to the O'Neill Conservancy. (Note: a new collector road would be required to connect to development in the Cristianitos sub-basin, but the segment in the Habitat Reserve would be constructed in the Gabino and Blind Canyons sub-basin discussed below).	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore wildlife movement along Gabino Creek (linkage O), at the Gabino/Cristianitos confluence, and to the O'Neill Conservancy would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore would protect adequate open space for wildlife movement along Gabino Creek (linkage O), at the Gabino/Cristianitos confluence, and to the O'Neill Conservancy. In addition, the existing Cristianitos Road would be upgraded to County collector standards which would provide the opportunity to improve the crossing at the confluence of Cristianitos and Gabino creeks for wildlife purposes (see Section 11.3 Circulation Consistency Review).	<b>Consistent.</b> B-10 would be consistent because linkage O, along Gabino Creek, at the Gabino/Cristianitos Creek confluence and the O'Neill Conservancy would be protected.	<b>Consistent.</b> B-11 would be consistent because linkage O, along Gabino Creek, at the Gabino/Cristianitos Creek confluence and the O'Neill Conservancy would be protected.
90. Protect the three locations supporting approximately 4,500 flowering stalks of thread-leaved brodiaea on the hill outcrop adjacent to the clay mine pits in the southern portion of Cristianitos Canyon.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the three brodiaea locations would be protected.	<b>Not consistent.</b> B-6 would not be consistent because the three locations of thread-leaved brodiaea would be impacted.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the three brodiaea locations would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore the three brodiaea locations would be protected.	<b>Consistent.</b> B-10 would be consistent because it would protect the three brodiaea locations comprising the <i>major population</i> .	<b>Not consistent.</b> B-11 would not be consistent because the three locations of thread-leaved brodiaea would be impacted.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
91. Protect 10 of the 13 small, scattered locations of thread-leaved brodiaea in Cristianitos Canyon, totaling approximately 285 flowering stalks, to achieve the objective of protecting important populations in key locations. Maintain a continuous habitat connection between these scattered populations to allow for interactions and genetic exchange between the populations. These locations provide a linkage between other brodiaea locations in the area and the area has good potential for enhancement and restoration.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all scattered locations of brodiaea would be protected.	<b>Consistent.</b> B-6 would be consistent because 10 of 13 locations totaling 285 individuals would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all scattered locations of brodiaea would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore all scattered locations of brodiaea would be protected.	<b>Could be consistent.</b> B-10 could be consistent because it would avoid nine of the 13 scattered locations. A tenth location of 120 flowering stalks could be avoided through design course design.	<b>Could be consistent:</b> B-11 could be consistent because it would avoid eight of the 13 scattered locations. Two locations of 80 and 120 flowering stalks could be avoided through design course design.
92. Protect the major population of many-stemmed dudleya extending from the southern portion of the Trampas Canyon subunit in the north, through the Cristianitos Canyon sub-basin south to the Talega development open space located in the San Clemente Watershed. This area supports the largest major population in the subregion with approximately 19,300 individuals in about 69 discrete locations.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all locations of many-stemmed dudleya would be protected.	<b>Consistent.</b> B-6 would be consistent because it would protect approximately 88% of discrete locations and 75% of individuals of many-stemmed dudleya in the Cristianitos sub-basin portion of the major population.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all locations of many-stemmed dudleya would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore all locations of many-stemmed dudleya in the sub-basin would be protected.	<b>Consistent:</b> B-10 would be consistent because it would protect at least 90% of discrete locations and 88% of individuals of many-stemmed dudleya.	<b>Consistent:</b> B-11 would be consistent because it would protect at least 83% of discrete locations and 77% of individuals of many-stemmed dudleya.
93. Protect the two known important populations of Coulter's saltbush in the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the two populations of saltbush would be protected.	<b>Consistent.</b> B-6 would be consistent because proposed development within the sub-basin would avoid the two Coulter's saltbush populations.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the two locations of Coulter's saltbush would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin, and therefore the two populations of Coulter's saltbush in the sub-basin would be protected.	<b>Consistent.</b> B-10 would be consistent because it avoids the two populations of saltbush.	<b>Consistent.</b> B-11 would be consistent because it avoids the two populations of saltbush.
<b>Cristianitos Canyon Sub-basin Management Recommendations</b>						
94. Pursuant to the Grazing Management Plan, implement grazing management techniques to help protect listed and other selected species and habitat, promote perennial grasses including native grasses, allow for continued cattle grazing sufficient to support cattle ranching operations, and, where appropriate reduce fuel loads for fire.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan component.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan component.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including a Grazing Management Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan component.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan component.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan component.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
95. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing as part of the Adaptive Management Program, and prevention of human disturbance.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including an Invasive Species Control Plan and Grazing Management Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
<b>Cristianitos Canyon Sub-basin Restoration Recommendations</b>						
96. Implement a native grasslands restoration program, which will likely include grazing as a grassland restoration technique, as set forth in the Grazing Management Plan, for the upper portion of the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development in the RMV portion of the San Mateo Creek Watershed. B-5 also proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan and Habitat Restoration Plan. Implementation of the CSS/VGL restoration recommendations would be feasible with this alternative.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan and Habitat Restoration Plan. The proposed development pattern under B-6 would allow implementation of the CSS/VGL restoration recommendations.	<b>Could be consistent.</b> B-8 could be consistent if additional funding to implement the Adaptive Management Program, including a Grazing Management Plan and Habitat Restoration Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because no development is proposed in the Cristianitos sub-basin. B-9 also proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan and Habitat Restoration Plan.	<b>Not Consistent.</b> B-10 would not be consistent because although it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan and Habitat Restoration Plan, the proposed development pattern under B-10 would conflict with two of the areas identified for CSS/VGL restoration.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Grazing Management Plan and Habitat Restoration Plan. The proposed development pattern under B-6 would allow implementation of the CSS/VGL restoration recommendations.
97. Translocate salvaged thread-leaved brodiaea and many-stemmed dudleya to CSS/VGL restoration and enhancement areas where feasible and appropriate. Potential restoration and enhancement areas in the sub-basin include upper Cristianitos Canyon and the southern portion of the Trampas Canyon subunit. Receiver areas should support clay soils suitable for brodiaea and dudleya, and should be placed in locations that maximize connectivity and genetic exchange.	<b>Consistent.</b> B-5 would be consistent because although it proposes no development in the Cristianitos sub-basin, and thus salvage of brodiaea and dudleya would not occur from the sub-basin, salvaged brodiaea and dudleya from elsewhere in the planning area could be translocated to restoration areas in upper Cristianitos and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan. Implementation of the CSS/VGL restoration recommendations and the Plant Species Translocation, Propagation and Management Plan would be feasible with this alternative. Translocation of brodiaea and dudleya to these sites could occur.	<b>Could be consistent.</b> B-8 could be consistent because although it proposes no development in the Cristianitos sub-basin, and thus salvage of brodiaea and dudleya would not occur from the sub-basin, salvaged brodiaea and dudleya from elsewhere in the planning area could be translocated to restoration areas in upper Cristianitos and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program. For B-8 to be consistent, however, additional funding to implement the salvage and translocation plan would have to be identified.	<b>Consistent.</b> B-9 would be consistent because although it proposes no development in the Cristianitos sub-basin, and thus salvage of brodiaea and dudleya would not occur from the sub-basin, salvaged brodiaea and dudleya from elsewhere in the planning area could be translocated to restoration areas in upper Cristianitos and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Not Consistent.</b> B-10 would not be consistent because the development pattern in the Cristianitos sub-basin would conflict with one of the areas proposed for VGL/CSS restoration. However, B-10 would allow for implementation of the majority of the CSS/VGL restoration recommendations and the salvage and translocation of brodiaea and dudleya in the sub-basin, and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan. Implementation of the CSS/VGL restoration recommendations and the Plant Species Translocation, Propagation and Management Plan would be feasible with this alternative. Translocation of brodiaea and dudleya to these sites could occur.
98. Salvage clay topsoils from development areas where feasible and appropriate and transport to restoration areas. Salvaged topsoils may be used to create additional suitable brodiaea and dudleya habitat and may contain seedbank.	<b>Consistent.</b> B-5 would be consistent because although it proposes no development in the Cristianitos sub-basin, salvaged topsoils from elsewhere in the planning area could be transported to restoration areas in upper Cristianitos and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan. Implementation of the CSS/VGL restoration recommendations and the Plant Species Translocation, Propagation and Management Plan would be feasible with this alternative. Salvage and transport of clay soils to targeted restoration	<b>Could be consistent.</b> B-8 could be consistent because although it proposes no development in the Cristianitos sub-basin, salvaged topsoils from elsewhere in the planning area could be translocated to restoration areas in upper Cristianitos and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive	<b>Consistent.</b> B-9 would be consistent because although it proposes no development in the Cristianitos sub-basin, salvaged topsoils from elsewhere in the planning area could be transported to restoration areas in upper Cristianitos and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management	<b>Consistent.</b> B-10 would be consistent because the development pattern in the Cristianitos sub-basin would allow for the salvage and translocation of brodiaea and dudleya in the sub-basin, and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because the development pattern in the Cristianitos sub-basin would allow for the salvage and translocation of brodiaea and dudleya in the sub-basin, and the southern portion of the Trampas Canyon subunit under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
	Plan component of the Adaptive Management Program.	areas in the Trampas and Cristianitos sub-basins could occur.	Management Program. For B-8 to be consistent, however, additional funding to implement the salvage and transport of soils would have to be identified.	Plan component of the Adaptive Management Program.		
99. Translocate salvaged intermediate mariposa lily bulbs to areas where suitable soil conditions occur. Specific translocation areas have not been identified, but based on the existing distribution, potential general translocation areas in the sub-basin area include upper Cristianitos Canyon and the southern portion of the Trampas Canyon subunit.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.
100. Initiate an intermediate mariposa lily seed collection program in 2003 if sufficient rain falls to warrant the collection program. Receiver sites should be identified in the winter of 2003 and a pilot planting program should be implemented to determine the effectiveness of propagation from seed.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.
101. Protect the upper watershed headwaters, address erosion from the clay pits and implement creek stabilization actions to address localized erosion presently causing increases in fine sediment yields in Upper Cristianitos Creek per the "Watershed and Sub-Basin Planning Principles."	<b>Consistent.</b> B-5 would be consistent because it proposes no development within RMV portion of the San Mateo Creek Watershed and would, through implementation of the Adaptive Management Program, including the Habitat Restoration Plan component, have the opportunity to address erosion from the clay pits and implement creek stabilization actions to address localized erosion.	<b>Consistent.</b> B-6 would be consistent because the proposed development pattern within the sub-basin would avoid the headwaters area. Through a combination of development and implementation of the Adaptive Management Program, including the Habitat Restoration Plan component, B-6 would address erosion from the clay pits and implement creek stabilization actions to address localized erosion.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development within RMV portion of the San Mateo Creek Watershed and is therefore consistent with this portion of the recommendation. However, to be consistent, funding to implement the Adaptive Management Program, which includes a Habitat Restoration Plan component, would have to be identified.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin. B-9, through implementation of the Adaptive Management Program, including the Habitat Restoration Plan component, would have the opportunity to address erosion from the clay pits and implement creek stabilization actions to address localized erosion. However, the funding to support the stabilization program would need to be identified.	<b>Consistent.</b> B-10 would be consistent because of implementation of golf course land uses to stabilize erosion from the clay pits. B-10 would also implement creek stabilization actions to address localized erosion through implementation of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because no development is proposed in the headwaters of Cristianitos Creek and implementation of golf course land uses would help to stabilize erosion from the clay pits. B-11 would also implement creek stabilization actions to address localized erosion through implementation of the Adaptive Management Program.
<b>Gabino and Blind Canyons Sub-basin</b>						
<b>Upper Gabino Subunit Protection Recommendations</b>						
102. Protect a habitat linkage along Upper Gabino to allow dispersal of large mammals.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore linkages O and M would be protected.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development within the Upper Gabino subunit that would result in impacts to linkage O. Linkage M connecting Gabino and Verdugo Canyon would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore linkages O and M would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore linkages O and M would be protected.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore linkages O and M would be protected.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore linkages O and M would be protected.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
103. Maintain contiguity and connectivity of coastal sage scrub to provide dispersal habitat for the cactus wren and other sensitive coastal sage scrub species.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore contiguity of coastal sage scrub would be protected.	<b>Consistent.</b> B-6 would be consistent because the proposed development within the Upper Gabino subunit would largely be located in grassland habitat. Contiguity of coastal sage scrub in the areas surrounding the development area would be maintained.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore contiguity of coastal sage scrub would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore contiguity of coastal sage scrub would be protected.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore contiguity of coastal sage scrub would be protected.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore contiguity of coastal sage scrub would be protected.
104. Minimize, to the extent feasible, impacts to grassland foraging habitat for resident and wintering raptors, as well as "live-in" habitat for several other wildlife species that potentially occur in the subunit, including grasshopper sparrow, wintering burrowing owls, badger, spadefoot toad and horned lark.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore grassland habitat in the subunit would be protected.	<b>Not consistent.</b> B-6 would not be consistent because substantial areas of grassland habitat within the subunit would be impacted.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore grassland habitat in the subunit would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore grassland habitat in the subunit would be protected.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore grassland habitat in the subunit would be protected.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore grassland habitat in the subunit would be protected.
105. Protect Jerome Lake and surrounding uplands to maintain nesting habitat for the southwestern pond turtle.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore Jerome's Lake and surrounding uplands would be protected.	<b>Not consistent.</b> B-6 would not be consistent because Jerome's Lake and surrounding upland habitat would be impacted.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore Jerome's Lake and surrounding uplands would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore Jerome's Lake and surrounding uplands would be protected.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore Jerome's Lake and surrounding uplands would be protected.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore Jerome's Lake and surrounding uplands would be protected.
106. Protect the majority of native grasslands within the subunit. Manage and restore protected native grasslands in accordance with the management and restoration recommendations described below, including grazing management techniques.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore grassland habitat in the Upper Gabino subunit would be protected. B-5 also proposes implementation of the Adaptive Management Program including the Habitat Restoration Plan and Grazing Management Plan to restore protected native grasslands.	<b>Not consistent.</b> B-6 would not be consistent because only 30% of native grasslands in the Upper Gabino subunit would be protected. In addition, less than 2 acres of annual grassland restorable to native grassland would be protected and therefore the VGL restoration component of the Adaptive Management Program could not be effectively implemented.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore existing grassland habitat in the sub-basin would be protected. For B-8 to be consistent, however, funding to implement the Adaptive Management Program, including the Habitat Restoration Plan and Grazing Management Plan, would have to be identified.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore grassland habitat in the sub-basin would be protected. B-9 also proposes implementation of the Adaptive Management Program including the Habitat Restoration Plan and Grazing Management Plan that would restore protected native grasslands.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore grassland habitat in the sub-basin would be protected. B-10 also proposes implementation of the Adaptive Management Program including the Habitat Restoration Plan and Grazing Management Plan that would restore protected native grasslands.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore grassland habitat in the sub-basin would be protected. B-11 also proposes implementation of the Adaptive Management Program including the Habitat Restoration Plan and Grazing Management Plan that would restore protected native grasslands.
107. Protect the approximately six known discrete locations of many-stemmed dudleya in the subunit that are part of the major population in a key location. (Note that 2 of the locations mapped as part of the major population are in the Middle Gabino Canyon subunit but are included in this analysis.)	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all 6 dudleya locations in the subunit would be protected.	<b>Not consistent.</b> B-6 would not be consistent because it would impact 1 out of 6 locations.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore all 6 locations of dudleya in the subunit would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Upper Gabino subunit, and therefore all 6 locations of dudleya in the subunit would be protected.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the Upper Gabino subunit, and therefore all 6 locations of dudleya in the subunit would be protected.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the Upper Gabino subunit, and therefore all 6 locations of dudleya in the subunit would be protected.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
108. Protect the important population of Coulter's saltbush in the subunit.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore Coulter's saltbush in the subunit would be protected.	<b>Not consistent.</b> B-6 would not be consistent because it would impact the population of Coulter's saltbush in the subunit.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore Coulter's saltbush in the subunit would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore Coulter's saltbush in the subunit would be protected.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore Coulter's saltbush in the subunit would be protected.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Upper Gabino subunit, and therefore Coulter's saltbush in the subunit would be protected.
<b>Upper Gabino Subunit Restoration Recommendations</b>						
109. Implement a CSS/VGL restoration and enhancement program, which will likely include grazing grassland restoration techniques set forth in the Grazing Management Plan.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed. B-5 also proposes an Adaptive Management Program including a Grazing Management Plan and Habitat Restoration Plan.	<b>Not consistent.</b> B-6 would not be consistent because the proposed development pattern would not allow implementation of the CSS/VGL restoration recommendations.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed. However, for B-8 to be consistent funding to implement the CSS/VGL restoration and the Grazing Management Plan components of the Adaptive Management Program would have to be identified.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Gabino Canyon sub-basin. B-9 also proposes an Adaptive Management Program including a Grazing Management Plan and Habitat Restoration Plan.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the Gabino Canyon sub-basin. B-10 also proposes an Adaptive Management Program including a Grazing Management Plan and Habitat Restoration Plan.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the Gabino Canyon sub-basin. B-11 also proposes an Adaptive Management Program including a Grazing Management Plan and Habitat Restoration Plan.
110. Translocate any impacted many-stemmed dudleya to CSS/VGL restoration and enhancement areas in Upper Gabino where feasible and appropriate. Receiver areas should support clay soils suitable for dudleya.	<b>Consistent.</b> B-5 would be consistent because there would be no development in the RMV portion of the San Mateo Creek Watershed and the Upper Gabino subunit could be a receiver site for dudleya translocations from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Not consistent.</b> B-6 would not be consistent because the proposed development pattern would not allow implementation of the CSS/VGL restoration recommendations.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed. However, for B-8 to be consistent funding to implement the CSS/VGL restoration and the Grazing Management Plan components of the Adaptive Management Program would have to be identified.	<b>Consistent.</b> B-9 would be consistent because there would be no development in the Gabino sub-basin and the proposed CSS/VGL restoration areas in the Upper Gabino subunit could be a receiver sites for dudleya translocations from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because there would be no development in the Gabino sub-basin and the proposed CSS/VGL restoration areas in the Upper Gabino subunit could be a receiver sites for dudleya translocations from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because there would be no development in the Gabino sub-basin and the proposed CSS/VGL restoration areas in the Upper Gabino subunit could be a receiver sites for dudleya translocations from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.
111. Salvage clay topsoils from development areas where feasible and transport to restoration areas. Salvaged topsoils may be used to create additional suitable dudleya habitat and may contain seedbank.	<b>Consistent.</b> B-5 would be consistent because although there would be no development in the RMV portion of the San Mateo Creek Watershed, the Upper Gabino subunit could be a receiver site for clay topsoil transport from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-6 would be consistent because clay topsoil salvage and transport to other restorations areas could occur via implementation of Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Could be consistent.</b> B-8 could be consistent because although there would be no development in the RMV portion of the San Mateo Creek Watershed, the Upper Gabino subunit could be a receiver site for clay topsoil transport from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program. For B-8 to be consistent, however, funding to implement the CSS/VGL restoration component of the Adaptive Management Program would have to be identified.	<b>Consistent.</b> B-9 would be consistent because no development is proposed in the Gabino sub-basin and the Upper Gabino subunit could be a receiver site for clay topsoils from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-10 would be consistent because no development is proposed in the Gabino sub-basin and the Upper Gabino subunit could be a receiver site for clay topsoils from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.	<b>Consistent.</b> B-11 would be consistent because no development is proposed in the Gabino sub-basin and the Upper Gabino subunit could be a receiver site for clay topsoils from other parts of the planning area under the Plant Species Translocation, Propagation and Management Plan component of the Adaptive Management Program.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
112. Implement a creek restoration program in the subunit to address erosion that is generating increases in fine sediment yields in Upper Gabino.	<b>Consistent.</b> B-5 would be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased.	<b>Consistent.</b> B-6 would be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program and the development proposed for the Upper Gabino subunit, fine sediment yields would be decreased.	<b>Could be consistent.</b> B-8 could be consistent if funding to implement the Habitat Restoration Plan component of the Adaptive Management Program was identified.	<b>Could be consistent.</b> B-9 could be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased. However, the soil stabilization program would be costly and the availability of sufficient funding would need to be determined.	<b>Could be consistent.</b> B-10 could be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased. However, the soil stabilization program would be costly and the availability of sufficient funding would need to be determined.	<b>Could be consistent.</b> B-11 could be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased. However, the soil stabilization program would be costly and the availability of sufficient funding would need to be determined.
<b>Middle Gabino Subunit Protection Recommendations</b>						
113. Limit impacts to ridgelines to the extent feasible in order to protect coarse sediments.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within Middle Gabino subunit.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino Canyon sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Gabino Canyon sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Gabino Canyon sub-basin.
114. Protect a north-south habitat linkage through Middle Gabino, with particular focus on maintaining uninterrupted riparian woodland through Middle Gabino and along the western tributary into Middle Gabino.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-6 would not be consistent because while it proposes no development within Middle Gabino subunit, overall wildlife movement in Gabino Canyon may be affected by development in the Upper Gabino subunit.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino Canyon sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Gabino Canyon sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Gabino Canyon sub-basin.
115. Protect the arroyo toad population upstream from the confluence with La Paz Creek by avoiding impacts to breeding, foraging and estivation habitat and protect canyons to avoid downstream impacts to the toad.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the Middle Gabino subunit.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino Canyon sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Gabino Canyon sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Gabino Canyon sub-basin.
116. Protect the diversity of raptor nesting habitat with particular focus on retaining documented nesting habitat for white-tailed kites and long-eared owls within the subunit.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the Middle Gabino subunit and therefore would protect raptor nesting habitat.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Gabino sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Gabino sub-basin.
117. Protect the four known discrete locations of many-stemmed dudleya in the subunit that are part of a major population in a key location.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Middle Gabino subunit, and therefore all dudleya populations in the subunit would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development within the Gabino sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development within the Gabino sub-basin.



**TABLE M-4 (Continued)  
SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>Middle Gabino Subunit Management Recommendations</b>						
118. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing as part of the Adaptive Management Program, and prevention of human disturbance.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent with this recommendation. However, for B-8 to be consistent, funding to implement the Adaptive Management Program, including an Invasive Species Control Plan and Grazing Management Plan, would have to be identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
119. Pursuant to the Grazing Management Plan, implement grazing management techniques that provide for long-term protection of selected species and habitat within designated reserve areas.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program, including a Grazing Management Plan component.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program, including a Grazing Management Plan component.	<b>Could be consistent.</b> B-8 could be consistent with this recommendation. However, for B-8 to be consistent, funding to implement the Adaptive Management Program, including a Grazing Management Plan, would have to be identified.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program, including a Grazing Management Plan component.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program, including a Grazing Management Plan component.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program, including a Grazing Management Plan component.
120. Implement a management program for protected raptor nesting habitat in the sub-basin, including the minimization of human disturbance during the breeding season.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent with this recommendation. However, for B-8 to be consistent, funding to implement the Adaptive Management Program, including a Grazing Management Plan, would have to be identified. In addition, it is likely that access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
<b>Lower Gabino Subunit including Blind Subunit Protection Recommendations</b>						
121. Protect breeding and foraging habitat and movement opportunities within the streamcourse and adjacent alluvial terraces for the arroyo toad. Address potential upland estivation habitat needs in the context of best scientific information regarding the influence of topography, soils and other factors that appear to influence arroyo toad lateral movement and frequency of use in upland areas away from streamcourse habitat areas.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid direct impacts to Gabino Creek and provide for setbacks from the creek to provide adequate adjacent alluvial terraces to support arroyo toad estivation.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino Canyon portion of the sub-basin. Development in the Blind Canyon portion of the sub-basin would be limited to the area below the ridgeline separating Gabino and Blind canyons. B-9 would include reconstruction of the existing Cristianitos Road which would improve flows and sediment transport, with a net benefit to the arroyo toad (see circulation consistency analysis in Section 11.3).	<b>Consistent.</b> B-10 would be consistent because it would avoid direct impacts to Gabino Creek and provide for setbacks from the creek to provide adequate adjacent alluvial terraces to support arroyo toad estivation. Development in the Blind Canyon portion of the sub-basin would be limited to the area below the ridgeline separating Gabino and Blind canyons. B-10 would require construction of a two-lane collector road with a substantial bridge span over the creek that would have to be designed and constructed to avoid arroyo toad breeding habitat and streamcourse morphology (see circulation consistency analysis in Section 11.3).	<b>Consistent.</b> B-11 would be consistent because it would avoid direct impacts to Gabino Creek and provide for setbacks from the creek to provide adequate adjacent alluvial terraces to support arroyo toad estivation. Development in the Blind Canyon portion of the sub-basin would be limited to the area below the ridgeline separating Gabino and Blind canyons. B-11 would require construction of a two-lane collector road with a substantial bridge span over the creek that would have to be designed and constructed to avoid arroyo toad breeding habitat and streamcourse morphology (see circulation consistency analysis in Section 11.3).

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
122. Protect riparian habitat for nesting yellow-breasted chat within the subunit.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid impacts to riparian nesting habitat for the chat within Lower Gabino subunit subunit and the Blind Canyon portion supports limited chat habitat.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Lower Gabino Canyon subunit and the Blind Canyon portion supports limited chat habitat.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to riparian nesting habitat for the chat within the Lower Gabino subunit subunit and the Blind Canyon portion supports limited chat habitat.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to riparian nesting habitat for the chat within the Lower Gabino subunit subunit and the Blind Canyon portion supports limited chat habitat.
123. Minimize impacts to California gnatcatcher locations.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-6 would not be consistent because it would impact 2 of 5 gnatcatcher locations in the subunit.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Lower Gabino Canyon subunit and the Blind Canyon portion does not support any gnatcatcher locations.	<b>Consistent.</b> B-10 would be consistent because it would avoid all 5 gnatcatcher locations in the subunit.	<b>Not consistent.</b> B-11 would not be consistent because it would impact all 5 gnatcatcher locations in the subunit.
124. Minimize impacts to cactus wren locations.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because proposed development would impact 25% of the cactus wren locations.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-9 would not be consistent because proposed development in the Blind Canyon subunit would impact 75% of the cactus wren locations.	<b>Not consistent.</b> B-10 would not be consistent because proposed development in the Blind Canyon sub-unit would impact 83% of the cactus wren locations.	<b>Not consistent.</b> B-11 would not be consistent because proposed development in the Blind Canyon subunit would impact 79% of the cactus wren locations.
125. Minimize impacts to native grasslands within the subunit	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would impact only 22% of native grassland in the subunit.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-9 would not be consistent because it would impact 52% of native grassland in the subunit. Furthermore, virtually all annual grassland potentially restorable to native grassland in the subunit would be developed, and therefore the VGL restoration component of the Adaptive Management Program could not be effectively implemented.	<b>Not consistent.</b> B-10 would not be consistent because it would impact 39% of native grassland in the subunit. Furthermore, virtually all annual grassland potentially restorable to native grassland in the subunit would be developed, and therefore the VGL restoration component of the Adaptive Management Program could not be effectively implemented.	<b>Not consistent.</b> B-11 would not be consistent because it would impact 49% of native grassland in the subunit. Furthermore, virtually all annual grassland potentially restorable to native grassland in the subunit would be developed, and therefore the VGL restoration component of the Adaptive Management Program could not be effectively implemented.
126. Protect breeding habitat, and to the extent feasible, protect raptor foraging habitat for resident and wintering species.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because raptor breeding habitat in both the Gabino and Blind canyon portions of the subunit would be protected, as would substantial grassland foraging habitat in Blind Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-9 would not be consistent because although it proposes no development within the Lower Gabino Canyon portion of the subunit, suitable raptor nesting and foraging habitat in the Blind Canyon portion of the subunit would be impacted.	<b>Not consistent.</b> B-4 would not be consistent because although raptor breeding habitat in the Gabino Canyon portion of the subunit would be avoided, breeding habitat in the Blind Canyon portion and foraging areas, and particularly grasslands, are proposed for development.	<b>Not consistent.</b> B-4 would not be consistent because although raptor breeding habitat in the Gabino Canyon portion of the subunit would be avoided, breeding habitat in the Blind Canyon portion and foraging areas, and particularly grasslands, are proposed for development.
127. Maintain an east-west habitat linkage from Gabino Creek to the confluence with Cristianitos Creek for wildlife movement between Gabino Canyon and the Donna O'Neill Conservancy at Rancho Mission Viejo.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid Gabino Creek to the confluence with Cristianitos Creek, maintaining an east-west habitat linkage to the Conservancy.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Gabino Canyon portion of the subunit.	<b>Consistent.</b> B-10 would be consistent because it would avoid Gabino Creek to the confluence with Cristianitos Creek, maintaining an east-west habitat linkage to the Conservancy.	<b>Consistent.</b> B-11 would be consistent because it would avoid Gabino Creek to the confluence with Cristianitos Creek, maintaining an east-west habitat linkage to the Conservancy.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
128. Protect approximately 80 percent of the discrete many-stemmed dudleya locations in Lower Gabino and Blind Canyons such that the integrity of the major population in this area (i.e., the combined Cristianitos and Gabino and Blind Canyons) is preserved.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-6 would not be consistent because 54% of locations and 23% individuals of many-stemmed dudleya would be protected.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would protect 92% of locations and 90% of individuals of many-stemmed dudleya.	<b>Consistent.</b> B-10 would be consistent because approximately 82% of locations would be protected.	<b>Not consistent.</b> B-11 would not be consistent because approximately 48% of locations would be protected.
129. Protect the two known locations of intermediate mariposa lily in Lower Gabino Canyon.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.
130. Protect the major population of brodiaea in a key location bordering the Lower Gabino Canyon sub-unit and Cristianitos Canyon sub-basin supporting approximately 4,500 flowering stalks of thread-leaved brodiaea in three locations on the hill outcrop adjacent to and east of the clay mine pits in the southern portion of Cristianitos Canyon and in the western portion of the Gabino subunit.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the three brodiaea locations would be protected.	<b>Not consistent.</b> B-6 would not be consistent because proposed development would impact the three locations of thread-leaved brodiaea.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed, and therefore the three brodiaea locations would be protected.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Gabino sub-basin, and therefore the three brodiaea locations would be protected.	<b>Consistent.</b> B-10 would be consistent because proposed development would avoid the three locations of thread-leaved brodiaea.	<b>Not consistent.</b> B-11 would not be consistent because proposed development would impact the three locations of thread-leaved brodiaea.
131. Implement a management program for protected sensitive plant locations in the sub-basin, including control of non-native invasive species, management of grazing and minimization of human access and disturbance as part of the Adaptive Management Program.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Could be consistent.</b> B-8 could be consistent if funding to implement the Adaptive Management Program, including an Invasive Species Control Plan and a Grazing Management Plan, was identified. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes an Invasive Species Control Plan and a Grazing Management Plan. In addition, access policies will be implemented to control human disturbances, as described in Chapter 9.
132. Protect the integrity of the arroyo toad population in Lower Gabino and Cristianitos creeks, as well as San Mateo Creek, by maintaining hydrologic and sediment delivery processes, including maintaining the flow characteristics of episodic events in the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed. Hydrology and sediment transport also would be improved through invasive species control.	<b>Consistent.</b> B-6 would be consistent because it would avoid Lower Gabino Creek, lower Cristianitos Creek and San Mateo Creek thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Gabino subunit. Runoff from the Blind Canyon subunit would be managed to maintain arroyo toad habitat through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a	<b>Consistent.</b> B-10 would be consistent because it would avoid Lower Gabino Creek, lower Cristianitos Creek and San Mateo Creek, thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the comprehensive of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the	<b>Consistent.</b> B-11 would be consistent because it would avoid Lower Gabino Creek, lower Cristianitos Creek and San Mateo Creek, thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the comprehensive of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
		Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. Hydrology and sediment transport also would be improved through invasive species control.		Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. The protection of Upper and Middle Gabino and La Paz canyons also would be key in protecting hydrologic and sediment delivery processes. Finally, hydrology and sediment transport would be improved through invasive species control.	San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. The protection of Upper and Middle Gabino and La Paz canyons also would be key in protecting hydrologic and sediment delivery processes. Finally, hydrology and sediment transport would be improved through invasive species control.	Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. The protection of Upper and Middle Gabino and La Paz canyons also would be key in protecting hydrologic and sediment delivery processes. Finally, hydrology and sediment transport would be improved through invasive species control.
133. Implement an invasive plant species control effort in Cristianitos Creek between Gabino Creek and Talega Creek.	<b>Consistent.</b> B-5 would be consistent because it proposes an Invasive Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Consistent.</b> B-6 would be consistent because it proposes an Invasive Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Could be consistent.</b> B-8 could be consistent if funding to implement the Adaptive Management Program, including an Invasive Species Control Plan to control tamarisk and pampas grass, was identified.	<b>Consistent.</b> B-9 would be consistent because it proposes an Invasive Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Consistent.</b> B-10 would be consistent because it proposes an Invasive Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Consistent.</b> B-11 would be consistent because it proposes an Invasive Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.
<b>Lower Gabino Subunit including Blind Subunit Restoration Recommendations</b>						
134. Implement a VGL restoration and enhancement program, which will likely include grazing grassland restoration techniques set forth in the Grazing Management Plan.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes Habitat Restoration Plan and Grazing Management Plan components.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes Habitat Restoration Plan and Grazing Management Plan components.	<b>Could be consistent.</b> B-8 could be consistent if funding to implement the Adaptive Management Program, including the Habitat Restoration Plan and Grazing Management Plan, was identified.	<b>Not consistent.</b> B-9 would not be consistent because proposed development in the Blind Canyon portion of the subunit would preclude implementation of the Habitat Restoration Plan and Grazing Management Plan components of the Adaptive Management Program in the subunit.	<b>Not consistent.</b> B-10 would not be consistent because proposed development in the Blind Canyon portion of the subunit would preclude implementation of the Habitat Restoration Plan and Grazing Management Plan components of the Adaptive Management Program in the subunit.	<b>Not consistent.</b> B-11 would not be consistent because proposed development in the Blind Canyon portion of the subunit would preclude implementation of the Habitat Restoration Plan and Grazing Management Plan components of the Adaptive Management Program in the subunit.
<b>La Paz Canyon Sub-basin Protection Recommendations</b>						
135. Maintain a habitat linkage along La Paz Canyon to convey movement and dispersal by mountain lion, bobcat, coyote and mule deer.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the La Paz sub-basin.
136. Maintain contiguity and connectivity of coastal sage scrub to provide dispersal habitat for the cactus wren and other sensitive coastal sage scrub species.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the La Paz sub-basin.
137. Maintain riparian habitat supporting nesting raptors.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the La Paz sub-basin.
138. Protect alluvial fan scrub and hydrological conditions that support this plant community.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the La Paz sub-basin.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
139. Protect the locations of many-stemmed dudleya in the upper portion of the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the La Paz sub-basin.
140. Protect the two discrete locations of intermediate mariposa lily in the middle portion of the sub-basin.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an nccp/hcp planning species, it is not treated as a planning species within the study area due to the hybridization of this species within the study area.
141. Protect the integrity of arroyo toad populations in Lower Gabino Creek, as well as downstream populations in Cristianitos and San Mateo creeks, by protecting the generation and transport of coarse sediments to downstream areas.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the La Paz sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the La Paz sub-basin.
<b>Talega Canyon Sub-basin Protection Recommendations</b>						
142. Protect the integrity of arroyo toad populations in Talega Canyon by maintaining current stormwater runoff patterns and hydrologic conditions.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid Talega Creek, thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid Talega Creek, thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it would avoid Talega Creek, thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it would avoid Talega Creek, thereby protecting the toad population. Hydrologic and sediment delivery processes would be maintained by implementation of the water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.
143. Provide for comprehensive water quality treatment consistent with protection of arroyo toads in Talega Creek.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because water quality would be maintained by implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because water quality would be maintained by implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because water quality would be maintained by implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because water quality would be maintained by implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
144. Protect breeding and foraging habitat and movement opportunities within the streamcourse and adjacent alluvial terraces for the arroyo toad. Address potential upland estivation habitat needs in the context of best scientific information regarding the influence of topography, soils and other factors that appear to influence arroyo toad lateral movement and frequency of use in upland areas away from streamcourse habitat areas.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because B-6 would avoid direct impacts to Talega Creek and would include minimum setbacks of approximately 80 feet in elevation above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid direct impacts to Talega Creek and would include minimum setbacks of approximately 80 feet in elevation above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces. Development would be concentrated on the clay soils that are less suitable habitat for the toad.	<b>Consistent.</b> B-10 would be consistent because it would avoid direct impacts to Talega Creek and would include minimum setbacks of approximately 80 feet in elevation above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces. Development would be concentrated on the clay soils that are less suitable habitat for the toad.	<b>Consistent.</b> B-11 would be consistent because it would avoid direct impacts to Talega Creek and would include minimum setbacks of approximately 80 feet in elevation above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces. Development would be concentrated on the clay soils that are less suitable habitat for the toad.
145. Protect raptor nesting locations in the sub-basin, with particular attention to nesting of white-tailed kite and long-eared owl within the sub-basin. (Note that 1 long-eared owl and 3 white-tailed kite historic nest sites are located in Talega Creek just south of the RMV boundary.)	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because 1 long-eared owl and 3 white-tailed kite historic nesting locations, as well as other raptor nest sites, associated with Talega Creek riparian habitat would be protected under B-6. Setbacks of a minimum of 80 feet in elevation and steep topography between the creek and proposed development under B-6 would provide an adequate buffer.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because 1 long-eared owl and 3 white-tailed kite historic nesting locations, as well as other raptor nest sites, associated with Talega Creek riparian habitat would be protected under B-9. Setbacks of a minimum of 80 feet in elevation and steep topography between the creek and proposed development under B-9 would provide an adequate buffer.	<b>Consistent.</b> B-10 would be consistent because 1 long-eared owl and 3 white-tailed kite historic nesting locations, as well as other raptor nest sites, associated with Talega Creek riparian habitat would be protected under B-9. Setbacks of a minimum of 80 feet in elevation and steep topography between the creek and proposed development under B-9 would provide an adequate buffer.	<b>Consistent.</b> B-11 would be consistent because 1 long-eared owl and 3 white-tailed kite historic nesting locations, as well as other raptor nest sites, associated with Talega Creek riparian habitat would be protected under B-9. Setbacks of a minimum of 80 feet in elevation and steep topography between the creek and proposed development under B-9 would provide an adequate buffer.
146. Maintain an east-west habitat linkage for gnatcatcher and cactus wren to protected habitat in the Talega and Forster Ranch Planned Communities.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid habitat linkage Q along Talega Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid habitat linkage Q along Talega Canyon.	<b>Consistent.</b> B-10 would be consistent because it would avoid habitat linkage Q along Talega Canyon.	<b>Consistent.</b> B-11 would be consistent because it would avoid habitat linkage Q along Talega Canyon.
147. Maintain an east-west habitat linkage for large mammals along Talega Creek with sufficient width at confluence with Cristianitos Creek and along south-facing slope.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid habitat linkage Q along Talega Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid habitat linkage Q along Talega Canyon.	<b>Consistent.</b> B-10 would be consistent because it would avoid habitat linkage Q along Talega Canyon.	<b>Consistent.</b> B-11 would be consistent because it would avoid habitat linkage Q along Talega Canyon.
148. Protect the four known locations of thread-leaved brodiaea east of the Northrop Grumman facilities that constitute an important population	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid impacts to the four brodiaea locations.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Could be consistent.</b> B-9 could be consistent because the proposed golf course would be designed to avoid impacts to the four brodiaea locations.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to the four brodiaea locations.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to the four brodiaea locations.
149. Protect eight locations of many-stemmed dudleya east of the Northrop Grumman facilities that may constitute an important population.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid impacts to the eight dudleya locations.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to the eight dudleya locations.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to the eight dudleya locations.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to the eight dudleya locations.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>Other Planning Area Protection Recommendations</b>						
150. Protect a habitat linkage, consisting of the Donna O'Neill Land Conservancy and an area along the east side of Cristianitos Creek, to provide connectivity for gnatcatchers in the upper portion of the sub-basin with other populations in Lower Gabino Creek and Camp Pendleton along lower Cristianitos/San Mateo Creek, and to maintain habitat integrity through connectivity within the Donna O'Neill Land Conservancy at Rancho Mission Viejo.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would provide for a habitat linkage (N) along Cristianitos Creek and the O'Neill Conservancy by providing a setback from Cristianitos Creek for development in the Cristianitos and Talega sub-basins.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would provide for a habitat linkage (N) along Cristianitos Creek and the O'Neill Conservancy by providing a setback from Cristianitos Creek for development in the Cristianitos and Talega sub-basins.	<b>Consistent.</b> B-10 would be consistent because it would provide for a habitat linkage (N) along Cristianitos Creek and the O'Neill Conservancy by providing a setback from Cristianitos Creek for development in the Cristianitos and Talega sub-basins.	<b>Consistent.</b> B-11 would be consistent because it would provide for a habitat linkage (N) along Cristianitos Creek and the O'Neill Conservancy by providing a setback from Cristianitos Creek for development in the Cristianitos and Talega sub-basins.
151. Protect the majority of native grasslands in the area.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-6 would not be consistent because it would impact 88% of native grassland in the sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-9 would not be consistent because it would impact 84% (9 acres) of native grassland in the sub-basin.	<b>Consistent.</b> B-10 would be consistent because it would protect 54% (6.6 acres) of native grassland in the sub-basin.	<b>Consistent.</b> B-11 would be consistent because it would protect 59% (7.2 acres) of native grassland in the sub-basin.
152. Protect the integrity of arroyo toad populations in lower Cristianitos Creek by maintaining current hydrologic conditions.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because hydrologic and sediment delivery processes would be maintained by implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because hydrologic and sediment delivery processes would be maintained by addressing "hydrologic conditions of concern" in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. "Hydrologic conditions of concern" would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because hydrologic and sediment delivery processes would be maintained by addressing "hydrologic conditions of concern" in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. "Hydrologic conditions of concern" would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because hydrologic and sediment delivery processes would be maintained by addressing "hydrologic conditions of concern" in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. "Hydrologic conditions of concern" would be adaptively managed by the development entities as described in Chapter 9.
153. Protect breeding and foraging habitat and movement opportunities within the streamcourse and adjacent alluvial terraces for the arroyo toad. Address potential upland estivation habitat needs in the context of best scientific information regarding the influence of topography, soils and other factors that appear to influence arroyo toad lateral movement and frequency of use in upland areas away from	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid direct impacts to lower Cristianitos Creek and Talega Creek and would include setbacks at a minimum of 80 feet above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid direct impacts to lower Cristianitos Creek and Talega Creek and would include setbacks at a minimum of 80 feet above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces.	<b>Consistent.</b> B-10 would be consistent because it would avoid direct impacts to lower Cristianitos Creek and Talega Creek and would include setbacks at a minimum of 80 feet above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces.	<b>Consistent.</b> B-11 would be consistent because it would avoid direct impacts to lower Cristianitos Creek and Talega Creek and would include setbacks at a minimum of 80 feet above the creek to provide for adequate upland habitat for lateral movement within adjacent alluvial terraces.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
streamcourse habitat areas.						
154. Protect breeding and foraging habitat for the least Bell's vireo, yellow-breasted chat and yellow warbler along lower Cristianitos Creek.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would avoid impacts to lower Cristianitos Creek and adjacent uplands and thus protect breeding and foraging habitat for the least Bell's vireo, yellow-breasted chat and yellow warbler.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to lower Cristianitos Creek and adjacent uplands and thus protect breeding and foraging habitat for the least Bell's vireo, yellow-breasted chat and yellow warbler.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to lower Cristianitos Creek and adjacent uplands and thus protect breeding and foraging habitat for the least Bell's vireo, yellow-breasted chat and yellow warbler.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to lower Cristianitos Creek and adjacent uplands and thus protect breeding and foraging habitat for the least Bell's vireo, yellow-breasted chat and yellow warbler.
155. Protect breeding habitat and to the extent feasible foraging habitat for resident and wintering raptor species.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Not consistent.</b> B-6 would not be consistent because it would avoid impacts to lower Cristianitos Creek, but a substantial area of adjacent grasslands would be impacted.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to lower Cristianitos Creek breeding habitat and most of the adjacent upland foraging habitat for the raptors.	<b>Consistent.</b> B-10 would be consistent because it would avoid impacts to lower Cristianitos Creek breeding habitat and most of the adjacent upland foraging habitat for the raptors.	<b>Consistent.</b> B-11 would be consistent because it would avoid impacts to lower Cristianitos Creek breeding habitat and most of the adjacent upland foraging habitat for the raptors.
156. Maintain a north-south habitat linkage along Cristianitos Creek between San Juan Creek and lower San Mateo Creek for gnatcatchers and other avian species, as well as large mammals such as mountain lion, bobcat, coyote, and mule deer.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it would provide for a habitat linkage (N) along Cristianitos Creek and the O'Neill Conservancy by providing setbacks from Cristianitos Creek associated with development in this sub-basin, as well as the Cristianitos and Talega sub-basins.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because development would be setback from Cristianitos Creek in this sub-basin, and in combination with no development in the Cristianitos sub-basin and the setback of development in the Talega sub-basin, the function of habitat linkage N would be maintained.	<b>Consistent.</b> B-10 would be consistent because development would be setback from Cristianitos Creek in this sub-basin, and in combination with no development in the Cristianitos sub-basin and the setback of development in the Talega sub-basin, the function of habitat linkage N would be maintained.	<b>Consistent.</b> B-11 would be consistent because development would be setback from Cristianitos Creek in this sub-basin, and in combination with no development in the Cristianitos sub-basin and the setback of development in the Talega sub-basin, the function of habitat linkage N would be maintained.
157. Maintain an east-west habitat linkage from Gabino Creek to the confluence with Cristianitos Creek for wildlife movement between Gabino Canyon and the Donna O'Neill Conservancy at Rancho Mission Viejo.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-6 would be consistent because it proposes a setback between development and the confluence of Cristianitos and Gabino creeks, thus maintaining an east-west habitat linkage (O) to the Conservancy.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed.	<b>Consistent.</b> B-9 would be consistent because it proposes a setback between development and the confluence of Cristianitos and Gabino creeks, thus maintaining an east-west habitat linkage (O) to the Conservancy.	<b>Consistent.</b> B-10 would be consistent because it proposes a setback between development and the confluence of Cristianitos and Gabino creeks, thus maintaining an east-west habitat linkage (O) to the Conservancy.	<b>Consistent.</b> B-11 would be consistent because it proposes a setback between development and the confluence of Cristianitos and Gabino creeks, thus maintaining an east-west habitat linkage (O) to the Conservancy.
<b>Other Planning Area Management Recommendations</b>						
158. In conjunction with upstream and adjacent control efforts, implement an invasive plant species control program.	<b>Consistent.</b> B-5 would be consistent because it would include an Invasive Plant Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Consistent.</b> B-6 would be consistent because it would include an Invasive Plant Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Could be consistent.</b> B-8 could be consistent if funding to implement the Adaptive Management Program, including an Invasive Plant Species Control Plan, was identified.	<b>Consistent.</b> B-9 would be consistent because it would include an Invasive Plant Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Consistent.</b> B-10 would be consistent because it would include an Invasive Plant Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.	<b>Consistent.</b> B-11 would be consistent because it would include an Invasive Plant Species Control Plan component of the Adaptive Management Program which addresses species of concern in the sub-basin such as tamarisk and pampas grass.
<b>PLANNING AREA-WIDE SPECIES CONSIDERATIONS</b>						
<b>Golden Eagle Protection Recommendations</b>						
159. Protect foraging habitat for the golden eagle to the extent feasible in the Chiquita, Gobernadora, Upper Gabino, Cristianitos and Talega sub-basins.  (Note: As described in the NCCP Planning Guidelines, "Golden eagles are an uncommon	<b>Consistent.</b> B-5 would be consistent because it would concentrate development in the San Juan Creek Watershed in favor of protecting the RMV portion of the San Mateo Creek Watershed. Golden eagle foraging habitat in the Lower Chiquita and Gobernadora sub-basins would not be protected,	<b>Consistent.</b> B-6 would be consistent because potential golden eagle foraging habitat in the Chiquita Canyon sub-basin would be protected. Foraging habitat in the Gobernadora sub-basin largely would be impacted. Foraging habitat in the Cristianitos, Gabino and Blind Canyons, and Talega sub-basins	<b>Consistent.</b> B-8 would be consistent because it would concentrate development in the Gobernadora sub-basin, leaving the Chiquita, Cristianitos, Gabino and Blind Canyons, and Talega sub-basins intact and suitable as foraging habitat for the golden eagle.	<b>Consistent.</b> B-9 would be consistent because while it proposes development in the Lower Chiquita, Gobernadora and Talega sub-basins, foraging habitat would be protected in Middle and Upper Chiquita, Upper Gabino and Cristianitos sub-basins. Within the context of occasional use of RMV for	<b>Consistent.</b> B-10 would be consistent with this recommendation. Under B-10, potential golden eagle foraging habitat in the Chiquita, Gobernadora, Cristianitos and Talega sub-basins would be impacted. However, within the context of occasional use of RMV for foraging, the golden eagle	<b>Consistent.</b> B-11 would be consistent with this recommendation. Under B-11, potential golden eagle foraging habitat in the Chiquita, Gobernadora, Cristianitos and Talega sub-basins would be impacted. However, within the context of occasional use of RMV for foraging, the golden eagle likely



**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
resident in the subregion. They are known to nest in the Cleveland National Forest, and although not known to nest on RMV, they occasionally forage in grasslands and agricultural areas throughout much of RMV, but especially in grasslands and agricultural areas in the Chiquita, Gobernadora, upper Gabino, Cristianitos, and Talega sub-basins.)	but foraging habitat in Upper Gabino, Cristianitos and Talega would be avoided.	would be partially impacted, but substantial grassland area would remain. Golden eagles nesting in the CNF likely would continue to forage in portions of the RMV property.		foraging, the golden eagle likely would continue to forage in the planning area under the B-9 alternative.	likely would continue to forage in the planning area under the B-10 alternative in areas such as Upper Gabino Canyon and Upper Chiquita Canyon.	would continue to forage in the planning area under the B-10 alternative in areas such as Upper Gabino Canyon and Upper Chiquita Canyon.
<b>Mountain Lion Protection Recommendations</b>						
160. Protect "live-in" habitat within the RMV portion of the San Mateo Creek Watershed and Verdugo Canyon in the San Juan Creek Watershed adequate to meet the life history requirements of the mountain lion, comprising a large, unfragmented block of chaparral and coastal sage scrub directly connected to more than 100,000 acres in Caspers Wilderness Park, the Cleveland National Forest, and Camp Pendleton.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino sub-basins would be protected. While B-5 proposes development within the Verdugo sub-basin, the upper portion of the sub-basin within RMV would be protected, thereby providing a link to Caspers Wilderness Park and the CNF.	<b>Consistent.</b> B-6 would be consistent because it would provide for a large habitat block consisting of Verdugo Canyon, Middle Gabino, La Paz and the eastern Talega sub-basins, which would link to Caspers Wilderness Park, the CNF, and Camp Pendleton. The proposed development in Upper Gabino may compromise the mountain lion's use of this area and bring lions into greater contact with humans.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the San Mateo Creek Watershed or Verdugo Canyon. Therefore, a large "live-in" habitat block consisting of Gabino, Cristianitos, La Paz and Talega would be protected that would link to Caspers Wilderness Park, the CNF, and Camp Pendleton.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Gabino, La Paz and Cristianitos sub-basins, as well as the eastern portion of the Talega sub-basin. A large "live-in" habitat block in the RMV portion of the San Mateo Creek Watershed would be protected. While B-9 proposes development within the Verdugo sub-basin, the upper portion of the sub-basin within RMV would be protected, thereby providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF.	<b>Consistent.</b> B-10 would be consistent because it would provide for a large habitat block consisting of Verdugo Canyon, upper and Middle Gabino, and La Paz canyons, and the eastern Talega sub-basin, which would link to Caspers Wilderness Park, the CNF, and Camp Pendleton.	<b>Consistent.</b> B-11 would be consistent because it would provide for a large habitat block consisting of Verdugo Canyon, upper and Middle Gabino, and La Paz canyons, and the eastern Talega sub-basin, which would link to Caspers Wilderness Park, the CNF, and Camp Pendleton.
161. Maintain habitat connections throughout the planning area to provide movement opportunities for the mountain lion. As described above for individual sub-basins, as well as other areas in the planning area, important movement areas for mountain lion include Arroyo Trabuco, the Foothill-Trabuco Specific Plan Area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, Trampas Canyon, Cristianitos Canyon, Verdugo Canyon, Gabino Canyon, La Paz Canyon and Talega Canyon.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.
<b>Mountain Lion Management Recommendations</b>						
162. In areas identified as "live-in" habitat or habitat connections for mountain lion, roads that are necessary to serve approved land and water uses located inside or	<b>Consistent.</b> B-5 would be consistent because roads constructed as part B-5 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-6 would be consistent because roads constructed as part B-6 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-8 would be consistent because roads constructed as part B-8 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-9 would be consistent because roads constructed as part B-9 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-10 would be consistent because roads constructed as part B-10 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-11 would be consistent because roads constructed as part B-11 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
outside the Habitat Reserve shall be designed and sited to accommodate mountain lion movement to the maximum extent feasible. Where roads are necessary, under the approved NCCP/HCP, they will be designed consistent with safety, roadway design criteria that are appropriate for the setting and desired roadway function. Roadway design shall include bridges and/or culverts large enough to accommodate mountain lion movement at key areas and, where appropriate and feasible, may include wildlife over crossings. As appropriate, fencing, grading and plant cover will be provided to serve wildlife crossings consistent with conservation principles and the Adaptive Management Program. Where feasible and safe, lighting along roadways within the Habitat Reserve should be avoided. Where roadway lighting within the Habitat Reserve is necessary for public safety reasons, it should be low-sodium or similar low intensity lighting that is directed away or shielded from the Habitat Reserve.						
<b>Mule Deer Protection Recommendations</b>						
163. Protect "live-in" habitat within the portion of the San Mateo Creek Watershed in the planning area adequate to meet the life history requirements of the mule deer, comprising a large, unfragmented block of chaparral and coastal sage scrub directly connected to Caspers Wilderness Park, the Cleveland National Forest, and Camp Pendleton.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino sub-basins would be protected, thereby providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF.	<b>Consistent.</b> B-6 would be consistent because it would provide for a large habitat block consisting of the Middle Gabino, La Paz sub-basins and the eastern Talega sub-basin which would link to Caspers Wilderness Park, the CNF, and Camp Pendleton. The proposed development in Upper Gabino may somewhat affect the mule deer's use of this area and bring them into greater contact with humans (e.g., vehicle collisions), but this impact likely would not be significant because of the	<b>Consistent.</b> B-8 would be consistent because it proposes no development in RMV portion of the San Mateo Creek Watershed. Therefore, a large "live-in" habitat block consisting of the Gabino, Cristianitos, La Paz and Talega sub-basins would be protected that would link to Caspers Wilderness Park, the CNF, and Camp Pendleton.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Gabino, La Paz and Cristianitos sub-basins, as well as the eastern portion of the Talega sub-basin. Therefore, a large "live-in" habitat block in the RMV portion of the San Mateo Creek Watershed would be protected, thereby providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF.	<b>Consistent.</b> B-10 would be consistent because it would provide for a large habitat block consisting of the upper and Middle Gabino and La Paz sub-basin and the eastern Talega sub-basin which would link to Caspers Wilderness Park, the CNF, and Camp Pendleton.	<b>Consistent.</b> B-11 would be consistent because it would provide for a large habitat block consisting of the upper and Middle Gabino and La Paz sub-basin and the eastern Talega sub-basin which would link to Caspers Wilderness Park, the CNF, and Camp Pendleton.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
		deer's tolerance for human presence.				
164. Protect "live-in" habitat within the San Juan Creek Watershed in the planning area adequate to meet the life history requirements of the mule deer, including Chiquita Ridge, Chiquadora Ridge, the ridgeline separating the Chiquita and Wagon Wheel sub-basins, and the ridgeline separating the Gobernadora and Bell Canyon sub-basins that directly connects to Caspers Wilderness Park and Audubon Starr Ranch Sanctuary.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.	See individual sub-basins for consistency.
165. Maintain habitat connections throughout the planning area to provide movement opportunities for the mule deer. As described above for individual sub-basins, as well as other areas in the planning area, important movement areas for mule deer include Arroyo Trabuco, the Foothill-Trabuco Specific Plan Area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, Trampas Canyon, Cristianitos Canyon, Verdugo Canyon, Gabino Canyon, La Paz Canyon and Talega Canyon.	<b>Consistent.</b> See individual sub-basins for specific consistency determinations for this recommendation. In addition, the Arroyo Trabuco would be protected under B-5. As a designated Existing Use area, habitat connections in the Foothill-Trabuco Specific Plan Area will be determined through the environmental review and permitting process for projects in the Specific Plan area.	<b>Consistent.</b> See individual sub-basins for specific consistency determinations for this recommendation. In addition, the Arroyo Trabuco would be protected under B-6. As a designated Existing Use area, habitat connections in the Foothill-Trabuco Specific Plan Area will be determined through the environmental review and permitting process for projects in the Specific Plan area.	<b>Consistent.</b> See individual sub-basins for specific consistency determinations for this recommendation. In addition, the Arroyo Trabuco would be protected under B-8. As a designated Existing Use area, habitat connections in the Foothill-Trabuco Specific Plan Area will be determined through the environmental review and permitting process for projects in the Specific Plan area.	<b>Consistent.</b> See individual sub-basins for specific consistency determinations for this recommendation. In addition, the Arroyo Trabuco would be protected under B-9. As a designated Existing Use area, habitat connections in the Foothill-Trabuco Specific Plan Area will be determined through the environmental review and permitting process for projects in the Specific Plan area.	<b>Consistent.</b> See individual sub-basins for specific consistency determinations for this recommendation. In addition, the Arroyo Trabuco would be protected under B-10. As a designated Existing Use area, habitat connections in the Foothill-Trabuco Specific Plan Area will be determined through the environmental review and permitting process for projects in the Specific Plan area.	<b>Consistent.</b> See individual sub-basins for specific consistency determinations for this recommendation. In addition, the Arroyo Trabuco would be protected under B-11. As a designated Existing Use area, habitat connections in the Foothill-Trabuco Specific Plan Area will be determined through the environmental review and permitting process for projects in the Specific Plan area.
<b>Mule Deer Management Recommendations</b>						
166. In areas identified as "live-in" habitat or habitat connections, roads that are necessary to serve approved land and water uses located inside or outside the Habitat Reserve shall be designed and sited to accommodate mule deer movement to the maximum extent feasible. Where roads are necessary, under the approved NCCP/HCP, they will be designed consistent with safety, roadway design criteria that are appropriate for the setting	<b>Consistent.</b> B-5 would be consistent because roads constructed as part B-5 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-6 would be consistent because roads constructed as part B-6 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-8 would be consistent because roads constructed as part B-8 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-9 would be consistent because roads constructed as part B-9 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-10 would be consistent because roads constructed as part B-10 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.	<b>Consistent.</b> B-11 would be consistent because roads constructed as part B-11 would comply with the recommendation regarding siting, wildlife movement bridges and culverts, and lighting.

**TABLE M-4 (Continued)**  
**SOUTHERN NCCP/HCP SUB-BASIN PLANNING GUIDELINES CONSISTENCY FINDINGS**

Planning Guidelines	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<p>and desired roadway function. Roadway design shall include bridges and/or culverts large enough to accommodate mule deer movement at key areas and, where appropriate and feasible, may include wildlife over crossings. (note: of the large mammal species, mule deer are the most sensitive to bridge and culvert design. Designs that accommodate mule deer are generally suitable for mountain lion, bobcat and coyote.) As appropriate, fencing, grading and plant cover will be provided to serve wildlife crossings consistent with conservation principles and the Adaptive Management Program. Where feasible and safe, lighting along roadways within the Habitat Reserve should be avoided. Where roadway lighting within the Habitat Reserve is necessary for public safety reasons, it should be low-sodium or similar low intensity lighting that is directed away or shielded from the Habitat Reserve.</p>						

**TABLE M-5  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>SAN JUAN CREEK WATERSHED</b>						
<b>Chiquita Canyon Sub-basin</b>						
1. Consistent with the SAMP Tenets, protect the headwaters of Upper Chiquita Canyon.	<b>Consistent.</b> B-5 would be consistent because Upper Chiquita Canyon north of Oso Parkway was conserved as mitigation for the FTC-N segment between Oso Parkway and Antonio Parkway.	<b>Consistent.</b> B-6 would be consistent because Upper Chiquita Canyon north of Oso Parkway was conserved as mitigation for the FTC-N segment between Oso Parkway and Antonio Parkway.	<b>Consistent.</b> B-8 would be consistent because Upper Chiquita Canyon north of Oso Parkway was conserved as mitigation for the FTC-N segment between Oso Parkway and Antonio Parkway.	<b>Consistent.</b> B-9 would be consistent because Upper Chiquita Canyon north of Oso Parkway was conserved as mitigation for the FTC-N segment between Oso Parkway and Antonio Parkway.	<b>Consistent.</b> B-10 would be consistent because Upper Chiquita Canyon north of Oso Parkway was conserved as mitigation for the FTC-N segment between Oso Parkway and Antonio Parkway.	<b>Consistent.</b> B-11 would be consistent because Upper Chiquita Canyon north of Oso Parkway was conserved as mitigation for the FTC-N segment between Oso Parkway and Antonio Parkway.
2. Avoid creating impervious surfaces in the sandy soils of the canyon floor. To the extent feasible, land uses in the major side canyons should be limited to primarily pervious surfaces in order to maintain infiltration.	<b>Not consistent.</b> B-5 would not be consistent because it would include development in the valley floor and in all but one of the major side canyons.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Consistent.</b> B-9 would be consistent because no development would occur in the sandy soils in the main canyon floor throughout the sub-basin and no development would occur north of the treatment plant, and therefore no impervious surfaces would occur in these locations. However, development would occur below the treatment plant under this alternative, and the major side canyon would be impacted.	<b>Consistent.</b> B-10 would be consistent because it would avoid creating impervious surfaces in the valley floor throughout the sub-basin, in the major side canyons above the treatment plant and the major side canyon below the treatment plant. Uses proposed in the valley floor and major side canyons would be pervious including golf course and habitat protection.	<b>Not Consistent.</b> B-11 would not be consistent because development would occur in the major side canyons above and below the treatment plant.
3. Emulate existing terrains/hydrology and sediment transport processes by locating development on the ridges, which under present conditions have higher runoff rates and direct surface runoff flows to the permeable substrate of the major side canyons and along the valley floor.	<b>Not consistent.</b> B-5 would not be consistent because development is proposed for the ridges, side canyons and main valley floor of the sub-basin. B-5 also would not allow for routing surface flows to the side canyons.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Not consistent.</b> B-9 would not be consistent because development south of the treatment plant would impact the major side canyon, although it proposes no development north of the treatment plant, and thus would be consistent for this area. However, where development is proposed south of the treatment plant, the Water Quality Management Plan would include provisions for directing surface runoff flows to permeable substrates in the valley floor.	<b>Consistent.</b> B-10 would be consistent because it would avoid creating impervious in the sandy soils in the main canyon floor throughout the sub-basin, in the major side canyons above the treatment plant and the major side canyon below the treatment plant. Uses proposed in these locations include golf course and habitat protection.	<b>Not consistent.</b> B-11 would not be consistent because although it proposes development on the ridges, it also proposes development in the major side canyons and thus does not recognize the existing hydrology and sediment transport processes.
4. Promote stormwater surface flow connectivity between the major side canyons and the main stream channel to maintain transient surface channel connections that occur following extreme rainfall events, without significantly changing connections during small storms.	<b>Not consistent.</b> B-5 would not be consistent because development in the main canyon and side canyons would preclude effective connectivity for maintaining stormwater flows.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Not consistent.</b> B-9 would not be consistent because although it proposes no development north of the treatment plant, and thus would be consistent for this area, proposed development south of the treatment plant would impact the major side canyon.	<b>Consistent.</b> B-10 would be consistent because it would maintain connectivity between the side canyons and the main channel throughout the sub-basin via golf course design and implementation of the Water Quality Management Plan.	<b>Not consistent.</b> B-11 would not be consistent because development is proposed in the major side canyons thus disrupting connectivity between the major side canyons and the main channel.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
5. Identify natural treatment systems for water quality treatment and stormwater detention that would be appropriate in the sandy soils of the major side canyons and the valley floor.	<b>Not consistent.</b> B-5 would not be consistent because all alluvium in the side canyons would have to be removed and thus could not provide for water quality/stormwater detention in the sandy soils.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek, therefore no water quality treatment would be necessary.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek, therefore no water quality treatment would be necessary.	<b>Could be consistent.</b> B-9 could be consistent because natural treatments would be identified within the valley floor south of the treatment plant. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. The Water Quality Management Plan would include provisions for directing surface runoff flows to permeable substrates along the valley floor outside of the Habitat Reserve. No water quality treatment would necessary under this alternative north of the treatment plant as no development is proposed in this location.	<b>Consistent.</b> B-10 would be consistent because the Water Quality Management Plan identifies natural treatment systems and stormwater detention appropriate for the sandy soils in the major side canyons and the valley floor that would be implemented by this alternative.	<b>Not consistent.</b> B-11 would not be consistent because it proposes development in the major side canyons thus precluding implementation of natural treatment systems and stormwater detention facilities in the sandy soils.
6. Maintain groundwater recharge to the shallow subsurface water system to sustain flows to Chiquita Creek.	<b>Not consistent.</b> B-5 would not be consistent because it would result in extensive impervious surfaces within the side canyons and main valley floor, resulting in the loss of shallow subsurface water recharge.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek, and therefore existing groundwater recharge would be maintained in the sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek, and therefore existing groundwater recharge would be maintained in the sub-basin.	<b>Consistent.</b> B-9 would be consistent because existing groundwater recharge would be maintained north of the treatment plant under this alternative. South of the treatment plant, groundwater recharge would be maintained via protection of the valley floor below the treatment plant and implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because stormwater flows would be directed to the major side canyons and detention areas along the valley floor as provided for in the Water Quality Management Plan. Also as provided for in the WQMP, management of water quality would be in compliance with the MS4 permit issued to the County of Orange by the SDRWQCB. Water quality would be adaptively managed as described in Chapter 9. Groundwater recharge would be maintained to Chiquita Creek under this alternative.	<b>Not consistent.</b> B-11 would not be consistent because it proposes development in the major side canyons thus affecting groundwater recharge in the side canyons. Groundwater recharge could occur in the valley floor through implementation of detention facilities provided for in the Water Quality Management Plan.
7. Address existing areas of channel incision that result from primarily localized processes/land use practices, as contrasted with terrace-forming valley-deepening areas that are primarily a result of long-term geologic conditions. Site-by-site geomorphic analysis will be undertaken to define these areas.	<b>Consistent.</b> B-5 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan to address localized headcuts.	<b>Consistent.</b> B-6 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan to address localized headcuts.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan to address localized headcuts.	<b>Consistent.</b> B-10 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan to address localized headcuts.	<b>Consistent.</b> B-11 would be consistent because it proposes implementation of an Adaptive Management Program which includes a Habitat Restoration Plan to address localized headcuts.

**TABLE M-5 (Continued)**  
**SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
8. To the maximum extent practical, avoid direct impacts to the slope wetlands and maintain primary recharge characteristics that support these wetlands	<b>Not consistent.</b> B-5 would not be consistent because it would impact all of the slope wetlands east of Chiquita Creek.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Consistent.</b> B-6 would be consistent because it proposes no development within the Chiquita sub-basin north of San Juan Creek.	<b>Consistent.</b> B-9 would be consistent because it would avoid all slope wetlands below the treatment plant and also west of the creek. With regard to maintaining the primary recharge characteristics that support these wetlands, project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.	<b>Not Consistent.</b> B-10 would not be consistent because it would impact slope wetlands north of the treatment plant an east of the creek. Slope wetlands south of the treatment plant and west of the creek would be protected. With regard to maintaining the primary recharge characteristics that support these wetlands project grading will not intersect the primary groundwater movement formations. Given existing hardpan soils, future landscape irrigation and the protection of a significant portion of Chiquadora Ridge, recharge would be maintained into the deep groundwater system supporting the slope wetlands.	<b>Not Consistent.</b> B-11 would not be consistent because it would impact slope wetlands north and south of the treatment plant an east of the creek. Slope wetlands located west of the creek would be protected.
<b>Gobernadora Canyon Sub-basin and Central San Juan Subunit North of San Juan Creek</b>						
9. Protect Cañada Gobernadora valley floor above the knickpoint to provide for creek meandering (as occurred historically) and for restoration of riparian processes and habitat.	<b>Not consistent.</b> B-5 would not be consistent because it would not protect the valley floor above the knickpoint, and therefore would not allow for the restoration of creek meander and riparian processes and habitat.	<b>Not consistent.</b> B-6 would not be consistent because it would not protect the valley floor above the knickpoint, and therefore would not allow for the restoration of creek meander and riparian processes and habitat.	<b>Could be consistent.</b> B-8 would protect the valley floor above the knickpoint. B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it would protect the valley floor above the knickpoint, allowing for restoration of creek meandering and riparian processes.	<b>Consistent.</b> B-10 would be consistent because it would protect the valley floor above the knickpoint, allowing for restoration of creek meander and riparian processes and habitat.	<b>Consistent.</b> B-11 would be consistent because it would protect the valley floor above the knickpoint, allowing for restoration of creek meander and riparian processes and habitat.
10. In order to emulate current hydrologic patterns, development areas should be set back from the valley floor and focus on areas that presently manifest Class D soils runoff characteristics, including those areas with existing hardpan caps.	<b>Not consistent.</b> B-5 would not be consistent because development would not be set back from the valley floor.	<b>Not consistent.</b> B-6 would not be consistent because development would not be set back from the valley floor.	<b>Not consistent.</b> B-8 would not be consistent because although it proposes development generally set back from the valley floor and located primarily on class C and D soils, a portion of the “development bubble” would allow development to the edge of the valley floor in a few locations and would allow for development in the alluvial side canyons.	<b>Not consistent.</b> B-9 would not be consistent because although it proposes development generally set back from the valley floor and located primarily on class C and D soils, a portion of the “development bubble” would allow development to the edge of the valley floor.	<b>Not consistent.</b> B-10 would not be consistent because although it proposes development generally set back from the valley floor and located primarily on class C and D soils, a portion of the “development bubble” would allow development to the edge of the valley floor in a few locations and would allow for development in the alluvial side canyons.	<b>Not consistent.</b> B-11 would not be consistent because although it proposes development generally set back from the valley floor and located primarily on class C and D soils, a portion of the “development bubble” would allow development to the edge of the valley floor in a few locations and would allow for development in the alluvial side canyons.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
11. Deep alluvial deposits that function as important infiltration/recharge areas underlie the valley floor and adjacent tributary swales. At the same time, any changes in future stormwater flows to these areas may need to be accompanied by groundwater management due to limited infiltration capacity resulting from high groundwater levels.	<b>Not consistent.</b> B-5 would not be consistent because groundwater management would be difficult due to the extensive development in the valley floor allowing for the direct discharge of irrigation and stormwater to groundwater recharge areas.	<b>Not consistent.</b> B-6 would not be consistent because groundwater management would be difficult due to the extensive development in the valley floor allowing for the direct discharge of irrigation and stormwater to groundwater recharge areas.	<b>Consistent.</b> B-8 would be consistent because it would provide for the ability to implement groundwater management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-9 would be consistent because it would include special groundwater management provisions for Gobernadora as part of the Water Quality Management Plan “conditions of concern” element. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because it would include special groundwater management provisions for Gobernadora as part of the Water Quality Management Plan “conditions of concern” element. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it would include special groundwater management provisions for Gobernadora as part of the Water Quality Management Plan “conditions of concern” element. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.
12. Given the size of the valley floor, there are opportunities for creating natural treatment systems to treat potential existing and future urban runoff from the Gobernadora sub-basin, as well as provide opportunities for expanded wetlands habitat areas.	<b>Not consistent.</b> B-5 would not be consistent because while it could provide for natural treatment systems, it would not allow for expanded wetlands habitat areas.	<b>Not consistent.</b> B-6 would not be consistent because while it could provide for natural treatment systems, it would not allow for expanded wetlands habitat areas.	<b>Consistent.</b> B-8 would be consistent because it would provide for the use of tributary side canyons for stormwater and water quality management. Opportunities for expanded wetlands habitat areas would be preserved above the knickpoint.	<b>Consistent.</b> B-9 would be consistent because it would provide for the use of tributary side canyons for stormwater and water quality management. Opportunities for expanded wetlands habitat areas would be preserved above the knickpoint.	<b>Consistent.</b> B-10 would be consistent because it would provide for the use of tributary side canyons for stormwater and water quality management. Opportunities for expanded wetlands habitat areas would be preserved above the knickpoint.	<b>Consistent.</b> B-11 would be consistent because it would provide for the use of tributary side canyons for stormwater and water quality management. Opportunities for expanded wetlands habitat areas would be preserved above the knickpoint.
13. Sediment management and creek restoration activities may be necessary in lower Gobernadora Canyon to address the present excessive sediment input from upstream urbanized areas. The increased sediment resulting from upstream construction will likely be moving through the system for a prolonged period. Eventually, sediment loads may decrease due to buildout of the upper watershed. Consequently, floodplain restoration should account for both the existing and potential future sediment regimes.	<b>Not consistent.</b> B-5 would not be consistent because it would not allow for floodplain restoration and would generally not allow for restoration efforts in the Sulphur Canyon drainage tributary to Gobernadora Creek.	<b>Not consistent.</b> B-6 would not be consistent because it would not allow for floodplain restoration and would generally not allow for restoration efforts in the Sulphur Canyon drainage tributary to Gobernadora Creek.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because the Sulphur Canyon restoration program, intended in part to reduce the generation of fine sediments in the Sulphur Canyon tributary, would be consistent with the floodplain /meander and surface/ subsurface flow restoration provisions of the Gobernadora Creek restoration plan.	<b>Consistent.</b> B-10 would be consistent because the Sulphur Canyon restoration program, intended in part to reduce the generation of fine sediments in the Sulphur Canyon tributary, would be consistent with the floodplain /meander and surface/ subsurface flow restoration provisions of the Gobernadora Creek restoration plan.	<b>Consistent.</b> B-11 would be consistent because the Sulphur Canyon restoration program, intended in part to reduce the generation of fine sediments in the Sulphur Canyon tributary, would be consistent with the floodplain /meander and surface/ subsurface flow restoration provisions of the Gobernadora Creek restoration plan.
14. Existing channel incision that has isolated the creek from the floodplain in some areas should be addressed as part of the restoration effort.	<b>Not consistent.</b> B-5 would not be consistent because it would not allow for floodplain restoration and would generally not allow for restoration efforts in the Sulphur Canyon drainage tributary to Gobernadora Creek.	<b>Not consistent.</b> B-6 would not be consistent because it would not allow for floodplain restoration and would generally not allow for restoration efforts in the Sulphur Canyon drainage tributary to Gobernadora Creek.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because the Sulphur Canyon restoration program, intended in part to reduce the generation of fine sediments in the Sulphur Canyon tributary, would be consistent with the floodplain /meander and surface/ subsurface flow restoration provisions of the Gobernadora Creek restoration plan.	<b>Consistent.</b> B-10 would be consistent because the Sulphur Canyon restoration program, intended in part to reduce the generation of fine sediments in the Sulphur Canyon tributary, would be consistent with the floodplain /meander and surface/ subsurface flow restoration provisions of the Gobernadora Creek restoration plan.	<b>Consistent.</b> B-11 would be consistent because the Sulphur Canyon restoration program, intended in part to reduce the generation of fine sediments in the Sulphur Canyon tributary, would be consistent with the floodplain /meander and surface/ subsurface flow restoration provisions of the Gobernadora Creek restoration plan.



**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
15. Protect the GERA and, to the extent feasible, minimize impacts to major riparian areas consistent with the overall restoration and management plan.	<b>Not consistent.</b> B-5 would not be consistent because, although it would not impact GERA, it would impact riparian areas in the "fertile crescent" area and other riparian areas in, and associated with, Gobernadora Creek above GERA.	<b>Consistent.</b> B-6 would be consistent because it would protect GERA, and other major upstream and downstream riparian areas, except in the "fertile crescent" area.	<b>Consistent.</b> B-8 would be consistent because it would protect GERA, and other major upstream and downstream riparian areas, except in the "fertile crescent" area.	<b>Consistent.</b> B-9 would be consistent because it would avoid impacts to GERA and other upstream and downstream riparian areas, although it would impact the "fertile crescent" area.	<b>Consistent.</b> B-10 would be consistent because it would protect GERA, and other major upstream and downstream riparian areas, except in the "fertile crescent" area.	<b>Consistent.</b> B-11 would be consistent because it would protect GERA, and other major upstream and downstream riparian areas, except in the "fertile crescent" area.
16. In order to help maintain the sediment transport functions of the central reach of San Juan Creek, the timing of peak flows in Cañada Gobernadora at the confluence with San Juan Creek should be managed to emulate existing conditions and avoid coincident peaks flows with San Juan Creek.	<b>Consistent.</b> B-5 would be consistent because under the Water Quality Management Plan new development would be required to regulate the timing of peak flows in order to avoid coincident peak flows with San Juan Creek. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-6 would be consistent because under the Water Quality Management Plan new development would be required to regulate the timing of peak flows in order to avoid coincident peak flows with San Juan Creek. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because under the Water Quality Management Plan new development would be required to regulate the timing of peak flows in order to avoid coincident peak flows with San Juan Creek. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-9 would be consistent because under the Water Quality Management Plan new development would be required to regulate the timing of peak flows in order to avoid coincident peak flows with San Juan Creek. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because under the Water Quality Management Plan new development would be required to regulate the timing of peak flows in order to avoid coincident peak flows with San Juan Creek. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because under the Water Quality Management Plan new development would be required to regulate the timing of peak flows in order to avoid coincident peak flows with San Juan Creek. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.
<b>Trampas Subunit and Central San Juan Subunit South of San Juan Creek</b>						
17. Trampas Canyon is suitable for development	<b>Consistent.</b> B-5 would be consistent because it proposes development in Trampas Canyon.	<b>Consistent.</b> B-6 would be consistent because it proposes development in Trampas Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes development in Trampas Canyon.	<b>Consistent.</b> B-9 would be consistent because it proposes development in Trampas Canyon.	<b>Consistent.</b> B-10 would be consistent because it proposes development in Trampas Canyon.	<b>Consistent.</b> B-11 would be consistent because it proposes development in Trampas Canyon.
18. Focus development in Trampas Canyon in disturbed and adjacent areas with low to moderate hydrologic, water quality and habitat integrity function and value.	<b>Not consistent.</b> B-5 would not be consistent because it proposes development outside of Trampas Canyon.	<b>Not consistent.</b> B-6 would not be consistent because it proposes development outside of Trampas Canyon.	<b>Consistent.</b> B-8 would be consistent because it would confine development to Trampas Canyon.	<b>Consistent.</b> B-9 would be consistent because it would confine development to Trampas Canyon.	<b>Consistent.</b> B-10 would be consistent because it would confine development to Trampas Canyon.	<b>Consistent.</b> B-11 would be consistent because it would confine development to Trampas Canyon.
19. The area along Radio Tower Road should be protected because it contains a diversity of wetland types and endangered fairy shrimp in close proximity to one another, thereby increasing the heterogeneity of the landscape from an aquatic resources perspective.	<b>Not consistent.</b> B-5 would not be consistent because it would impact one area of vernal pools that support fairy shrimp.	<b>Not consistent.</b> B-6 would not be consistent because it would impact one area of vernal pools that support fairy shrimp.	<b>Consistent.</b> B-8 would be consistent because it would avoid the area along Radio Tower Road and protect the diversity of wetland types and the fairy shrimp.	<b>Consistent.</b> B-9 would be consistent because it would avoid the area along Radio Tower Road and protect the diversity of wetland types and the fairy shrimp.	<b>Not consistent.</b> B-10 would not be consistent because it would impact one area of vernal pools that support fairy shrimp.	<b>Not consistent.</b> B-11 would not be consistent because it would impact one area of vernal pools that support fairy shrimp.
20. Stormwater flows from Trampas Creek into San Juan Creek should be managed to provide flows comparable to existing conditions.	<b>Consistent.</b> B-5 would be consistent because it would maintain flows comparable to existing conditions in conjunction with its stormwater and dry season flows management system.	<b>Consistent.</b> B-6 would be consistent because it would maintain flows comparable to existing conditions in conjunction with its stormwater and dry season flows management system.	<b>Consistent.</b> B-8 would be consistent because it would maintain flows comparable to existing conditions in conjunction with its stormwater and dry season flows management system.	<b>Consistent.</b> B-9 would be consistent because it would maintain flows comparable to existing conditions in conjunction with its stormwater and dry season flows management system.	<b>Consistent.</b> B-10 would be consistent because it would maintain flows comparable to existing conditions in conjunction with its stormwater and dry season flows management system.	<b>Consistent.</b> B-11 would be consistent because it would maintain flows comparable to existing conditions in conjunction with its stormwater and dry season flows management system.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
<b>Verdugo Canyon Sub-basin</b>						
21. Development with impervious surfaces should be limited in extent in order to protect the generation and transport of sediment to downstream areas, and to protect Verdugo Canyon from excessive erosion.	<b>Not consistent.</b> B-5 would not be consistent because it proposes extensive development in Verdugo Canyon, including a collector road, which would affect natural sediment processes.	<b>Consistent.</b> B-6 would be consistent because it proposes limited development in the western end of the sub-basin and allow for protection of sediment processes in Verdugo Canyon.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the Verdugo sub-basin, nor in upper Gabino Canyon, precluding the need for a connector road.	<b>Consistent.</b> B-9 would be consistent because development within the Verdugo sub-basin is limited in extent, and because within Verdugo Canyon itself there would be virtually no development that would adversely affect the generation and transport of coarse sediments.	<b>Consistent.</b> B-10 would be consistent because development within the Verdugo sub-basin is limited in extent, and because within Verdugo Canyon itself there would be virtually no development that would adversely affect the generation and transport of coarse sediments.	<b>Consistent.</b> B-11 would be consistent because development within the Verdugo sub-basin is limited in extent, and because within Verdugo Canyon itself there would be virtually no development that would adversely affect the generation and transport of coarse sediments.
22. Development should be set back from significant riparian habitat within the relatively narrow and geologically confined floodplain.	<b>Not consistent.</b> B-5 would not be consistent because development would not be set back from riparian areas within the sub-basin and a collector road in the canyon would be required.	<b>Consistent.</b> B-6 would be consistent because it proposes limited development in at the western end of the sub-basin. B-6 proposes to upgrade an existing gravel Ranch road to rural collector road through a portion of the sub-basin to the south of Verdugo Canyon. This road is not anticipated to have substantial impacts on riparian habitat (see circulation consistency analysis in Section 11.3.2).	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the Verdugo sub-basin, nor in upper Gabino Canyon, precluding the need for a connector road.	<b>Consistent.</b> B-9 would be consistent because it would avoid all riparian habitat within the mainstem of Verdugo Canyon, although it would impact limited riparian habitat in the southern portion of the sub-basin outside the mainstem canyon.	<b>Consistent.</b> B-10 would be consistent because it would avoid all riparian habitat within the mainstem of Verdugo Canyon, although it would impact limited riparian habitat in the southern portion of the sub-basin outside the mainstem canyon.	<b>Consistent.</b> B-11 would be consistent because it would avoid all riparian habitat within the mainstem of Verdugo Canyon, although it would impact limited riparian habitat in the southern portion of the sub-basin outside the mainstem canyon.
23. Infiltration functions should be protected through site design. Cumulative stormwater flows should be managed in such a way as to not change peak flows that under present conditions lag behind those of the mainstem of San Juan Creek. The area adjacent to the mouth of Verdugo Canyon provides opportunities for infiltration and flow attenuation.	<b>Not consistent.</b> B-5 would not be consistent because with extensive development in Verdugo Canyon infiltration functions would be difficult to maintain.	<b>Consistent.</b> B-6 would be consistent because with only a collector road in Verdugo Canyon and only limited development in the southerly portion of the sub-basin, infiltration and peak flow functions would be maintained.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Verdugo sub-basin.	<b>Consistent.</b> B-9 would be consistent because it would provide for infiltration functions by avoiding Verdugo Canyon. Storm flows from development elsewhere in the Verdugo sub-basin would be managed to maintain the existing relationship of peak flows.	<b>Consistent.</b> B-10 would be consistent because it would provide for infiltration functions by avoiding Verdugo Canyon. Storm flows from development elsewhere in the Verdugo sub-basin would be managed to maintain the existing relationship of peak flows.	<b>Consistent.</b> B-11 would be consistent because it would provide for infiltration functions by avoiding Verdugo Canyon. Storm flows from development elsewhere in the Verdugo sub-basin would be managed to maintain the existing relationship of peak flows.
<b>SAN MATEO CREEK WATERSHED</b>						
<b>Cristianitos Canyon Sub-basin</b>						
24. The headwater area should be protected, with new impervious surfaces limited in extent within the headwater area.	<b>Consistent.</b> B-5 would be consistent because it does not propose development in the headwater area.	<b>Consistent.</b> B-6 would be consistent because it does not propose development within the headwater area.	<b>Consistent.</b> B-8 would be consistent because it does not propose development within the headwater area.	<b>Consistent.</b> B-9 would be consistent because it does not propose development within the headwater area.	<b>Consistent.</b> B-10 would be consistent because limited low-density estate residential development is proposed within the headwater area.	<b>Consistent.</b> B-11 would be consistent because it does not propose development within the headwater area.
25. Where feasible, protected headwater areas should be targeted for restoration of native vegetation to reduce the generation of fine sediments from the clayey terrains and to promote infiltration, and to enhance the value of upland habitats adjacent to the streams.	<b>Consistent.</b> B-5 would be consistent because it does not propose development within the headwater area and the Habitat Restoration Plan component of the Adaptive Management Program targets this area for VGL restoration.	<b>Consistent.</b> B-6 would be consistent because it does not propose development within the headwater area and the Habitat Restoration Plan component of the Adaptive Management Program targets this area for VGL restoration.	<b>Could be consistent.</b> B-8 does not propose development in upper Cristianitos Canyon. B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it does not propose development within the headwater area and the Habitat Restoration Plan component of the Adaptive Management Program targets this area for VGL restoration.	<b>Not consistent.</b> B-10 would not be consistent because the development pattern of low-density estate residential, golf course and golf residential would preclude full implementation of the restoration recommendations for the sub-basin.	<b>Consistent.</b> B-11 would be consistent because it does not propose development within the headwater area and the Habitat Restoration Plan component of the Adaptive Management Program targets this area for VGL restoration.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
26. In order to emulate existing hydrologic conditions, development should focus on areas with clayey soils, which presently seal fairly quickly under storm conditions and have relatively high runoff rates. The overall goal should be to reduce the generation of fine sediments compared with existing conditions to reduce turbidity effects and other adverse impacts of fine sediments on downstream aquatic resources. Development in the middle and lower reach areas should be set back from the creek and should be located in higher areas to the east of the creek where existing erosion could be concurrently addressed.	<b>Not consistent.</b> B-5 would not be consistent because it proposes no development within the Cristianitos sub-basin, and therefore generation of fine sediments from erodible clay soils would continue.	<b>Consistent.</b> B-6 would be consistent because the "development bubble" east of the creek would focus on clay soils, and would be located in higher areas where existing erosion could be concurrently addressed with development.	<b>Not consistent.</b> B-8 would not be consistent because it proposes no development within the Cristianitos sub-basin, and therefore generation of fine sediments from erodible clay soils would continue.	<b>Consistent.</b> B-9 would be consistent because it proposes no development within the Cristianitos sub-basin. B-9 proposes a Habitat Restoration Plan component of the Adaptive Management Program that would help reduce the generation of fine sediments. Stabilization/remediation of the clay pits also would reduce fine sediments, but this work is very costly and the ability to sufficiently fund this program would need to be determined.	<b>Consistent.</b> B-10 would be consistent because the development pattern and uses proposed by this alternative would focus on the clay soils and would be setback from the creek thus reducing the generation of fine sediments.	<b>Consistent.</b> B-11 would be consistent because the development pattern and uses proposed by this alternative would focus on the clay soils and would be setback from the creek thus reducing the generation of fine sediments.
27. Stream stabilization opportunities should be examined in Cristianitos Creek (above the confluence with Gabino Creek) in the context of longer-term geologic processes.	<b>Consistent.</b> B-5 would be consistent because it proposes no development in the Cristianitos sub-basin and therefore would not preclude stream stabilization opportunities. B-5 would implement the Habitat Restoration Plan component of the Adaptive Management Program which includes stream stabilization in Cristianitos Creek.	<b>Consistent.</b> B-6 would be consistent because the siting of development areas would allow opportunities for future consideration of stream stabilization. B-6 would implement the Habitat Restoration Plan component of the Adaptive Management Program which includes stream stabilization in Cristianitos Creek.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin and therefore would not preclude stream stabilization opportunities. In addition, B-9 would implement the Habitat Restoration Plan component of the Adaptive Management Program which includes stream stabilization in Cristianitos Creek.	<b>Consistent.</b> B-10 would be consistent because it proposes a development pattern and type of development that would provide for stream stabilization opportunities. In addition, B-10 would implement the Habitat Restoration Plan component of the Adaptive Management Program which includes stream stabilization in Cristianitos Creek.	<b>Consistent.</b> B-11 would be consistent because it proposes a development pattern and type of development that would provide for stream stabilization opportunities. In addition, B-11 would implement the Habitat Restoration Plan component of the Adaptive Management Program which includes stream stabilization in Cristianitos Creek.
28. The alkali wetlands within the middle portion of the sub-basin should be protected in conjunction with protection of the overall riparian system.	<b>Consistent.</b> B-5 would be consistent because it proposes no development in the Cristianitos sub-basin and therefore would avoid the alkali wetlands and overall riparian system.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in the Cristianitos sub-basin and therefore would avoid the alkali wetlands and overall riparian system.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the Cristianitos sub-basin and therefore would avoid the alkali wetlands and overall riparian system.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Cristianitos sub-basin and therefore would avoid the alkali wetlands and overall riparian system.	<b>Consistent.</b> B-10 would be consistent because it avoids wetland/riparian habitats, including the alkali wetlands associated with Cristianitos Creek.	<b>Consistent.</b> B-11 would be consistent because it avoids wetland/riparian habitats, including the alkali wetlands associated with Cristianitos Creek.
<b>Gabino and Blind Canyons Sub-basin</b>						
29. Limit new impervious surfaces in the headwater area to locations that will not adversely impact runoff patterns.	<b>Consistent.</b> B-5 would be consistent because it proposes no development in the Gabino sub-basin.	<b>Not consistent.</b> B-6 would not be consistent because it proposes extensive development in the headwaters area in Upper Gabino.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in the Gabino sub-basin.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in the Gabino sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in the Gabino sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in the Gabino sub-basin.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
30. Protect the headwaters through restoration of existing gullies using a combination of slope stabilization, grazing management, and native grasslands and/or scrub restoration. To the extent feasible, restore native grasses to reduce sediment generation and promote infiltration of stormwater.	<b>Consistent.</b> B-5 would be consistent because it proposes no development in the Gabino sub-basin and also would implement an Adaptive Management Program that includes a Habitat Restoration Plan and Grazing Management Plan.	<b>Consistent.</b> B-6 would be consistent because it would implement an Adaptive Management Program that includes a Habitat Restoration Plan and Grazing Management Plan.	<b>Could be consistent.</b> B-8 could be consistent because it proposes no development in sub-basin. For B-8 to be consistent, an additional funding source would have to be identified to implement the Adaptive Management Program, including the Habitat Restoration Plan component.	<b>Could be consistent.</b> B-9 could be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased. However, the soil stabilization program would be costly and the availability of sufficient funding for the program would need to be determined.	<b>Could be consistent.</b> B-10 could be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased. However, the soil stabilization program would be costly and the availability of sufficient funding for the program would need to be determined.	<b>Could be consistent.</b> B-11 could be consistent because through implementation of the Habitat Restoration Plan component of the Adaptive Management Program, fine sediment yields would be decreased. However, the soil stabilization program would be costly and the availability of sufficient funding for the program would need to be determined.
31. Modify grazing management in the upper portion of the sub-basin to support restoration and vegetation management in the headwater areas.	<b>Consistent.</b> B-5 would be consistent because it would implement the Adaptive Management Program, which includes a Grazing Management Plan. Grazing under B-5 could be modified to accomplish this recommendation.	<b>Not applicable.</b> Under B-6, this recommendation would not be applicable because there would be no grazing in Upper Gabino.	<b>Could be consistent.</b> B-8 could be consistent if an additional funding source was identified to implement the Adaptive Management Program, including the Grazing Management Plan component.	<b>Consistent.</b> B-9 would be consistent because it would implement the Adaptive Management Program, which includes a Grazing Management Plan. Grazing under B-9 could be modified to accomplish this recommendation.	<b>Consistent.</b> B-10 would be consistent because it would implement the Adaptive Management Program, which includes a Grazing Management Plan. Grazing under B-10 could be modified to accomplish this recommendation.	<b>Consistent.</b> B-11 would be consistent because it would implement the Adaptive Management Program, which includes a Grazing Management Plan. Grazing under B-11 could be modified to accomplish this recommendation.
32. Minimize impacts to the steep side canyons in the middle portion of the sub-basin by limiting new impervious surfaces.	<b>Consistent.</b> B-5 would be consistent because no development in Middle Gabino is proposed.	<b>Not consistent.</b> B-6 would not be consistent because while it would avoid residential development in the middle portion of the sub-basin, for wildfire evacuation purposes, it would likely require a second access road along the floor of Gabino Canyon connecting development in the upper portion to roads in the lower portion, thereby increasing impervious surfaces in the middle portion of the sub-basin.	<b>Consistent.</b> B-8 would be consistent because no development in Middle Gabino is proposed.	<b>Consistent.</b> B-9 would be consistent because no development in Middle Gabino is proposed.	<b>Consistent.</b> B-10 would be consistent because no development in Middle Gabino is proposed.	<b>Consistent.</b> B-11 would be consistent because no development in Middle Gabino is proposed.
33. To the extent feasible, focus development in the clayey soils and terrains in the lower portions of the sub-basin, where it could serve to reduce the generation of fine sediments and associated turbidity.	<b>Consistent.</b> B-5 would be consistent because although it proposes no development in the Gabino sub-basin, it would implement the Adaptive Management Program, which includes Habitat Restoration Plan and Grazing Management Plan components that will address the generation of fine sediments.	<b>Not consistent.</b> B-6 would not be consistent because a substantial amount of development would occur in the upper portion of the sub-basin, including a likely secondary fire evacuation road along the floor of the canyon.	<b>Could be consistent.</b> B-8 proposes no development in upper Gabino Canyon. However, B-8 could be consistent if an additional funding source is identified to implement the Adaptive Management Program, including the Habitat Restoration Plan and Grazing Management components.	<b>Consistent.</b> B-9 would be consistent because although it proposes no development in the Gabino sub-basin, it would implement the Adaptive Management Program, which includes Habitat Restoration Plan and Grazing Management Plan components that will address the generation of fine sediments.	<b>Consistent.</b> B-10 would be consistent because although it proposes no development in the Gabino sub-basin, it would implement the Adaptive Management Program, which includes Habitat Restoration Plan and Grazing Management Plan components that will address the generation of fine sediments.	<b>Consistent.</b> B-11 would be consistent because although it proposes no development in the Gabino sub-basin, it would implement the Adaptive Management Program, which includes Habitat Restoration Plan and Grazing Management Plan components that will address the generation of fine sediments.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
34. To the extent feasible, utilize the side canyon currently degraded by past mining activities for natural water quality treatment systems.	<b>Not applicable.</b> B-5 proposes no development in the Gabino sub-basin, therefore water quality treatment facilities would be unnecessary.	<b>Consistent.</b> B-6 would be consistent because the development pattern would allow for use of the degraded side-canyon for natural water quality treatment systems through implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Not applicable.</b> B-8 proposes no development in the Gabino sub-basin, therefore water quality treatment facilities would be unnecessary.	<b>Not applicable.</b> B-9 proposes no development in the Gabino Creek portion of the Gabino and Blind Canyons subunit and therefore water treatment facilities would not be necessary.	<b>Consistent.</b> B-10 would be consistent because it would allow for use of the degraded side-canyon for natural water quality treatment systems through implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because it would allow for use of the degraded side-canyon for natural water quality treatment systems through implementation of the Water Quality Management Plan. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.
35. In the lower reach of the creek, protect significant riparian habitats along the south side of the creek and on proximate side canyon slopes. Limit development and other uses in Blind Canyon to the grazed areas on the mesa and away from the major oak woodlands in Blind Canyon. Direct to and treat stormwater runoff in areas that will not contribute to appreciable increases in water delivery/flow to the oak woodlands in the lower portion of the sub-basin.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the Gabino sub-basin.	<b>Could be consistent.</b> B-6 could be consistent if construction of a collector road across lower Gabino Creek would avoid significant riparian habitat. In addition a paved fire evacuation road along Gabino Canyon to connect with development in upper Gabino Canyon that could affect riparian habitat and streamcourse geomorphology may be required, and thus these potential significant impacts would have to be avoided for consistency (see circulation consistency analysis in Section 11.3). Otherwise B-6 would be consistent because no development is proposed along the south side of the Gabino Creek. Development would be focused on the grazed areas on the mesa and away from the major oak woodlands in Blind Canyon. Runoff from the Blind Canyon subunit would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Gabino sub-basin.	<b>Not consistent.</b> B-9 would not be consistent because it would impact the oak woodlands in Blind Canyon. However, it would avoid riparian habitat in lower Gabino Creek and it would manage runoff from the Blind Canyon subunit through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Could be consistent.</b> B-10 could be consistent if construction of a collector road across lower Gabino Creek would avoid significant riparian habitat. Otherwise B-10 would be consistent because no development is proposed along the south side of the Gabino Creek. Development would be focused on the grazed areas on the mesa and away from the major oak woodlands in Blind Canyon. Runoff from the Blind Canyon subunit would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Could be consistent.</b> B-11 could be consistent if construction of a collector road across lower Gabino Creek would avoid significant riparian habitat. Otherwise B-11 would be consistent because no development is proposed along the south side of the Gabino Creek. Development would be focused on the grazed areas on the mesa and away from the major oak woodlands in Blind Canyon. Runoff from the Blind Canyon subunit would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
36. Protect the integrity of arroyo toad populations in lower Gabino Creek by maintaining hydrologic and sediment delivery processes, including maintaining the flow characteristics of episodic events in the sub-basin. Utilize natural water quality treatment systems to manage and treat runoff from any new land uses in areas adjacent to the lower creek.	<b>Consistent.</b> B-5 would be consistent because it proposes no development within the Gabino sub-basin and existing hydrologic and sediment delivery processes would be maintained.	<b>Could be consistent.</b> B-6 could be consistent if construction of a collector road across lower Gabino Creek would avoid impacts to streamcourse geomorphology. In addition a paved fire evacuation road along Gabino Canyon to connect with development in upper Gabino Canyon that could affect riparian habitat and streamcourse geomorphology may be required, and thus these potential significant impacts would have to be avoided for consistency (see circulation consistency analysis in Section 11.3). Otherwise B-6 would be consistent because no development is proposed along the south side of the Gabino Creek. Development would be focused on the grazed areas on the mesa and away from the major oak woodlands in Blind Canyon. Runoff from the Blind Canyon subunit would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because it proposes no development within the Gabino sub-basin and existing hydrologic and sediment delivery processes would be maintained.	<b>Consistent.</b> B-9 would be consistent because no development is proposed along Gabino Creek. Development in the Gabino and Blind Canyon subunit would be focused on the grazed areas on the mesa and runoff from Blind Canyon would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. B-9 would include reconstruction of the existing Cristianitos Road which would improve flows and sediment transport, with a net benefit to the arroyo toad (see circulation consistency analysis in Section 11.3).	<b>Could be consistent.</b> B-10 could be consistent if a required two-lane collector road with a substantial bridge span over the creek is designed and constructed to avoid arroyo toad breeding habitat and streamcourse morphology. Development in the Gabino and Blind Canyon subunit would be focused on the grazed areas on the mesa and runoff from Blind Canyon would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. B-10 would include reconstruction of the existing Cristianitos Road which would improve flows and sediment transport, with a net benefit to the arroyo toad (see circulation consistency analysis in Section 11.3).	<b>Could be consistent.</b> B-11 could be consistent if a required two-lane collector road with a substantial bridge span over the creek is designed and constructed to avoid arroyo toad breeding habitat and streamcourse morphology. Development in the Gabino and Blind Canyon subunit would be focused on the grazed areas on the mesa and runoff from Blind Canyon would be managed through implementation of water quality management. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9. B-11 would include reconstruction of the existing Cristianitos Road which would improve flows and sediment transport, with a net benefit to the arroyo toad (see circulation consistency analysis in Section 11.3).
<b>La Paz Canyon Sub-basin</b>						
37. Development should be limited in extent in order to protect the generation and transport of coarse sediment to downstream areas. Note: The avoidance of impacts in this sub-basin is extremely important because: (1) La Paz canyon provides a very important source of cobbles that contribute to downstream arroyo toad breeding habitat (in conjunction with coarse sediments generated within the middle reach of Gabino Canyon) both within the planning area and in the stream system outside the planning area, and (2) episodic storm events occurring within	<b>Consistent.</b> B-5 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in this sub-basin.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
the La Paz Canyon watershed will not be altered in any way, thereby contributing important streamcourse processes for arroyo toad and other aquatic species both within the planning area and downstream of the planning area. Therefore, the protection of the La Paz basin physical processes is an important element in overall consistency of the NCCP/HCP with the Watershed and Sub-Basin Planning Principles.						
38. Development should be set back from riparian habitat within the relatively narrow and geologically confined riparian zone.	<b>Consistent.</b> B-5 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-6 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-8 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-9 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-10 would be consistent because it proposes no development in this sub-basin.	<b>Consistent.</b> B-11 would be consistent because it proposes no development in this sub-basin.
<b>Talega Canyon Sub-basin</b>						
39. To the extent feasible, major stormwater flows from development areas should emulate current runoff patterns. Runoff during the dry season and high frequency/low magnitude storms (generally 1-2 year storm events) should be routed through natural water quality treatment systems and, where feasible, encouraged to flow generally away from arroyo toad habitat in Talega Canyon and toward Blind Canyon.	<b>Consistent.</b> B-5 would be consistent because it does not propose development within the Talega sub-basin, therefore existing runoff patterns would continue.	<b>Consistent.</b> B-6 would be consistent because the proposed "development bubble" is a smaller subset of the B-4 or B-9 "development bubbles" for the same area, and the B-4/B-9 Water Quality Management Plan would be equally applicable to those portions of B-6 that overlap with B-4/B-9. The hydrology section of the Water Quality Management Plan indicates that stormwater flows would be directed to existing drainages in order to emulate current runoff patterns consistent with the first part of the recommendation. The Water Quality Management Plan also would provide for routing both dry season flows and 1-2 year storm flows in excess of existing conditions toward Blind Canyon consistent with the second part of the recommendation.	<b>Consistent.</b> B-8 would be consistent because it does not propose development within the Talega sub-basin, therefore existing runoff patterns would continue.	<b>Consistent.</b> B-9 would be consistent because under B-9, and like B-4 which has a similar development pattern in the sub-basin, the hydrology section of the Water Quality Management Plan indicates that runoff would be directed to existing drainages in order to emulate current runoff patterns consistent with the first part of the recommendation. The Water Quality Management Plan also provides for routing both dry season flows and 1-2 year storm flows in excess of existing conditions toward Blind Canyon consistent with the second part of the recommendation.	<b>Consistent.</b> B-10 would be consistent because under B-10, and like B-4 which has a similar development pattern in the sub-basin, the hydrology section of the Water Quality Management Plan indicates that runoff would be directed to existing drainages in order to emulate current runoff patterns consistent with the first part of the recommendation. The Water Quality Management Plan also provides for routing both dry season flows and 1-2 year storm flows in excess of existing conditions toward Blind Canyon consistent with the second part of the recommendation.	<b>Consistent.</b> B-11 would be consistent because under B-11, and like B-4 which has a similar development pattern in the sub-basin, the hydrology section of the Water Quality Management Plan indicates that runoff would be directed to existing drainages in order to emulate current runoff patterns consistent with the first part of the recommendation. The Water Quality Management Plan also provides for routing both dry season flows and 1-2 year storm flows in excess of existing conditions toward Blind Canyon consistent with the second part of the recommendation.

**TABLE M-5 (Continued)  
SAMP/MSAA SUB-BASIN PLANNING PRINCIPLES CONSISTENCY FINDINGS**

Planning Principle	Alternatives					
	B-5	B-6	B-8	B-9	B-10	B-11
40. Development should focus on the ridge tops to avoid the canyon bottoms and preserve the steeper slopes. To the extent practical, development should generally be in the area of the existing Northrop Grumman facilities and adjacent ridges to the east/northeast.	<b>Consistent.</b> B-5 would be consistent because it does not propose development within the Talega sub-basin, therefore canyon bottoms, steeper side slopes and ridge tops would be protected.	<b>Not consistent.</b> B-6 would not be consistent because although it proposes development for the ridge tops in order to avoid canyon bottoms and to preserve the steeper slopes consistent with the first recommendation, some development areas would extend to the south of Northrop Grumman, inconsistent with the second part of the recommendation. The proposed development south of Northrop Grumman is based on practicability considerations that will need to be addressed in the EIR/EIS for the NCCP/HCP.	<b>Consistent.</b> B-8 would be consistent because it does not propose development within the Talega sub-basin, therefore canyon bottoms, steeper side slopes and ridge tops would be protected.	<b>Not consistent.</b> B-9 would not be consistent because although it proposes development on the ridge tops within the Talega sub-basin to avoid the canyon bottom consistent with the recommendation, it also proposes development within the Blind sub-basin on both ridge tops and the canyon bottom, inconsistent with the recommendation. Development would largely be located on the existing Northrop Grumman uses and the area to the east/northeast, although a portion of the development area would extend south of the existing Northrop Grumman facilities. Since the second part of the recommendation is qualified by the phrase "to the extent practical," development south of Northrop Grumman will need to be addressed in the EIR/EIS for the NCCP/HCP in terms of practicability considerations.	<b>Not consistent.</b> B-10 would not be consistent because although it proposes development on the ridge tops within the Talega sub-basin to avoid the canyon bottom consistent with the recommendation, it also proposes development within the Blind sub-basin on both ridge tops and the canyon bottom, inconsistent with the recommendation. Development would largely be located on the existing Northrop Grumman uses and the area to the east/northeast, although a portion of the development area would extend south of the existing Northrop Grumman facilities. Since the second part of the recommendation is qualified by the phrase "to the extent practical," development south of Northrop Grumman will need to be addressed in the EIR/EIS for the NCCP/HCP in terms of practicability considerations.	<b>Not consistent.</b> B-11 would not be consistent because although it proposes development on the ridge tops within the Talega sub-basin to avoid the canyon bottom consistent with the recommendation, it also proposes development within the Blind sub-basin on both ridge tops and the canyon bottom, inconsistent with the recommendation. Development would largely be located on the existing Northrop Grumman uses and the area to the east/northeast, although a portion of the development area would extend south of the existing Northrop Grumman facilities. Since the second part of the recommendation is qualified by the phrase "to the extent practical," development south of Northrop Grumman will need to be addressed in the EIR/EIS for the NCCP/HCP in terms of practicability considerations.
41. The timing of peak flows should emulate the timing of flows under existing conditions.	<b>Consistent.</b> B-5 would be consistent because existing peak flows would remain as it proposes no development within the Talega sub-basin.	<b>Consistent.</b> B-6 would be consistent because the Water Quality Management Plan indicates that the timing of peak flows will emulate existing conditions consistent with the recommendation. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-8 would be consistent because existing peak flows would remain as it proposes no development within the Talega sub-basin.	<b>Consistent.</b> B-9 would be consistent because the Water Quality Management Plan indicates that the timing of peak flows will emulate existing conditions consistent with the recommendation. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-10 would be consistent because the Water Quality Management Plan indicates that the timing of peak flows will emulate existing conditions consistent with the recommendation. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.	<b>Consistent.</b> B-11 would be consistent because the Water Quality Management Plan indicates that the timing of peak flows will emulate existing conditions consistent with the recommendation. Management of water quality would occur in compliance with the County of Orange MS4 permit issued by the San Diego Regional Water Quality Control Board through implementation of a Water Quality Management Plan. Water quality would be adaptively managed by the development entities as described in Chapter 9.



**TABLE M-6  
TABULAR SUMMARY OF CONSISTENCY FINDINGS FOR NCCP/HCP PLANNING GUIDELINES**

Sub-Basin	Consistency	B-5	B-6	B-8	B-9	B-10	B-11						
<b>San Juan Creek Watershed</b>													
Chiquita	C/NS	5	23%	18	86%	14	67%	20	91%	18	82%	18	82%
	CC/PS	0	0%	0	0%	7	33%	1	5%	2	9%	0	0%
	NC/S	17	77%	3	14%	0	0%	1	5%	2	9%	4	18%
Gobernadora	C/NS	8	40%	9	45%	12	60%	17	85%	17	85%	17	85%
	CC/PS	1	5%	1	5%	7	35%	1	5%	1	5%	1	5%
	NC/S	11	55%	10	50%	1	5%	2	10%	2	10%	2	10%
Central San Juan & Trampas	C/NS	15	65%	15	65%	14	61%	21	91%	20	87%	20	87%
	CC/PS	0	0%	0	0%	7	30%	0	0%	0	0%	0	0%
	NC/S	8	35%	8	35%	2	9%	2	9%	3	13%	3	13%
Verdugo	C/NS	1	20%	3	60%	5	100%	4	80%	4	80%	4	80%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	4	80%	2	40%	0	0%	1	20%	1	20%	1	20%
Total – San Juan Creek	C/NS	30	43%	45	65%	45	65%	62	89%	59	84%	59	84%
	CC/PS	1	1%	1	1%	21	30%	2	3%	3	4%	1	1%
	NC/S	39	56%	23	33%	3	4%	6	9%	8	12%	10	15%
<b>San Mateo Creek Watershed</b>													
Cristianitos	C/NS	10	100%	18	95%	13	68%	20	100%	15	80%	16	80%
	CC/PS	0	0%	0	0%	6	32%	0	0%	1	5%	1	5%
	NC/S	0	0%	1	5%	0	0%	0	0%	3	15%	3	15%
Gabino and Blind Canyons	C/NS	32	100%	21	66%	21	66%	27	84%	27	84%	24	75%
	CC/PS	0	0%	0	0%	11	34%	1	3%	1	3%	1	3%
	NC/S	0	0%	11	34%	0	0%	4	13%	4	13%	7	22%
La Paz	C/NS	6	100%	6	100%	6	100%	6	100%	6	100%	6	100%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Talega	C/NS	8	100%	8	100%	8	100%	7	88%	8	100%	8	100%
	CC/PS	0	0%	0	0%	0	0%	1	13%	0	0%	0	0%
	NC/S	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Other	C/NS	9	100%	7	78%	8	89%	8	89%	9	100%	9	100%
	CC/PS	0	0%	0	0%	1	11%	0	0%	0	0%	0	0%
	NC/S	0	0%	2	22%	0	0%	1	11%	0	0%	0	0%
Total – San Mateo Creek	C/NS	74	100%	60	81%	56	76%	67	91%	65	88%	63	84%
	CC/PS	0	0%	0	0%	18	24%	2	3%	2	3%	2	3%
	NC/S	0	0%	4	19%	0	0%	5	7%	7	9%	10	13%
Planning Area-wide	C/NS	6	100%	6	100%	6	100%	6	100%	6	100%	6	100%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
TOTAL	C/NS	110	73%	111	74%	107	72%	135	90%	130	87%	128	85%
	CC/PS	1	1%	1	1%	39	26%	4	3%	4	3%	3	2%
	NC/S	39	26%	37	25%	3	2%	11	7%	15	10%	19	13%
<b>Legend:</b> C/NS = Consistent/Not Significant; CC/PS = Could be Consistent/Potentially Significant; NC/S = Not Consistent/Significant. <b>Note:</b> Not all totals among alternatives are equal because instances where the Guideline was not applicable to the sub-basin are not included in the total.													
Source: Dudek 2004													

**TABLE M-7  
TABULAR SUMMARY OF CONSISTENCY FINDINGS FOR WATERSHED PLANNING PRINCIPLES**

Sub-Basin	Consistency	B-5	B-6	B-8	B-9	B-10	B-11						
<b>San Juan Creek Watershed</b>													
Chiquita	C/NS	2	25%	8	100%	7	88%	5	63%	7	87%	2	25%
	CC/PS	0	0%	0	0%	1	12%	1	13%	0	0%	0	0
	NC/S	6	75%	0	0%	0	0%	2	25%	1	13%	6	75%
Gobernadora	C/NS	1	12%	2	25%	4	50%	7	88%	7	87%	7	87%
	CC/PS	0	0%	0	0%	3	38%	0	0%	0	0%	0	0%
	NC/S	7	88%	6	75%	1	12%	1	12%	1	13%	1	13%
Central San Juan & Trampas	C/NS	2	50%	2	50%	4	100%	4	100%	3	75%	3	75%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	2	50%	2	50%	0	0%	0	0%	1	25%	1	25%
Verdugo	C/NS	0	0%	3	100%	3	100%	3	100%	3	100%	3	100%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	3	100%	0	0%	0	0%	0	0%	0	0%	0	0%
Total – San Juan Creek	C/NS	5	22%	15	65%	18	78%	19	83%	20	87%	15	65%
	CC/PS	0	0%	0	0%	4	17%	1	4%	0	0%	0	0%
	NC/S	18	78%	8	35%	1	4%	3	12%	3	13%	8	35%
<b>San Mateo Creek Watershed</b>													
Cristianitos	C/NS	4	80%	5	100%	2	40%	5	100%	4	80%	5	100%
	CC/PS	0	0%	0	0%	2	40%	0	0%	0	0%	0	0%
	NC/S	1	20%	0	0%	1	20%	0	0%	1	20%	0	0%
Gabino and Blind Canyons	C/NS	7	100%	2	29%	4	57%	5	71%	5	63%	5	63%
	CC/PS	0	0%	2	29%	2	43%	1	14%	3	37%	3	37%
	NC/S	0	0%	3	43%	0	0%	1	14%	0	0%	0	0%
La Paz	C/NS	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Talega	C/NS	3	100%	2	67%	3	100%	2	67%	2	67%	2	67%
	CC/PS	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	NC/S	0	0%	1	33%	0	0%	1	33%	1	33%	1	33%
Total – San Mateo Creek	C/NS	16	94%	11	65%	11	65%	14	82%	13	72%	14	78%
	CC/PS	0	0%	2	12%	5	29%	1	6%	3	17%	3	17%
	NC/S	1	6%	4	24%	1	6%	2	12%	2	11%	1	5%
TOTAL	C/NS	21	53%	26	65%	29	73%	33	83%	33	80%	29	71%
	CC/PS	0	0%	2	5%	9	23%	2	5%	3	7%	3	7%
	NC/S	19	48%	12	30%	2	5%	5	12%	5	12%	9	22%
<p><b>Legend:</b> C/NS = Consistent/Not Significant; CC/PS = Could be Consistent/Potentially Significant; NC/Significant = Not Consistent</p> <p><b>Note:</b> Not all totals among alternatives are equal because instances where the Guideline was not applicable to the sub-basin are not included in the total.</p> <p><i>Source: Dudek 2004</i></p>													

**TABLE M-8  
PLANNING SPECIES CONSISTENCY ANALYSIS SUMMARY  
FOR THE NCCP/HCP PLANNING GUIDELINES**

	B-5			B-6			B-8			B-9			B-10			B-11		
	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC
Arroyo Toad	19	0	2	20	0	1	17	4	0	21	0	0	21	0	0	21	0	0
	90%	0%	10%	95%	0%	5%	81%	19%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
California Gnatcatcher	11	0	11	14	0	7	18	2	1	20	1	2	20	0	2	19	0	3
	50%	0%	50%	67%	0%	33%	86%	9%	5%	91%	0%	9%	91%	0%	9%	86%	0%	14%
Least Bell's Vireo	12	0	6	13	0	4	9	8	0	18	0	0	18	0	0	17	0	1
	67%	0%	33%	76%	0%	24%	53%	47%	0%	100%	0%	0%	100%	0%	0%	94%	0%	6%
SW Willow Flycatcher	1	0	4	1	0	4	3	2	0	5	0	0	5	0	0	5	0	0
	20%	0%	80%	20%	0%	80%	60%	40%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Riverside Fairy Shrimp	0	0	2	0	0	2	2	0	0	2	0	0	1	0	1	1	0	1
	0%	0%	100%	0%	0%	100%	100%	0%	0%	100%	0%	0%	50%	0%	50%	50%	0%	50%
San Diego Fairy Shrimp	0	0	2	0	0	2	2	0	0	2	0	0	1	0	1	1	0	1
	0%	0%	100%	0%	0%	100%	100%	0%	0%	100%	0%	0%	50%	0%	50%	50%	0%	50%
Thread-leaved Brodiaea	10	0	5	13	0	2	6	9	0	13	1	1	12	1	2	11	1	3
	67%	0%	33%	87%	0%	13%	40%	60%	0%	87%	7%	7%	80%	7%	13%	73%	7%	20%
Cactus Wren	14	0	9	17	0	6	18	4	1	20	0	3	20	0	3	19	0	4
	57%	4%	39%	70%	4%	26%	74%	22%	4%	88%	0%	13%	87%	0%	13%	83%	0%	17%
Cooper's Hawk	17	0	9	19	0	7	17	8	1	23	1	2	22	1	3	21	1	4
	65%	0%	35%	73%	0%	27%	65%	31%	4%	88%	4%	8%	85%	4%	12%	81%	4%	15%
Golden Eagle	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Grasshopper Sparrow	18	1	7	16	1	8	13	10	2	19	2	5	19	1	6	19	1	6
	69%	4%	27%	64%	4%	32%	52%	40%	8%	73%	8%	19%	73%	4%	23%	73%	4%	23%
Merlin	12	0	4	12	0	4	8	8	0	14	0	2	12	0	4	13	0	3
	75%	0%	25%	75%	0%	25%	50%	50%	0%	88%	0%	13%	75%	0%	25%	81%	0%	19%
Tricolored Blackbird	15	0	3	11	0	7	11	7	0	15	0	3	14	0	4	15	0	3
	83%	0%	17%	61%	0%	39%	61%	39%	0%	83%	0%	17%	78%	0%	22%	83%	0%	17%
White-tailed Kite	25	0	11	24	0	12	20	14	2	29	1	6	28	1	7	28	1	7
	69%	0%	31%	67%	0%	33%	56%	39%	6%	81%	3%	17%	78%	3%	19%	78%	3%	19%
Yellow Warbler	12	0	6	13	0	4	9	8	0	18	0	0	18	0	0	18	0	0
	67%	0%	33%	76%	0%	24%	53%	47%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Yellow-breasted Chat	14	0	7	16	0	4	12	8	0	21	0	0	21	0	0	20	0	1
	67%	0%	33%	80%	0%	20%	60%	40%	0%	100%	0%	0%	100%	0%	0%	95%	0%	5%

**TABLE M-8 (Continued)  
PLANNING SPECIES CONSISTENCY ANALYSIS SUMMARY  
FOR THE NCCP/HCP PLANNING GUIDELINES**

	B-5			B-6			B-8			B-9			B-10			B-11		
	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC
Western Spadefoot Toad	20	0	3	21	0	2	17	6	0	23	0	0	21	0	2	22	0	1
	87%	0%	13%	91%	0%	9%	74%	26%	0%	100%	0%	0%	91%	0%	9%	96%	0%	1%
Orange-throated Whiptail	18	1	7	20	1	5	21	5	0	23	2	1	24	1	1	23	1	2
	69%	4%	27%	77%	4%	19%	81%	19%	0%	88%	8%	4%	81%	19%	0%	88%	4%	8%
San Diego Horned Lizard	20	1	7	22	1	5	23	5	0	25	2	1	26	1	1	26	1	1
	71%	4%	25%	79%	4%	18%	82%	18%	0%	80%	7%	4%	93%	4%	4%	93%	4%	4%
Southwestern Pond Turtle	10	0	2	9	0	3	7	5	0	12	0	0	11	0	1	12	0	0
	83%	0%	17%	75%	0%	25%	58%	42%	0%	100%	0%	0%	92%	0%	8%	100%	0%	0%
Mountain Lion	12	1	7	12	1	7	17	3	0	18	2	0	19	1	0	19	1	0
	60%	5%	35%	60%	5%	35%	85%	15%	0%	90%	10%	0%	95%	5%	0%	95%	5%	0%
Mule Deer	13	1	8	13	1	8	18	3	1	19	2	1	20	1	1	20	1	1
	59%	5%	36%	59%	5%	36%	82%	14%	5%	86%	9%	5%	91%	5%	5%	91%	5%	5%
Chaparral Beargrass	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Coulter's Saltbush	3	0	2	4	0	1	4	1	0	5	0	0	4	1	0	5	0	0
	60%	0%	40%	80%	0%	20%	80%	20%	0%	100%	0%	0%	80%	20%	0%	100%	0%	0%
Many-stemmed Dudleya	20	0	6	23	0	3	9	17	0	26	0	0	25	0	1	25	0	1
	77%	0%	23%	88%	0%	12%	35%	65%	0%	100%	0%	0%	96%	0%	4%	96%	0%	4%
Mud Nama	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1
	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Salt Spring Checkerbloom	0	0	3	3	0	0	2	1	0	3	0	0	3	0	0	2	0	1
	0%	0%	100%	100%	0%	0%	67%	33%	0%	100%	0%	0%	100%	0%	0%	67%	0%	33%
Southern Tarplant	2	0	4	5	0	1	3	3	0	6	0	0	5	1	0	6	0	0
	33%	0%	67%	83%	0%	17%	50%	50%	0%	100%	0%	0%	83%	17%	0%	100%	0%	0%
<b>Average Consistency<sup>1</sup></b>	<b>61%</b>	<b>1%</b>	<b>38%</b>	<b>70%</b>	<b>1%</b>	<b>28%</b>	<b>69%</b>	<b>29%</b>	<b>1%</b>	<b>93%</b>	<b>2%</b>	<b>4%</b>	<b>87%</b>	<b>3%</b>	<b>10%</b>	<b>87%</b>	<b>1.5%</b>	<b>11.5%</b>

<sup>1</sup> The average excludes mud nama because all alternatives are 0 percent consistent for this species.

Source: Dudek 2004

**TABLE M-9  
PLANNING SPECIES CONSISTENCY ANALYSIS SUMMARY  
FOR THE WATERSHED PLANNING PRINCIPLES**

	B-5			B-6			B-8			B-9			B-10			B-11		
	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC	C	CC	NC
Arroyo Toad	11	0	3	11	1	2	9	4	1	13	1	0	11	2	1	12	2	0
	79%	0%	21%	79%	7%	14%	64%	29%	7%	93%	7%	0%	79%	14%	7%	86%	14%	0%
Least Bell's Vireo	7	0	8	8	2	5	7	6	2	14	0	1	11	2	2	11	2	2
	47%	0%	53%	53%	13%	33%	47%	40%	13%	93%	0%	7%	73%	13%	13%	73%	13%	13%
SW Willow Flycatcher	0	0	6	1	0	5	1	4	1	5	0	1	5	0	1	5	0	1
	0%	0%	100%	17%	0%	83%	17%	67%	17%	83%	0%	17%	83%	0%	17%	83%	0%	17%
Cooper's Hawk	8	0	8	9	2	5	9	5	2	14	0	2	12	2	2	12	2	2
	50%	0%	50%	56%	13%	31%	56%	31%	13%	88%	0%	12%	75%	13%	13%	75%	13%	13%
Tricolored Blackbird	1	0	7	3	0	5	4	3	1	7	1	1	8	0	1	5	0	4
	13%	0%	88%	38%	0%	63%	50%	38%	13%	78%	11%	11%	89%	0%	11%	56%	0%	44%
White-tailed Kite	8	0	8	9	2	5	9	5	2	14	0	2	12	2	2	12	2	2
	50%	0%	50%	56%	13%	31%	56%	31%	13%	88%	0%	13%	75%	13%	13%	75%	13%	13%
Yellow Warbler	7	0	8	8	2	5	8	5	2	13	0	2	11	2	2	11	2	2
	47%	0%	53%	53%	13%	33%	53%	33%	13%	87%	0%	13%	73%	13%	13%	73%	13%	13%
Yellow-breasted Chat	7	0	8	8	2	5	5	5	2	13	0	2	11	2	2	11	2	2
	47%	0%	53%	53%	13%	33%	53%	33%	13%	87%	0%	13%	73%	13%	13%	73%	13%	13%
Western Spadefoot Toad	12	0	3	12	1	2	9	4	1	14	1	0	12	2	1	13	2	0
	80%	0%	20%	80%	7%	13%	67%	27%	7%	93%	7%	0%	80%	13%	7%	87%	13%	0%
Southwestern Pond Turtle	6	0	3	7	0	1	5	3	1	8	1	0	7	1	1	8	1	0
	67%	0%	33%	88%	0%	13%	56%	33%	11%	89%	11%	0%	78%	11%	11%	89%	11%	0%
<b>Average Consistency</b>	<b>48%</b>	<b>0%</b>	<b>52%</b>	<b>57%</b>	<b>8%</b>	<b>35%</b>	<b>52%</b>	<b>36%</b>	<b>12%</b>	<b>88%</b>	<b>4%</b>	<b>8%</b>	<b>78%</b>	<b>10%</b>	<b>12%</b>	<b>77%</b>	<b>10%</b>	<b>13%</b>
<i>Source: Dudek 2004</i>																		

**TABLE M-10  
CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVES**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
<p>arroyo toad <i>Bufo californicus</i></p>	<p>100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved. No development would occur on the San Mateo Creek Watershed, thus all potential upland foraging/estivation habitat would be conserved. In the San Juan Creek Watershed, all breeding habitat and the adjacent floodplain terrace would be conserved. However, development is proposed south of the creek adjacent to the <i>major population/key location</i> without substantial setbacks from the creek. In addition, development in Verdugo Canyon, however, would severely impact a substantial source of coarse sediments essential to maintaining suitable breeding habitat. Development along the south side of San Juan Creek in East Ortega and the Trampas Canyon areas would require maintaining Ortega Highway in its current location, limit use of this area as estivation habitat, and continue existing levels of roadkill.</p>	<p>100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved. In the San Juan Creek Watershed, all breeding habitat and the adjacent floodplain terrace would be conserved. However, development is proposed south of the creek adjacent to the <i>major population/key location</i> without substantial setbacks from the creek. Development along the south side of San Juan Creek in East Ortega and the Trampas Canyon areas would require maintaining Ortega Highway in its current location, limit use of this area as estivation habitat, and continue existing levels of roadkill.</p>	<p>100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. No development would occur in the San Mateo Creek Watershed. Along San Juan Creek, development would be offset an average of about 300 feet north of the floodplain.</p>	<p>100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. In the San Mateo Creek Watershed the minimum elevation differential between development and breeding locations would be 80 ft. Along San Juan Creek, development would be offset by at least 300 feet south of the floodplain and an average of about 300 feet north of the floodplain.</p>	<p>100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. In the San Mateo Creek Watershed the minimum elevation differential between development and breeding locations would be 80 ft. Along San Juan Creek, development would be offset by at least 300 feet south of the floodplain and an average of about 300 feet north of the floodplain.</p>	<p>100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. In the San Mateo Creek Watershed the minimum elevation differential between development and breeding locations would be 80 ft. Along San Juan Creek, development would be offset by at least 300 feet south of the floodplain and an average of about 300 feet north of the floodplain.</p>
<p>coastal California gnatcatcher <i>Poliophtila californica californica</i></p>	<p>559 locations (78%) and 16,713 acres (85%) of suitable habitat would be conserved, including 317 of 404 locations (78%) and 2,552 acres of 3,126 acres of coastal sage scrub (82%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-5 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i>; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i>; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i>; 6 of 7 locations (86%) of the Trampas Canyon <i>important</i></p>	<p>616 locations (86%) and 16,957 acres (85%) of suitable habitat would be conserved, including 381 of 404 locations (94%) and 2,999 acres of 3,126 acres of coastal sage scrub (96%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-6 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i>; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i>; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i>; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i>; 34 of 35</p>	<p>627 locations (87%) and 17,811 acres (90%) of suitable habitat would be conserved, including 384 of 404 locations (95%) and 3,020 acres of 3,126 acres of coastal sage scrub (97%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-8 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i>; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i>; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i>; 6 of 7 locations (86%) of the Trampas</p>	<p>602 locations (84%) and 16,663 acres (84%) of suitable habitat (coastal sage scrub) would be conserved, including 366 of 404 locations (90%) and 2,826 acres of 3,126 acres of coastal sage scrub (90%) within the <i>major population</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> the proposed Habitat Reserve would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i>; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i>; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente</p>	<p>593 locations (82%) and 16,610 acres (84%) of suitable habitat would be conserved, including 354 of 404 locations (88%) and 2,760 acres of 3,126 acres of coastal sage scrub (88%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-4 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i>; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i>; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i>; 6 of 7 locations (86%) of</p>	<p>572 locations (79%) and 16,203 acres (82%) of suitable habitat would be conserved, including 338 of 404 locations (84%) and 2,716 acres of 3,126 acres of coastal sage scrub (87%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-4 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i>; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i>; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i>; 6 of 7 locations (86%) of</p>

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
	<p>population/key location; 34 of 35 locations (97%) of the West San Juan Capistrano important population/ key location; 28 of 41 locations (68%) of the Arroyo Trabuco important population and 13 of 13 locations (100%) in the Upper Cristianitos Canyon important population. A total of 501 of 644 locations (78%) within major and important populations would be in B-5. (The two important populations in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)</p>	<p>locations (97%) of the West San Juan Capistrano important population/ key location; 28 of 41 locations (68%) of the Arroyo Trabuco important population and 13 of 13 locations (100%) in the Upper Cristianitos Canyon important population. A total of 565 of 644 locations (88%) within major and important populations would be in B-6. (The two important populations in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)</p>	<p>Canyon important population/key location; 34 of 35 locations (97%) of the West San Juan Capistrano important population/ key location; 28 of 41 locations (68%) of the Arroyo Trabuco important population and 13 of 13 locations (100%) in the Upper Cristianitos Canyon important population. A total of 568 of 644 locations (88%) within major and important populations would be in B-8. (The two important populations in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)</p>	<p>important population/key location; 6 of 7 locations (86%) of the Trampas Canyon important population/key location; all 13 locations of Upper Cristianitos important population/key location, 34 of 35 locations (97%) of the West San Juan Capistrano important population/key location; and 28 of 41 locations (68%) of the Arroyo Trabuco important population. In total, 550 of 644 locations (85%) within major and important populations would be in the proposed Habitat Reserve (the two important populations in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program).</p>	<p>the Trampas Canyon important population/key location; 34 of 35 locations (97%) of the West San Juan Capistrano important population/ key location; 28 of 41 locations (68%) of the Arroyo Trabuco important population, and all 13 locations in the Upper Cristianitos important population. Approximately, 538 of 644 locations (83%) within major and important populations would be in B-10. (The two important populations in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)</p>	<p>the Trampas Canyon important population/key location; 34 of 35 locations (97%) of the West San Juan Capistrano important population/ key location; and 28 of 41 locations (68%) of the Arroyo Trabuco important population, and all 13 locations in the Upper Cristianitos important population. Approximately, 515 of 644 locations (80%) within major and important populations would be in B-11. (The two important populations in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)</p>
<p>least Bell's vireo  <i>Vireo bellii pusillus</i></p>	<p>46 of 54 breeding locations (86%) and approximately 806 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.</p>	<p>46 of 54 breeding locations (86%) and approximately 800 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.</p>	<p>47 of 54 breeding locations (87%) and approximately 821 acres (74%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved.</p>	<p>47 of 54 breeding locations (87%) and approximately 814 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved.</p>	<p>47 of 54 breeding locations (87%) and approximately 808 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved.</p>	<p>47 of 54 breeding locations (87%) and approximately 805 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved.</p>
<p>southwestern willow flycatcher  <i>Empidonax traillii extimus</i></p>	<p>7 of 7 breeding locations and approximately 806 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified important population in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.</p>	<p>7 of 7 breeding locations and approximately 800 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified important population in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.</p>	<p>7 of 7 breeding locations and approximately 821 acres (74%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified important population in GERA would be conserved.</p>	<p>7 of 7 breeding locations and approximately 814 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified important population in GERA would be conserved.</p>	<p>7 of 7 breeding locations and approximately 808 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified important population in GERA would be conserved.</p>	<p>7 of 7 breeding locations and approximately 805 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified important population in GERA would be conserved.</p>

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
Riverside fairy shimp <i>Streptocephalus woottoni</i>	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	The vernal pool complexes supporting Riverside fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	The vernal pool complexes supporting Riverside fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	2 of 3 vernal pool complexes supporting San Diego fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.	2 of 3 vernal pool complexes supporting San Diego fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.	The vernal pool complexes supporting San Diego fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved through project design to avoid the easternmost pools on Radio Tower Road.	The vernal pool complexes supporting San Diego fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved through project design to avoid the easternmost pools on Radio Tower Road.	Two of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	Two 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.
thread-leaved brodiaea <i>Brodiaea filifolia</i>	7,283 flowering stalks (76%) and 27 locations (79%) would be conserved. All populations in the San Mateo Creek Watershed would be conserved, including the <i>major population/key location</i> in Lower Cristianitos/Lower Gabino canyons and the <i>important populations</i> in Cristianitos Canyon, Middle Gabino and Talega sub-basin. The Trampas Canyon and Arroyo Trabuco <i>important populations</i> also would be conserved. The <i>major population/key location</i> on Chiquadora Ridge in the San Juan Creek Watershed would be impacted by the Lower Chiquita development.	3,145 flowering stalks (33%) and 23 locations (68%) would be conserved. The Chiquadora Ridge <i>major population/key location</i> supporting more than 2,000 individuals would be conserved. 10 of 13 locations (77%) numbering 285 flowering stalks (71%) in the Cristianitos Canyon <i>important population</i> , 288 flowering stalks (100%) in the Middle Gabino <i>important population</i> , and all 4 locations totaling 288 flowering stalks in the Talega <i>important population</i> would be conserved. The Trampas Canyon and Arroyo Trabuco <i>important populations</i> also would be conserved. The LowerCristianitos/Lower Gabino <i>major location/key location</i> totaling 6,100 flowering stalks would be wholly impacted.	9,618 flowering stalks (100%) and 34 locations (100%) would be conserved. The two <i>major populations/ key locations</i> located on Chiquadora Ridge and in southern Cristianitos/Gabino canyons would be conserved. <i>Important populations</i> in Cristianitos Canyon, Middle Gabino, Trampas Canyon, Talega sub-basin, and Arroyo Trabuco also would be conserved.	9,300 flowering stalks (97%) and 27 of 34 locations (79%) would be conserved. The <i>major population/ key location</i> located in southern Cristianitos/Gabino canyons would be 100% conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. All 13 locations totaling about 400 flowering stalks in the <i>important population</i> Cristianitos would be conserved as would the Arroyo Trabuco <i>important population</i> . In the Talega <i>important population</i> 4 locations totaling about 288 flowering stalks would be in the Habitat Reserve or non-reserve open space.	9,343 (97%) flowering stalks and 28 of 34 locations (82%) would be conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. 11 locations totaling about 210 flowering stalks in the <i>important population</i> Cristianitos would be conserved, as would 100% of Middle Gabino, Trampas Canyon, East Talega and Arroyo Trabuco <i>important populations</i> .	3,110 (32%) flowering stalks and 19 of 34 locations (56%) would be conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. 6,100 flowering stalks (100%) in the Lower Cristianitos/Lower Gabino <i>major population/key location</i> would be impacted, as would 5 locations totaling 315 flowering stalks in the Cristianitos <i>important population</i> . <i>Important populations</i> in Trampas Canyon, Middle Gabino, East Talega and Arroyo Trabuco would be 100% conserved.



**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
cactus wren <i>Campylorhynchus brunneicapillus couesi</i>	1,097 locations (82%) and 16,702 acres (85%) of suitable habitat would be conserved. All wren locations and suitable habitat in the San Mateo Creek Watershed would be conserved. Habitat connectivity generally would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O’Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed. Some constraints may occur to east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park because of development in Sulphur Canyon and the upper portion of Gobernadora and because of the narrowing of the linkage between the Trampas Canyon and East Ortega development areas.	1,151 locations (86%) and 16,957 acres (85%) of suitable habitat would be conserved. Habitat connectivity generally would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O’Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed. Some constraints may occur to east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park because of development in Sulphur Canyon and the upper portion of Gobernadora and because of the narrowing of the linkage between the Trampas Canyon and East Ortega development areas.	1,231 locations (92%) and 17,811 acres (90%) of suitable habitat would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O’Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	1,128 locations (85%) and 16,633 acres (84%) of suitable habitat (coastal sage scrub) would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O’Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	1,110 locations (83%) and 16,610 acres (84%) of suitable habitat (coastal sage scrub) would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O’Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	1,073 locations (80%) and 16,203 acres (82%) of suitable habitat (coastal sage scrub) would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O’Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.
Cooper’s hawk <i>Accipiter cooperii</i>	36 historic nest locations (82%) and 5,819 acres (81%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, Verdugo, and Arroyo Trabuco.	38 historic nest locations (86%) and 5,852 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, Verdugo, and Arroyo Trabuco.	40 historic nest locations (91%) and 6,142 acres (87%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, Verdugo, and Arroyo Trabuco.	36 historic nest locations (82%) and 5,853 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, Verdugo, and Arroyo Trabuco.	36 historic nest locations (82%) and 5,861 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, Verdugo, and Arroyo Trabuco.	36 historic nest locations (82%) and 5,826 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, Verdugo, and Arroyo Trabuco.
golden eagle <i>Aquila chrysaetos</i>	Approximately 12,258 acres (65%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon and in grasslands in the San Mateo Creek Watershed.	Approximately 12,581 acres (67%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Chiquita Canyon, Blind Canyon and remaining grasslands in Upper Cristianitos and Upper Gabino canyons.	Approximately 13,824 acres (74%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Chiquita Canyon, and throughout the San Mateo Creek Watershed.	Approximately 12,579 acres (67%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Middle and Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.	Approximately 12,134 acres (65%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.	Approximately 11,803 acres (63%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
grasshopper sparrow <i>Ammodramus savannarum</i>	416 locations (57%) and 10,761 acres (72%) of grassland would be conserved. Approximately 31% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 98% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	581 locations (80%) and 9,976 acres (67%) of grassland would be conserved. Approximately 84% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 74% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	639 locations (88%) and 10,987 acres (73%) of grassland would be conserved. Approximately 90% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 99% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	563 locations (77%) and 10,267 acres (69%) of grassland habitat would be conserved. Approximately 76% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 82% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	480 locations (66%) and 10,031 acres (67%) of grassland would be conserved. Approximately 58% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 71% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	441 locations (60%) and 9,796 acres (65%) of grassland would be conserved. Approximately 51% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 62% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.
merlin <i>Falco columbarius</i>	Approximately 12,258 acres (65%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.	Approximately 12,581 acres (67%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat throughout Chiquita Canyon would be conserved, as would potential foraging habitat in the Radio Tower Road mesa area. Substantial portions of potential foraging habitat in Cristianitos and Upper Gabino Canyons would be developed.	Approximately 13,824 acres (74%) of grassland and agricultural foraging habitat would be conserved. All identified and potential key foraging habitat throughout the planning area would be conserved, including Chiquita Canyon, Radio Tower Road, Cristianitos Canyon and Upper Gabino Canyon.	Approximately 12,580 acres (67%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Middle and Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon, Cristianitos Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower Chiquita would be developed.	Approximately 12,134 acres (65%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.	Approximately 11,803 acres (63%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.
tricolored blackbird <i>Agelaius tricolor</i>	Potential breeding/foraging areas would be conserved in San Juan Creek, south of a ranch residence south of Ortega Highway, and the “Riverside Cement” colony in Lower Cristianitos and Lower Gabino canyons. Historic nesting areas in the Narrows in Chiquita Canyon and at the mouth of Verdugo Canyon would be largely developed. Development in the grassland habitat in the valley bottom of Lower Gobernadora on RMV property likely would preclude this area from supporting a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> .	Potential breeding/foraging areas in San Juan Creek, south of a ranch residence south of Ortega Highway, and the historic nesting area in the Narrows in Chiquita Canyon would be conserved. Development in the grassland habitat in the valley bottom of Lower Gobernadora on RMV property likely would preclude this area from supporting a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Historic breeding areas at the mouth of Verdugo Canyon and the “Riverside Cement” colony in Lower Cristianitos and Lower Gabino canyons would be largely developed.	The majority of historic breeding locations and adjacent uplands would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved in the Narrows area of Chiquita Canyon, San Juan Creek (including the mouth of Verdugo Canyon), south of a ranch residence south of Ortega Highway, and the “Riverside Cement” colony in Lower Cristianitos and Lower Gabino canyons.	The majority of historic breeding locations and adjacent uplands would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved in the Narrows area of Chiquita Canyon, San Juan Creek (including the mouth of Verdugo Canyon), south of a ranch residence south of Ortega Highway, and the “Riverside Cement” colony in Lower Cristianitos and Lower Gabino canyons.	Approximately 50% of the historic nesting colony areas would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved south of a ranch residence south of Ortega Highway. Potential breeding/foraging areas that would be affected by development include the Narrows area of Chiquita Canyon and at the mouth of Verdugo Canyon.	Approximately 50% of the historic nesting colony areas would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved south of a ranch residence south of Ortega Highway. Potential breeding/foraging areas that would be affected by development include the Narrows area of Chiquita Canyon, the “Riverside Cement” colony in Lower Cristianitos and Lower Gabino canyons, and at the mouth of Verdugo Canyon.
white-tailed kite <i>Elanus leucurus</i>	31 historic nest locations (86%) and 5,819 acres (81%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	31 historic nest locations (86%) and 5,852 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	31 historic nest locations (86%) and 6,142 acres (87%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	30 historic nest locations (83%) and 5,853 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	30 historic nest locations (83%) and 5,861 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	30 historic nest locations (83%) and 5,826 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
yellow warbler <i>Dendroica petechia</i>	24 locations (75%) and 4,357 acres (82%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	25 locations (78%) and 4,378 acres (84%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	26 locations (81%) and 4,521 acres (87%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved.	26 locations (81%) and 4,360 acres (84%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved.	27 locations (82%) and 4,348 acres (83%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved.	27 locations (82%) and 4,314 acres (83%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved.
yellow-breasted chat <i>Icteria virens</i>	105 locations (81 and 4,357 acres (82%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	108 locations (84%) and 4,378 acres (84%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	111 locations (86%) and 4,521 acres (87%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	109 locations (85%) and 4,360 acres (84%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	109 locations (85%) and 4,348 acres (83%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	110 locations (85%) and 4,314 acres (83%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.
western spadefoot toad <i>Scaphiopus hammondi</i>	16 locations (73%) and all of three <i>important populations</i> (Chiquita Ridge, Upper Cristianitos, Lower Gabino Creek) would be conserved. Portions of the two other <i>important populations</i> along San Juan Creek and Radio Tower Road would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	16 locations (76%) and all of three <i>important populations</i> (Chiquita Ridge, Upper Cristianitos, Lower Gabino Creek) would be conserved. Portions of the two other <i>important populations</i> along San Juan Creek and Radio Tower Road would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	19 locations (86%) and all of four <i>important populations</i> (Chiquita Ridge, Radio Tower Road, Upper Cristianitos, Lower Gabino Creek) would be conserved. A portion of the fifth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	19 locations (86%) and all of four <i>important populations</i> (Chiquita Ridge, Radio Tower Road, Upper Cristianitos, Lower Gabino Creek) would be conserved. A portion of the fifth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	17 locations (77%) and all of four <i>important populations</i> (Chiquita Ridge, Radio Tower Road, Upper Cristianitos, Lower Gabino Creek). A portion of the fifth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	17 locations (77%) and all of four <i>important populations</i> (Chiquita Ridge, Radio Tower Road, Upper Cristianitos, Lower Gabino Creek). A portion of the fifth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
orange-throated whiptail <i>Cnemidophorus hyperythrus beldingi</i>	106 locations (62%) and 24,571 acres (85%) of coastal sage scrub, chaparral and woodland would be conserved. 49 of 59 locations (83%) in the Chiquita Canyon/Wagon Wheel Canyon <i>important population/key location</i> would be conserved. 7 of 18 locations (39%) in the Chiquadora Ridge <i>important population/key location</i> and 9 of 47 locations (19%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.	121 locations (70%) and 24,842 acres (86%) of coastal sage scrub, chaparral and woodland would be conserved. All 59 locations in the Chiquita Canyon/Wagon Wheel Canyon <i>important population/key location</i> would be conserved. 7 of 18 locations (39%) of the Chiquadora Ridge <i>important population/key location</i> and 9 of 47 locations (19%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.	139 locations (81%) and 26,176 acres (91%) of coastal sage scrub, chaparral and woodland would be conserved. All 59 locations in the Chiquita Canyon/Wagon Wheel Canyon and all 18 locations in the Chiquadora Ridge <i>important populations/key locations</i> would be conserved. 16 of 47 locations (34%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.	133 locations (77%) and 24,244 acres (84%) of coastal sage scrub, chaparral and woodland would be conserved. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and all 59 locations in the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 14 of 47 locations (30%) would be conserved.	129 locations (75%) and 24,255 acres (84%) of coastal sage scrub, chaparral and woodland would be conserved. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and 55 of 59 (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 12 of 47 locations (25%) would be conserved.	129 locations (75%) and 23,724 acres (82%) of coastal sage scrub, chaparral and woodland would be conserved. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and 55 of 59 (91%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 12 of 47 locations (25%) would be conserved.
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i>	41 locations (82%) and 23,109 acres (85%) of coastal sage scrub and chaparral would be conserved. The <i>important population/key location</i> in Upper Cristianitos would be 100% conserved. The large majority (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved.	48 locations (96%) and 23,369 acres (86%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.	50 locations (100%) and 24,555 acres (91%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.	43 locations (86%) and 22,751 acres (84%) of coastal sage scrub and chaparral would be conserved. Both <i>important populations/ key locations</i> would be 100% conserved.	44 locations (86%) and 22,742 acres (84%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.	44 locations (86%) and 22,212 acres (82%) of coastal sage scrub and chaparral would be conserved. The large majority (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. The <i>important population/key location</i> in Upper Cristianitos would be 100% conserved.
southwestern pond turtle <i>Clemmys marmorata pallida</i>	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome’s Lake in Upper Gabin. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas.	5 of 8 locations would be conserved, including the <i>important population/key location</i> riparian and aquatic habitats along San Juan Creek, and the stockpond and other wetlands in Upper Cristianitos. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas. An <i>important population/key location</i> in Upper Gabino at Jerome’s Lake would be impacted.	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome’s Lake in Upper Gabino. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. All conserved sites would have buffers of at least 328 ft from adjacent development and southern exposures to provide nesting and overwintering sites. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal.	6 of 8 locations would be conserved, including <i>important populations/key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, Jerome’s Lake in Upper Gabino, and the location west of Airplane Canyon. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. All conserved sites would have buffers of at least 328 ft from adjacent development and southern exposures to provide nesting and overwintering sites. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal.	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome’s Lake in Upper Gabino. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas.	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome’s Lake in Upper Gabino. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas.

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
mountain lion <i>Puma concolor</i>	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large “live-in” block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the eastern portion of the Verdugo sub-basin would be undeveloped, providing a link to Caspers Wilderness Park and the CNF. Other areas of B-5 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, and San Juan Creek, although the relatively long interface between the creek and development north and south of the creek may affect lion movement through this area. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.	Limited development is proposed in the RMV portion of the San Mateo Creek Watershed. A large “live-in” block of habitat including the Talega, La Paz, Cristianitos and Middle Gabino canyons would be conserved. Development in Upper Gabino Canyon may affect the mountain lion’s use of this area. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing an uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-6 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, and San Juan Creek, although the relatively long interface between the creek and development north and south of the creek may affect lion movement through this area. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large “live-in” block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing and uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-8 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, and San Juan Creek.	No development is proposed in the Gabino, La Paz, Cristianitos, and eastern portion of the Talega sub-basins resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the proposed Habitat Reserve providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, and San Juan Creek.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the proposed Habitat Reserve providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, and San Juan Creek.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the proposed Habitat Reserve providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, and San Juan Creek.
mule deer <i>Odocoileus hemionus</i>	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large “live-in” block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the eastern portion of the Verdugo sub-basin would be undeveloped, providing a link to Caspers Wilderness Park and the CNF. Other areas of B-5 providing for mule deer “live-in”/movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, and San Juan Creek. Development in Lower Sulphur Canyon and Gobernadora may affect direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.	Limited development is proposed in the RMV portion of the San Mateo Creek Watershed. A large “live-in” block of habitat including the Talega, La Paz, Cristianitos and Middle Gabino canyons would be conserved. Development in Upper Gabino Canyon may somewhat affect the mule deer’s use of the area and bring them into greater contact with humans(e.g., vehicle collisions), but this impact would not be significant because of the deer’s tolerance for human presence. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing an uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-6 providing for mule deer movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, and San Juan Creek. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.	No development is proposed in the RMV portion of the San Mateo Creek Watershed, resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The Verdugo sub-basin would be conserved, providing an uninterrupted link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of B-8 providing for mule deer “live-in” and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the Gabino, La Paz, Cristianitos, and eastern portion of the Talega sub-basins resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the proposed Habitat Reserve providing for mule deer “live-in” and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the proposed Habitat Reserve providing for mule deer “live-in” and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large “live-in” habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the proposed Habitat Reserve providing for mule deer “live-in” and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.
chaparral beargrass <i>Nolina cismontana</i>	The Talega sub-basin <i>important population/key location</i> would be conserved.	The Talega sub-basin <i>important population/key location</i> would be conserved.	The Talega sub-basin <i>important population/key location</i> would be conserved.	The Talega sub-basin <i>important population/key location</i> would be conserved.	The Talega sub-basin <i>important population/key location</i> would be conserved.	The Talega sub-basin <i>important population/key location</i> would be conserved.

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

Planning Species	B-5	B-6	B-8	B-9	B-10	B-11
Coulter's saltbush <i>Atriplex coulteri</i>	2,165 individuals (70%) and 27 locations (77%) would be conserved. Approximately 1,119 individuals (67%) and 15 locations (58%) in the <i>major population/key location</i> in Middle Chiquita Canyon would be conserved. <i>Important populations</i> located in Lower Chiquita, upper Cristianitos and Upper Gabino canyons would be conserved. Approximately 331 individuals (48%) and 4 locations (57%) in the <i>important population/key location</i> north of the treatment plant in Chiquita Canyon would be conserved.	2,986 individuals (97%) and 30 locations (86%) would be conserved. 100% of the <i>major population/key location</i> and <i>important population/key location</i> in Middle Chiquita Canyon would be conserved, as would the <i>important populations</i> in Lower Chiquita and Upper Cristianitos canyons. The only impacted population would be the <i>important population</i> located in Upper Gabino Canyon.	3,086 individuals (100%) and 35 locations (100%) would be conserved.	3,086 individuals (100%) and 35 locations (100%) would be conserved.	3,077 individuals (99%) and 33 locations (94%) would be conserved. Only a few individuals in the Middle Chiquita Canyon <i>major population/key location</i> and 1 other non-key location would be impacted.	3080 individuals (99%) and 34 locations (97%) would be conserved. Only 6 individuals in the non-key location would be impacted.
many-stemmed dudleya <i>Dudleya multicaulus</i>	38,028 individuals (66%) and 189 locations (56%) would be conserved. Of the <i>major populations/key locations</i> , 95% of the individuals and 97% of locations of the Cristianitos Canyon population, 49% of individuals and 61% of locations of the Chiquadora Ridge population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 2% of individuals and 4% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 42% of individuals and 45% of locations of the Chiquita Ridge population/locations, 84% of individuals and 54% of locations in the Upper Gobernadora population, and less than 1% of the individuals and 2% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	40,013 individuals (70%) and 228 locations (67%) would be conserved. Of the <i>major populations/key locations</i> , 73% of individuals and 83% of locations of the Chiquadora Ridge population, 95% of individuals and 83% of locations of the Upper Gabino/La Paz Canyon population, 71% of individuals and 79% of locations of the Cristianitos Canyon population, and 4% of individuals and 2% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 100% of the Lower Chiquita Canyon population/locations, and 84% of the individuals and 54% of the locations in the Upper Gobernadora population would be conserved. In the East Talega <i>important population</i> , 100% of the population/locations would be conserved.	51,092 individuals (89%) and 275 locations (81%) would be conserved. Of the <i>major populations/key locations</i> , 100% of individuals/locations of the Chiquadora Ridge population, the Upper Gabino/La Paz Canyon population, and the Cristianitos Canyon would be conserved. 4% of individuals and 8% of locations of the Gobernadora <i>major population/key location</i> would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 100% of the Lower Chiquita Canyon population/locations, and 89% of the individuals and 78% of the locations in the Upper Gobernadora population would be conserved. In the East Talega <i>important population</i> , 100% of the population/locations would be conserved.	44,700 individuals (78%) and 231 locations (68%) would be conserved. Of the <i>major populations/key locations</i> , 99% of individuals and 91% of locations of the Chiquadora Ridge population, 99% of individuals and 96% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 3% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 20% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	41,538 individuals (69%) and 236 locations (69%) would be conserved. Of the <i>major populations/key locations</i> , 99% of individuals and 92% of locations of the Chiquadora Ridge population, 100% of individuals and locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 3% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 22% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	38,968 individuals (68%) and 225 locations (66%) would be conserved. Of the <i>major populations/key locations</i> , 99% of individuals and 92% of locations of the Chiquadora Ridge population, 77% of individuals and 83% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 3% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 22% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.
mud nama <i>Nama stenocarpum</i>	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring checkerbloom <i>Sidalcea neomexicana</i>	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be impacted, as would the small population in the slope wetland in Gobernadora.	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.

**TABLE M-10 (Continued)**  
**CONSERVATION ANALYSIS OF PLANNING SPECIES UNDER THE “B” ALTERNATIVE**

<b>Planning Species</b>	<b>B-5</b>	<b>B-6</b>	<b>B-8</b>	<b>B-9</b>	<b>B-10</b>	<b>B-11</b>
southern tarplant <i>Centromadia parryi</i> var. <i>australis</i>	93,000+ individuals (64%) and 28 locations (67%) would be conserved. Approximately 71,150 individuals (59%) and 24 locations (54%) of the <i>major population/key location</i> in Middle Chiquita and 1,249 individuals (33%) and 2 locations (40%) in the <i>important population/key location</i> north of the treatment plant would be conserved. The <i>major populations/key locations</i> in Lower Chiquita Canyon (the Tesoro mitigation site) and Gobernadora (GERA) would be conserved.	145,000+ individuals (100%) and 42 locations (100%) would be conserved.	145,000+ individuals (100%) and 42 locations (100%) would be conserved.	145,000+ individuals (100%) and 42 locations (100%) would be conserved.	121,000+ individuals (83%) and 36 locations (85%) would be conserved. Approximately 96,113 individuals (81%) and 27 locations (77%) of the <i>major population/key location</i> in Middle Chiquita and 3,122 individuals (83%) and 3 locations (60%) in the <i>important population/key location</i> north of the treatment plant would be conserved. The <i>major populations/key locations</i> in Lower Chiquita Canyon (the Tesoro mitigation site) and Gobernadora (GERA) would be conserved.	144,900+ individuals (99%) and 41 locations (98%) would be conserved. 100% of individuals and locations of the <i>major populations/key location</i> in Middle Chiquita, Lower Chiquita Canyon (the Tesoro mitigation site) and Gobernadora (GERA) would be conserved, as would the <i>important population/key location</i> north of the treatment plant.

Source: Dudek 2004

**TABLE M-11  
TABULAR SUMMARY OF HABITAT PROTECTION FOR THE “B” ALTERNATIVES**

Vegetation/Land Cover	Existing Planning Area (acres) <sup>1</sup>	Existing RMV (acres)	B-5				B-6				B-8			
			Planning Area OS (acres)	% of Total Planning Area	RMV OS (acres)	% of Existing RMV	Planning Area OS (acres)	% of Total Planning Area	RMV OS (acres)	% of Existing RMV	Planning Area OS (acres)	% of Total Planning Area	RMV OS (acres)	% of Existing RMV
Coastal Sage Scrub	19,724	7,682	16,703	85%	5,691	74%	16,958	86%	5,946	77%	17,811	90%	6,799	88%
Chaparral	7,333	3,793	6,408	87%	2,991	79%	6,413	87%	2,996	79%	6,744	92%	3,327	88%
Grassland	14,979	5,041	10,756	72%	3,980	79%	9,972	67%	3,196	63%	10,983	73%	4,206	83%
Woodland	1,388	276	1,203	87%	135	49%	1,208	87%	139	50%	1,287	93%	218	79%
Forest	436	312	258	59%	140	45%	265	61%	147	47%	334	77%	216	69%
Riparian	5,213	1,920	4,357	82%	1,552	81%	4,379	84%	1,575	82%	4,522	87%	1,718	89%
Open Water	420	136	188	45%	72	53%	187	44%	71	52%	189	45%	73	54%
Freshwater Marsh	36	25	28	78%	17	68%	28	78%	17	68%	29	81%	18	72%
Watercourses	78	13	54	69%	13	100%	54	69%	13	100%	54	69%	13	100%
Vernal Pools	24	20	16	67%	16	80%	16	67%	16	80%	20	83%	20	100%
Cliff & Rock	9	6	5	56%	2	33%	5	56%	2	33%	5	56%	2	33%
<b>Sub-total Natural Habitats</b>	<b>49,771</b>	<b>19,224</b>	<b>39,976</b>	<b>80%</b>	<b>14,609</b>	<b>75%</b>	<b>39,485</b>	<b>79%</b>	<b>14,118</b>	<b>73%</b>	<b>41,978</b>	<b>84%</b>	<b>16,610</b>	<b>86%</b>
Developed	32,501	535	2,205	6%	259	48%	1,899	6%	136	25%	2,089	6%	324	60%
Disturbed	1,786	501	677	38%	174	35%	604	34%	101	20%	758	42%	254	51%
Agriculture	3,805	2,555	1,496	39%	596	23%	2,604	68%	1,705	67%	2,837	74%	1,937	76%
<b>Sub-total Non-habitat Land Covers</b>	<b>38,092</b>	<b>3,591</b>	<b>4,198</b>	<b>11%</b>	<b>1,029</b>	<b>28%</b>	<b>5,107</b>	<b>13%</b>	<b>1,942</b>	<b>54%</b>	<b>5,684</b>	<b>15%</b>	<b>2,515</b>	<b>67%</b>
<b>Total</b>	<b>87,863</b>	<b>22,815</b>	<b>44,174</b>	<b>50%</b>	<b>15,638</b>	<b>68%</b>	<b>44,592</b>	<b>51%</b>	<b>16,060</b>	<b>70%</b>	<b>47,662</b>	<b>54%</b>	<b>19,125</b>	<b>84%</b>



**TABLE M-11 (Continued)**  
**TABULAR SUMMARY OF HABITAT PROTECTION FOR THE "B" ALTERNATIVES**

Vegetation/Land Cover	Existing Planning Area (acres) <sup>1</sup>	Existing RMV (acres)	B-9				B-10				B-11			
			Planning Area OS (acres)	% of Total Planning Area	RMV OS (acres)	% of Existing RMV	Planning Area OS (acres)	% of Total Planning Area	RMV OS(acres)	% of Existing RMV	Planning Area OS (acres)	% of Total Planning Area	RMV OS(acres)	% of Existing RMV
<b>Natural Habitats</b>														
Coastal Sage Scrub	19,724	7,682	16,633	84%	5,621	73%	16,611	84%	5,598	73%	16,204	82%	5,192	68%
Chaparral	7,333	3,793	6,118	83%	2,701	71%	6,131	84%	2,714	72%	6,009	82%	2,591	68%
Grassland	14,979	5,041	10,262	68%	3,487	69%	10,031	67%	3,256	65%	9,796	65%	3,021	60%
Woodland	1,388	276	1,236	89%	167	60%	1,256	90%	187	68%	1,254	90%	185	67%
Forest	436	312	258	59%	140	45%	257	59%	139	44%	258	59%	140	45%
Riparian	5,213	1,920	4,358	83%	1,554	81%	4,347	83%	1,543	80%	4,312	83%	1,508	78%
Open Water	420	136	189	45%	73	54%	188	45%	72	53%	187	44%	71	52%
Freshwater Marsh	36	25	29	81%	18	72%	28	78%	17	68%	29	81%	17	68%
Watercourses	78	13	54	69%	13	100%	54	69%	13	100%	54	69%	13	100%
Vernal Pools	24	20	20	83%	20	100%	20	83%	20	100%	20	83%	20	100%
Cliff & Rock	9	6	5	56%	2	33%	5	56%	2	33%	5	56%	2	33%
<b>Sub-total Natural Habitats</b>	<b>49,771</b>	<b>19,224</b>	<b>39,162</b>	<b>79%</b>	<b>13,796</b>	<b>72%</b>	<b>38,928</b>	<b>78%</b>	<b>13,561</b>	<b>70%</b>	<b>38,128</b>	<b>77%</b>	<b>12,760</b>	<b>66%</b>
<b>Non-habitat Land Covers</b>														
Developed	32,501	535	1,948	6%	185	34%	1,953	6%	191	36%	1,945	6%	183	34%
Disturbed	1,786	501	754	42%	250	50%	729	41%	225	45%	673	38%	170	34%
Agriculture	3,805	2,555	2,311	61%	1,413	55%	2,103	55%	1,205	47%	2,007	53%	1,109	43%
<b>Sub-total Non-habitat Land Covers</b>	<b>38,092</b>	<b>3,591</b>	<b>5,013</b>	<b>13%</b>	<b>1,848</b>	<b>51%</b>	<b>4,785</b>	<b>13%</b>	<b>1,621</b>	<b>45%</b>	<b>4,625</b>	<b>12%</b>	<b>1,462</b>	<b>41%</b>
<b>Total</b>	<b>87,863</b>	<b>22,815</b>	<b>44,175</b>	<b>50%</b>	<b>15,644</b>	<b>69%</b>	<b>43,713</b>	<b>50%</b>	<b>15,182</b>	<b>66%</b>	<b>42,753</b>	<b>49%</b>	<b>14,222</b>	<b>62%</b>
Source: Dudek 2004														

For the “could be consistent” finding, the type of modification that would be necessary for B-5 to be consistent with Guideline 27 is the inclusion of culverts or similar type facility and associated fencing in the design of Cristianitos Road in the Chiquita sub-basin and the east-facing slope of Chiquadora Ridge to facilitate ground-dwelling wildlife movement. Upon preliminary review, this modification appears to be feasible in that it involves discrete design decisions regarding Cristianitos Road.

For the “not consistent” findings, the B-5 Alternative conflicts with the majority of Guidelines for the Chiquita, Gobernadora, Central San Juan and Trampas, and Verdugo sub-basins. These conflicts are a direct result of the Conservation Strategy proposed by this Alternative, i.e., to protect the resources in the San Mateo Watershed and intensify development in the San Juan Watershed. As a result of the overall B-5 Conservation Strategy, the resources in the San Juan Watershed are impacted to a much greater degree than the alternatives that present a more balanced approach to protecting all subregion-wide resources, e.g., B-9 and the Proposed Project (B-4). As a result, compared to the B-9 and B-4 alternatives, the B-5 has a higher percentage of conflicts with the Planning Guidelines. While both the B-4 and B-5 have the same number of consistent findings (110), and could, on that basis, both be said to have a medium degree of consistency, in fact B-5 has absolute conflicts with 39 Guidelines versus 18 for the Proposed Project (B-4). The Proposed Project (B-4) has 23 “could be consistent” compared to only one for B-5. Overall, this indicates a greater failure by the B-5 Alternative to meet the Planning Guidelines. For this reason B-5 has a medium-low degree of consistency and the conflicts are considered significant.

### **Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-5 is 53 percent (21/40 total) consistent with the Watershed Principles and 48 percent (19/41 total) not consistent. B-5 is consistent with the Principles in the San Mateo Watershed (with a single exception in the Cristianitos sub-basin related to the generation of fine sediments from erodible clay soils). B-5 is largely inconsistent with the recommendations for the San Juan sub-basins. As noted above, this is directly related to the Conservation Strategy proposed by the alternative.

Overall, the B-5 has a low degree of consistency with the Planning Principles and the conflicts are significant.

#### **1. Planning Species – NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-5 has medium consistency with the Planning Guidelines for 27 of the 28 Planning Species (the mud nama was excluded as noted above) relative to the other alternatives. The average Planning Species consistency for Alternative B-5 is 61 percent, with 38 percent not consistent. The average “could be consistent” for the Planning Species is only one percent.

As shown in Table M-6, the consistency percentages for 27 Planning Species range from 0 percent for the Riverside and San Diego fairy shrimp and salt spring checkerbloom to 100 percent for the golden eagle and chaparral beargrass.

The B-5 achieves varying levels of consistency for the other five listed species. The B-5 is 90 percent consistent for the arroyo toad. It is not consistent with two Guidelines: 51 and 80. Guideline 51, which recommends foraging and estivation habitat within the upland terraces of the floodplain of San Juan Creek (with a particular focus on the south side of the creek), is not met because B-5 would not provide for substantial setbacks south of the creek. B-5 is not consistent with Guideline 80, which recommends protecting Verdugo Canyon hydrology and

sediment transport processes, because it proposes development and a collector road in the canyon that would affect existing hydrology and sources of coarse sediment.

The B-5 Alternative is 50 percent consistent and 50 percent not consistent for the California gnatcatcher. The fairly extensive development proposed in Chiquita Canyon under B-5 primarily is responsible for the high percentages of “not consistent” for the gnatcatcher. The “not consistent” for Guidelines 1, 2, 16, 17, 20, 28, 39, and 44 are all related to the portions of the Chiquita Canyon development footprint that would preclude protecting key habitat linkages and implementing habitat restoration on Chiquita Ridge and in Sulphur Canyon. B-5 also is not consistent with Guideline 55 which recommends upland and floodplain habitat linkages along San Juan Creek, Guideline 66 which recommends protecting gnatcatcher *important populations* and coastal sage scrub to the maximum extent possible to maintain resident and dispersal habitat between San Juan Creek and Cristianitos Canyon, and Guideline 68 which recommends an upland habitat linkage south of the artificial lake in Trampas Canyon.

B-5 is 67 percent consistent and 33 percent not consistent for the least Bell’s vireo and 20 percent consistent and 80 percent not consistent for the southwestern willow flycatcher. For both the vireo and willow flycatcher, B-5 is not consistent with Guidelines 31, 33, 41, and 49. Guidelines 31, 33, and 41 pertain to protecting the southern willow scrub in GERA (31), the natural meander of Gobernadora Creek above the knickpoint (33), and protecting GERA from the effects of upstream development (41). Guideline 49 recommends restoration in Gobernadora Creek to address historic meander and land use-induced channel incision and erosion originating upstream. Because the B-5 Alternative proposes development in the northern portion of the valley, these Guidelines likely could not be met. B-5 also is not consistent for the vireo with Guidelines 3 and 5, which recommend protecting breeding and foraging habitat for the vireo along Chiquita Creek and protecting riparian habitat by recognizing the influences of terrains and hydrology in the system, respectively. Because B-5 proposes development on both sides the creek and in the major side canyons, neither Guideline could be met.

B-5 is 0 percent consistent for the Riverside and San Diego fairy shrimp because it would not protect all vernal pools and their contributing hydrologic resources located along Radio Tower Road.

B-5 is 67 percent consistent and 33 percent not consistent for the thread-leaved brodiaea. B-5 is not consistent on Guidelines 8, 19, 21, 22 and 35. Guidelines 8 and 35 recommend protecting the large population on Chiquadora Ridge along with protecting 2 of the 4 nearby small populations in Chiquita Canyon. The proposed development area in lower Chiquita would impact all the brodiaea populations. B-5 is not consistent with Guideline 19, which recommends adaptive management to protect sensitive plant locations. Finally, B-5 is not consistent with Guidelines 21 and 22, which recommend translocation of brodiaea and clay topsoils to coastal sage scrub restoration areas on Chiquita and Chiquadora ridges. B-5 development would occur in targeted CSS/VGL restoration areas and thus would preclude translocation and salvage of topsoils.

For the non-listed Planning Species, the B-4 alternative generally has medium consistency across the major species-habitat associations. As examples, for coastal sage scrub species, the B-5 is 57 percent consistent for the cactus wren, 69 percent consistent for the orange-throated whiptail, and 71 percent consistent for the San Diego horned lizard. For grassland species, the B-5 is 69 percent consistent for the grasshopper sparrow and 75 percent consistent for the merlin. For riparian/woodland species, the B-5 is 65 percent consistent for the Cooper’s hawk, 69 percent consistent for the white-tailed kite, and 67 percent consistent for the yellow warbler and yellow-breasted chat. For planning area-wide species, the B-5 is 100 percent

consistent for the golden eagle, 60 percent consistent for the mountain lion, and 59 percent consistent for the mule deer. Finally, for non-listed plants the B-5 provides variable protection and management, with chaparral beargrass at 100 percent consistent, Coulter's saltbush at 60 percent consistent, many-stemmed dudleya at 77 percent consistent, salt spring checkerbloom at 0 percent and southern tarplant at 33 percent consistent.

The B-5 Alternative overall would provide medium protection for Planning Species.

### **Planning Species – Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-5 has relatively low consistency with the Watershed Principles for the ten Planning Species for which they are directly relevant (i.e., aquatic/riparian species) (Table M-7). Overall, B-5 is 48 percent consistent with the Watershed Principles and 52 percent not consistent. The consistency findings have a wide range of 0 percent consistent for the southwestern willow flycatcher to 80 percent consistent for the western spadefoot toad.

B-5 is 79 percent consistent for the arroyo toad and 21 percent not consistent. B-5 is not consistent with Principles 21, 23 and 26 for the toad. Principle 21 recommends protecting sediment generation and transport in Verdugo Canyon important for downstream toad habitat in San Juan Creek by limiting impervious surfaces. Similarly, Principle 23 recommends protecting infiltration and peak flow patterns Verdugo Canyon. B-5 proposes extensive development in Verdugo Canyon and thus would not be consistent with these Principles. Principle 26 recommends reduction of erosion of fine sediments into Cristianitos Creek through siting of development on areas with clayey soils. B-5 proposes no development in Cristianitos Canyon and therefore the generation of fine sediments from erodible clays would continue.

B-5 is 47 percent consistent for the least Bell's vireo and 52 not consistent. For the southwestern willow flycatcher, B-5 is 0 percent consistent. B-5 is not consistent for the vireo and willow flycatcher with Principles 9, 10, and 12-15. These Principles all are concerned with protecting Gobernadora Creek and associated riparian and wetland habitats, including protecting natural creek meander (Principle 9), setting back development from the valley floor (Principle 10), creating natural treatment systems (Principle 12), addressing excessive sediment from upstream development (Principle 13), addressing existing channel incision (Principle 14) and protecting GERA (Principle 15). Because B-5 proposes development in the valley floor north of GERA, none of these Principles can be achieved. B-5 also is not consistent with Principle 6, which recommends maintaining groundwater recharge to sustain flows to Chiquita Creek, and Principle 26 for the vireo, as described above for the arroyo toad.

For the non-listed Planning Species, B-5 is not consistent with Principles 6, 9, 10, and 12-15, and 26 as described above for the vireo, for the Cooper's hawk, white-tailed kite, yellow warbler and yellow-breasted chat. For the tricolored blackbird, B-5 is not consistent with Principles 5, 6, 9, 10, and 12-14. Principle 5 recommends identifying natural treatment systems for water quality treatment and stormwater detention in the major side canyons and valley floor of Chiquita Canyon. Proposed development in Chiquita and Gobernadora canyons would prevent meeting these Principles. For the western spadefoot toad and southwestern pond turtle, B-5 is not consistent with Principles 21, 23, and 26, as described above for the arroyo toad.

Overall B-5 has low consistency with the Watershed Principles compared to the Proposed Project, B-8 and B-9.

## Circulation Systems Consistency Analysis

In order to portray the potential impacts of the alternative circulation systems, this section will analyze the circulation systems with regard to the sub-basin guidelines/principles. “Connectivity” considerations are based on the NCCP/HCP Planning Guidelines (General Policy 3.3) and the accompanying “Habitat Linkages and Wildlife Corridors Map and are incorporated explicitly into the Planning Guidelines sub-basin Protection Recommendations. These “connectivity” considerations provide criteria for reviewing potential impacts of the alternative circulation systems. Those portions of the circulation systems located *outside* the “development bubbles” are reviewed for consistency with the specific Guidelines and Principles applicable to each sub-basin. For the portions of the circulation systems located *within* “development bubbles,” the potential impacts already are reflected in the overall delineation of the particular “development bubble” and do not require separate analysis with respect to the project alternatives. Alternative B-5 is analyzed without the FTCS project.

### San Juan Creek Watershed

#### 1. Chiquita Sub-basin

The review of the different circulation systems reflects two different assumptions: (1) MPAH proposals proposed or identified in conjunction with the different Alternatives; and (2) the circulation elements shown on the existing MPAH (with the exception of the SOCTIIP for the reasons previously noted).

Alternative B-5 would include the Crown Valley Parkway extension to serve development areas shown in the Chiquita sub-basin above the treatment plant. Although a portion of the Crown Valley Parkway extension is located within the B-5 “development bubble,” the western half of the extension would impact Chiquita Ridge Habitat Linkage “C”, cross the canyon floor and through the “Narrows” Habitat Linkage Area “D” and a small portion of the eastern end of the extension would cross through the Sulphur Canyon Habitat Linkage “H.” The easternmost extension of Crown Valley Parkway, in conjunction with the “development bubble,” would interdict the Sulphur Canyon linkage.

Given the large size and location of the “development bubbles” in areas south of San Juan Creek, it is likely that Ortega Highway would continue to be designated a major roadway rather than a local road as proposed under the Proposed Project (B-4). Consequently, there would be no change in existing conditions with respect to wildlife movement and arroyo toad recovery potential along San Juan Creek.

#### 2. Gobernadora Sub-basin

The B-5 Alternative shows an arterial road constructed in the valley floor in conjunction with development in the valley floor and, consequently, would not be consistent with the sub-basin recommendations. The arterial crossing from the Gobernadora “development bubble” to the Chiquita development bubble would be the same alignment as for the B-4 Alternative but would not likely be elevated, except for the crossing over Gobernadora Creek. The Crown Valley Parkway extension through Sulphur Canyon also would not be consistent with the Gobernadora Creek restoration recommendations for Sulphur Canyon that is intended to reduce the generation of fine sediments impacting Gobernadora Creek and GERA. Overall the B-5 Circulation System would not be consistent with the sub-basin recommendations.

### 3. Trampas Sub-basin and Central San Juan Sub-basin

All of the alternatives propose the same arterial crossing of San Juan Creek and thus would have the same physical impacts. Alternative B-5 likely would retain the current function of Ortega Highway; this would not cause new physical impacts, but instead would affect potential arroyo toad recovery actions per the prior discussion of consistency with the NCCP sub-basin recommendations.

### 4. Verdugo Sub-basin

Alternative B-5 would require a new collector road through the center of Verdugo Canyon and thus would not be consistent with the sub-basin recommendations given the narrowness of the canyon and likely impacts.

## San Mateo Creek Watershed

### 1. Cristianitos Sub-basin

Alternative B-5 does not propose circulation system facilities in the sub-basin and thus would be consistent with the sub-basin recommendations.

### 2. Gabino and Blind Canyons Sub-basin

Since the B-5 Alternative does not propose development in the San Mateo Creek Watershed, this alternative would not create any potential circulation system impact considerations and thus would be consistent with the recommendations.

### 3. La Paz Sub-basin

Project Alternatives B-5 does not provide for development within the La Paz sub-basin and therefore would be consistent with the sub-basin recommendations.

### 4. Talega Sub-basin

Since Alternatives B-5 does not propose development in the San Mateo Creek Watershed, there would be no issues regarding circulation systems for these two alternatives and therefore B-5 would be consistent with the recommendations.

### 5. Other Planning Area

Since Alternative B-5 does not propose development in the San Mateo Creek Watershed, there would be no issues regarding circulation systems for these two alternatives and B-5 would be consistent with the recommendations.

## B-5 Alternative Consistency with Landscape Level SRP Tenets, SAMP Tenets and Watershed Planning Principles

**B-5 Open Space Features:** The Open Space proposed in Alternative B-5 has the following features: (a) creation of a 11,200 acre block of protected habitat contiguous with the other large already protected habitat systems in and adjacent to the planning area; (b) maximizing the protection of *key locations* of aquatic species dependent on the large scale geomorphologic processes and dynamic stream systems, particularly the arroyo toad; (c) more emphasis on preserving grasslands and chaparral habitats than under either Alternatives B-4 and B-6; (d) more emphasis on preserving connectivity within the San Juan Creek watershed than on

preserving blocks of contiguous coastal sage scrub habitat occupied by gnatcatchers (the latter as contrasted with greater protection of contiguous blocks of occupied coastal sage scrub under Alternatives B-4, B-6 and B-9); and (e) less emphasis on active restoration of creek systems (e.g., unlikely that the Gobernadora Creek Restoration Plan could be undertaken) and greater emphasis on restoring the contributing drainages of sub-watersheds (e.g., clay pits in Cristianitos Canyon and grasslands restoration in upper Cristianitos Canyon and upper Gabino Canyon (to the extent that funding is available for landform stabilization actions).

### **B-5 Alternative Consistency with the SRP/Science Advisors Tenets of Reserve Design**

- **Tenet 1: Conserve target species throughout the planning area**

The Draft NCCP Guidelines present information regarding key locations of major and important populations of listed and other unlisted species used as conservation planning “surrogates”. For the listed Planning Species, Alternative B-5 has variable consistency with the NCCP/HCP Guidelines (see Table M-4). B-5 generally protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo and southwestern willow flycatcher (see descriptions in Table M-10). However, for the arroyo toad development is proposed south of San Juan Creek adjacent to the *major population/key location* without substantial setbacks from the creek. In addition, development in Verdugo Canyon would severely impact a substantial source of coarse sediments essential to maintaining suitable breeding habitat in San Juan Creek. For the gnatcatcher, the protection of 78 percent of locations in the Chiquita Canyon/Chiquadora Ridge *major population/key location* does not achieve the recommended 80 percent for this population. For the vireo and flycatcher, *important populations* in GERA would be conserved, but upstream development would limit the ability to adaptively manage the riparian habitat because implementation of upstream habitat restoration would not occur and excessive surface and subsurface flows would contribute additional infiltration to the groundwater system. The San Diego and Riverside fairy shrimp vernal pools in Trampas Canyon development area (PA 5) would be impacted. Finally, the brodiaea *major population/key location* on Chiquadora Ridge would be impacted by development in Lower Chiquita Canyon (PA 2). Overall, B-5 would not adequately protect arroyo toad, least Bell’s vireo, southwestern willow flycatcher, Riverside and San Diego fairy shrimp, and thread-leaved brodiaea.

B-5 provides medium protection for the unlisted Planning Species (see Table M-10). *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 Table M-4, substantial impacts would occur to *key locations* of grasshopper sparrow, tricolored blackbird, orange-throated whiptail, Coulter’s saltbush, many-stemmed dudleya, and southern tarplant. For the grasshopper sparrow, 69 percent of the *major population/key location* in the Chiquita sub-basin/Chiquadora Ridge area would be impacted under B-5. The B-5 would not provide adequate protection for the grasshopper sparrow. For the tricolored blackbird, the *important population/key location* in Gobernadora likely would be extirpated by development in the valley floor. For the orange-throated whiptail, 61 percent of the locations in Chiquadora Ridge and 81 percent of the Gobernadora *important populations/key locations* would be impacted. For the Coulter’s saltbush 33 percent of individuals and 42 percent of locations in the Middle Chiquita *major population/key location* and 52 percent of individuals and 43 percent of locations in the Middle Chiquita *important population/key location* would be impacted. For the dudleya, 98 percent of individuals and 96 percent of locations in the Gobernadora *major population/key location* would be impacted. In addition, 58 percent of individuals and 55 percent of locations in the Chiquita Ridge *important population/key location* would be impacted. For southern tarplant, 41 percent of individuals and 46 percent of locations in the Middle Chiquita *major population/key*

*location* would be impacted. In addition, 67 percent of individuals and 60 percent of locations in the Middle Chiquita *important population/key location* would be impacted. For the salt spring checkerbloom, both *important populations* in Lower Chiquita Canyon would be impacted.

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 more than 80 percent of cactus wren locations and historic nest sites for the Cooper's hawk and kite, as well as more than 80 percent of suitable habitat for the three species, would be protected under the B-5 Alternative. For the golden eagle and merlin approximately 65 percent of foraging habitat would be protected and both species likely would persist in the subregion, although a key foraging area for the merlin in Middle and Lower Chiquita Canyon would be impacted. Under B-5, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer. The mud nama would not be adequately protected under the B-5 Alternative because 92 percent of the population would be impacted (this impact would occur under all alternatives because the Trampas Canyon development area (PA 5) impacts two locations totaling 7,500 and 2,000 individuals, respectively).

- **Tenet 2: Larger Reserves are better.**

The B-5 Alternative is comprised of four major habitat blocks: the Eastern block (24,247 acres), the Lower Chiquita block (3,698 acres), the Upper Chiquita block (2,428 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total more than 32,200 acres and account for about 74 percent of the Habitat Reserve. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest and Camp Pendleton. Habitat blocks for all alternatives are illustrated in Exhibits M1 through M6.

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

Important habitat linkages and wildlife corridors are described in Section 4.9 and shown in Exhibit 4.9-8. All the large habitat blocks described above are functionally interconnected within the Habitat Reserve System to varying degrees. However, several of the linkages are constrained or interdicted to some degree that is in conflict with the NCCP/HCP Planning Guidelines.

- The Upper Chiquita habitat block is connected to the Lower Chiquita block via east-west habitat linkages in the "Narrows" (Linkage D), but the connection to Caspers Wilderness Park and the Eastern block via linkages H and I is constrained by development in Middle Chiquita and the valley floor of Gobernadora, the latter of which is inconsistent with the recommendation for protection of Sulphur Canyon and a 2,000-2,500 feet wide corridor between Coto de Caza and development in Gobernadora (PA 3).
- Development in both Lower Chiquita (PA 2) and Gobernadora (PA 3) would result in a constriction of the habitat linkage along Chiquadora Ridge (Linkage G). The dimension of the linkage area just above the mouth of Gobernadora Creek in the "ox-bow" area (the southern part of Linkage G) also has been the subject of comment by the wildlife agencies comment.
- Development north and south of San Juan Creek (PAs 3 and 4) result in a constriction of the linkages along San Juan Creek (Linkage J) and the north-south linkage between Trampas Canyon (PA 5) and the East Ortega development area (PA 4) (extension of Linkage J).



- **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 four habitat blocks described above under Tenet 2 are presented in Table M-12. As shown in Table M-12, the vast majority of the four habitat blocks that would be protected as Open Space under the Proposed Project 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. For example, grassland is the largest component of the Lower Chiquita habitat block while coastal sage scrub is by far the largest 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 M-12, 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 or less of the Lower Chiquita and Eastern blocks. As would be expected from the existing pattern of urbanization in the planning area, internal fragmentation decreases from west to east, with the highest percentages of development and disturbed land uses in the Arroyo Trabuco and Upper Chiquita blocks and the lowest percentage in the Eastern block.

**TABLE M-12  
MAJOR VEGETATION COMMUNITIES WITHIN  
B-5 ALTERNATIVE HABITAT BLOCKS**

Vegetation Community/Land Cover Type	Habitat Block Acres <sup>1</sup>						
	Arroyo Trabuco	Upper Chiquita		Lower Chiquita		Eastern	
	Total	Total	RMV	Total	RMV	Total	RMV
Coastal Sage Scrub	313	1,246	218	1,088	650	10,800	4,186
Chaparral	121	134	19	109	65	5,146	2,762
Grassland	514	224	8	1,975	830	4,242	2,769
Woodland & Forest	141	52	10	10	10	1,015	196
Riparian	613	146	3	221	186	2,558	992
Other Habitats/Land Covers	30	534 <sup>2</sup>	67	217 <sup>2</sup>	164	24	13
Developed/Disturbed (% of Total in Block)	100 (5%)	91 (4%)	24 (7%)	76 (2%)	47 (2%)	461 (2%)	276 (2%)
<b>Total in Block</b>	<b>1,832</b>	<b>2,428</b>	<b>349</b>	<b>3,698</b>	<b>1,952</b>	<b>24,247</b>	<b>11,194</b>

<sup>1</sup>. 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.

<sup>2</sup>. Agriculture accounts for 533 acres of Other Habitats/Land Covers in Upper Chiquita and 195 acres in Lower Chiquita. 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

- **Tenet 5: Reserves should be biologically diverse.**

Table M-13 shows the amount and percentage of the major vegetation communities protected by the B-5, both in the overall B-5 open space and broken down by watersheds. Overall, the B5 protects the large majority of the major vegetation communities. Protection ranges from a low of 63 percent for grassland to a high of 89 percent for chaparral. Other than grassland, the lowest overall conservation percentage of the major vegetation communities is 85 percent for coastal

sage scrub. B-5 also provides balanced protection of the major vegetation communities within the San Juan and San Mateo watersheds. Except for grassland, with 14 percent greater protection in the San Juan Watershed compared to the San Mateo Watershed, all differences between the two watersheds are less than eight percent, ranging from a differential of five percent for coastal sage scrub and woodland/forest to eight percent for chaparral.

**TABLE M-13  
COMPARISON OF MAJOR VEGETATION COMMUNITIES IN THE  
B-5 ALTERNATIVE OPEN SPACE AND THE PLANNING AREA**

Vegetation Community	Planning Area		B-5 Alternative Open Space & Already Protected Open Space		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	19,724		16,701 (87%)		
San Juan Creek	15,056	76%	12,372 (82%)	74%	-2%
San Mateo Creek	3,772	19%	3,736 (99%)	22%	+3%
Other Watersheds <sup>2</sup>	896	5%	593 (66%)	4%	-1%
Chaparral	7,333		6,408 (87%)		
San Juan Creek	4,219	58%	3,393 (80%)	53%	-5%
San Mateo Creek	2,748	37%	2,275 (83%)	42%	+5%
Other Watersheds	366	5%	290 (79%)	3%	-2%
Grassland	14,979		10,755 (72%)		
San Juan Creek	8,215	55%	5,475 (67%)	51%	-4%
San Mateo Creek	3,093	21%	3,058 (98%)	28%	+7%
Other Watersheds	3,671	24%	2,222 (60%)	21%	-3%
Woodland & Forest	1,824		1,463 (80%)		
San Juan Creek	1,537	84%	1,187 (77%)	81%	-3%
San Mateo Creek	257	14%	257 (100%)	17%	+3%
Other Watersheds	30	2%	19 (63%)	1%	-1%
Riparian	5,213		4,357 (83%)		
San Juan Creek	3967	76%	3221 (81%)	74%	-2%
San Mateo Creek	1,024	20%	1,019 (99%)	23%	+3%
Other Watersheds	222	4%	117 (53%)	3%	-1%

<sup>1.</sup> Acreages exclude Existing Use areas.  
<sup>2.</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Source: Dudek 2004

Table M-14 compares the representation of the major vegetation communities in the B-5 Alternative with their representation in the planning area as a whole. For example, coastal sage scrub accounts for 40 percent of the total of the five major vegetation communities in the planning area and 43 percent of the total in the B-5 open space; i.e., coastal sage scrub is “over-represented” by three percent in the B-4 open space in relation to its occurrence in the planning area. Likewise, grassland is “under-represented” in the B-5 open space by six percent compared to the planning area. Although there is no established standard or threshold by which to compare the biological significance of a particular deviation from the existing conditions in the planning area, a maximum of under-representation of six percent for grassland does not appear to be a significant deviation, especially in light of the dynamic nature of habitat successions between grassland, coastal sage scrub and chaparral. A deviation of more than ten percent may be cause for concern that the vegetation communities are not adequately represented in

the open space. Overall, the five major vegetation communities are adequately represented in the B-5 Alternative, with a minimum of six percent under-representation for grassland and maximum three percent over-representation for coastal sage scrub. Later in this Chapter, a direct comparison of the representation of the Habitat Reserve alternatives will be presented.

The same comparison was applied to watersheds, with similar results. The maximum deviations from the planning area are grassland at three percent under-represented and coastal sage scrub at three percent over-represented in the San Juan Watershed. Overall, the B-5 provides a balanced representation of the existing distribution of the major vegetation communities in the different watersheds.

**TABLE M-14  
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES  
UNDER THE COMBINED B-5 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE**

Vegetation Community	Planning Area		B-5 Alternative Open Space & Already Protected Open Space		
	Planning Area Acres <sup>1</sup>	% of Planning Area	Acres (% of total)	% of Combined B-5 Open Space & Already Protected Open Space	% Deviation from Planning Area Distribution
Coastal Sage Scrub	19,724	40%	16,701 (87%)	42%	+2%
San Juan Creek	15,056	31%	12,372 (82%)	31%	0%
San Mateo Creek	3,772	8%	3,736 (99%)	9%	+1%
Other Watersheds <sup>2</sup>	896	1%	593 (66%)	2%	+1%
Chaparral	7,333	15%	6,408 (87%)	16%	+1%
San Juan Creek	4,219	9%	3,393 (80%)	9%	0%
San Mateo Creek	2,748	5%	2,275 (83%)	6%	+1%
Other Watersheds	366	1%	290 (79%)	1%	0%
Grassland	14,979	30%	10,755(72%)	27%	-3%
San Juan Creek	8,215	17%	5,475 (67%)	14%	-3%
San Mateo Creek	3,093	6%	3,058 (98%)	8%	+2%
Other Watersheds	3,671	7%	2,222 (60%)	6%	-1%
Woodland & Forest	1,824	4%	1,463 (80%)	4%	0%
San Juan Creek	1,537	3%	1,187 (77%)	3%	0%
San Mateo Creek	257	1%	257 (100%)	1%	0%
Other Watersheds	30	<1%	19 (63%)	<1%	0%
Riparian	5,213	11%	4,357 (83%)	11%	0%
San Juan Creek	3967	8%	3,221 (81%)	8%	0%
San Mateo Creek	1,024	2%	1,019 (99%)	3%	+1%
Other Watersheds	222	<1%	117 (53%)	<1%	0%

<sup>1</sup>. Acreages exclude Existing Use areas.

<sup>2</sup>. Other Watersheds include the San Clemente and Aliso Hydrological Areas

Source: Dudek 2004

Table M-15 compares the elevational distribution of the major vegetation communities in the planning area and the B-5 open space. As with the Proposed Project (B-4), the protection percentages increase with elevation for all the major vegetation communities. A comparison of the “% Within the Vegetation Community” columns for the planning area and B-5 open space. shows that the elevational distributions of the vegetation communities in the B-5 open space generally track the existing distributions in the planning area, but with a slight bias

toward under-representations of the upland vegetation communities at less than 800 feet. The protection of riparian vegetation shows no elevational bias. Compared with other alternatives, however, the B-5 open space has the greatest under-representation of grassland at the lowest elevation range (<400 ft), with six percent less in the open space (21 percent) at less than 400 feet compared to existing conditions (27 percent). This is a result of relatively more impacts to grasslands in Chiquita Canyon and relatively less impacts to grasslands in Cristianitos Canyon. This relative difference, also is demonstrated in Table M-15, shows a -4 percent representation of grassland in the San Juan Watershed and a +7 percent representation in the San Mateo Watershed.

**TABLE M-15  
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE  
COMBINED B-5 ALTERNATIVE OPEN SPACE AND ALREADY PROTECTED  
OPEN SPACE COMPARED TO PLANNING AREA**

Vegetation Community	Elevation Range (ft.)	Planning Area		Combined B-5 Alternative Open Space & Already Protected Open Space		
		Planning Area Acres <sup>1</sup>	% Within Vegetation Community	Acres (% of Total)	% Within Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	0-400	1,414	7%	795 (56%)	5%	-2%
	401-800	9,825	50%	7,764 (79%)	46%	-4%
	801-1,200	6,562	33%	6,267 (95%)	37%	+4%
	>1,200	1,923	10%	1,875 (97%)	11%	+1%
<b>Total</b>		<b>19,724</b>		<b>16,701 (85%)</b>		
Chaparral	0-400	166	2%	93 (56%)	1%	-1%
	401-800	4,640	63%	3,814 (82%)	59%	-4%
	801-1,200	2,010	27%	1,987 (99%)	31%	+4%
	>1,200	518	7%	514 (99%)	8%	+1%
<b>Total</b>		<b>7,334</b>		<b>6,408 (87%)</b>		
Grassland	0-400	4,005	27%	2,232 (56%)	21%	-6%
	401-800	8,121	54%	6,159 (76%)	57%	+3%
	801-1,200	2,551	17%	2,077 (81%)	19%	+2%
	>1,200	299	2%	287 (96%)	3%	+1%
<b>Total</b>		<b>14,976</b>		<b>10,755 (72%)</b>		
Woodland & Forest	0-400	174	10%	70 (40%)	5%	-5%
	401-800	1,005	55%	784 (78%)	54%	-1%
	801-1,200	509	28%	474 (93%)	32%	+4%
	>1,200	135	7%	135 (100%)	9%	+2%
<b>Total</b>		<b>1,823</b>		<b>1,463 (80%)</b>		
Riparian	0-400	1,289	25%	1,031 (80%)	24%	-1%
	401-800	3,088	59%	2,564 (83%)	59%	0%
	801-1,200	730	14%	658 (90%)	15%	+1%
	>1,200	106	2%	104 (98%)	2%	0%
<b>Total</b>		<b>5,213</b>		<b>4,357 (83%)</b>		

<sup>1</sup> Acreages exclude Existing Use areas.

Source: Dudek 2004

- **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-5 proposed circulation system compliance with Draft NCCP/HCP Planning Guidelines General Policy 4 (roads and

infrastructure to be located outside the open space to the maximum extent feasible) is reviewed in above. 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 NCCP/HCP Planning Guidelines, General Policy 5 requirements.

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

**San Juan Creek Watershed** – With the upper two-thirds of the Gobernadora Creek watershed already urbanized, substantial portions of the Central San Juan sub-basin in orchard and nursery use and Trampas Canyon significantly altered by ongoing silica mining, Alternative B-5 is premised on a strategy of concentrating proposed development within the San Juan watershed, a watershed that is already significantly urbanized in some areas (e.g., Coto de Caza) and altered in others (e.g., the silica mining operation in Trampas Canyon). Conservation efforts would focus on the portion of the San Mateo watershed within the planning area in order to protect habitat as part of a single large block of Habitat Reserve lands (except for ongoing operations within existing the Northrup Grumman leasehold facilities). In contrast with the Proposed Project B-4 strategy of employing Terrains/Hydrology concepts throughout the RMV property, Alternative B-5 emphasizes more traditional hydrology management in the San Juan watershed in order to preserve the San Mateo watershed in a form requiring little management.

**San Mateo Watershed** – Some significant landform/terrains restoration would be required in the San Mateo watershed in clay soils areas characterized by severe erosion (clay pits in Cristianitos Canyon, and eroding slopes in upper Gabino) and grasslands/coastal sage scrub restoration in upper Cristianitos Canyon and upper Gabino Canyon would be required to reduce long term generation of fine sediments that are detrimental to the habitats of aquatic species. However, no management of hydrologic and water quality conditions relating to urbanization would be required.

### **B-5 Alternative Consistency with SAMP Tenets**

#### **SAMP Tenet 1: No net loss of acreage and functions of waters of the U.S./State**

As reviewed under the Watershed Principles functions, Alternative B-5 would protect the major terrains/hydrology functions of the San Mateo watershed portion of the planning area, as well as the major riparian/wetlands systems. However, it is unclear whether the B-5 Alternative would be capable of providing funding required for vegetation and landform restoration important to enhancing and restoring long-term hydrologic/geomorphic processes (more limited, lower cost restoration approach to upper Gabino is set forth in the draft Grazing Management Plan). Substantial development would be allowed in and along the valley floors within the Chiquita sub-basin, Gobernadora sub-basin and the Verdugo Canyon sub-basin, potentially conflicting with this SAMP tenet. With regard to net acreage of waters of the U.S./State, Alternative B-5 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 due to development within the development bubbles.

#### **SAMP Tenet 2: Maintain/restore riparian ecosystem integrity**

As reviewed under the Watershed Principles functions, Alternative B-5 has been designed to protect the major terrains/hydrology functions of the San Mateo watershed portion of the planning area, as well as the major riparian/wetlands systems. However, substantial development would be allowed in and along the valley floors within the Chiquita sub-basin, Gobernadora sub-basin and the Verdugo Canyon sub-basin, potentially conflicting with this

SAMP tenet. With development on both sides of Chiquita Creek, it would be difficult to maintain the integrity of the Creek ecosystem. In the case of the Gobernadora Creek ecosystem, the B-5 Alternative would preclude the restoration of the historic meander above the “knickpoint” and would add significant new sources of groundwater infiltration further exacerbating existing excessive groundwater from upstream urbanized areas. Alternative B-5 would likely significantly impact Verdugo Canyon. Significant enhancement/restoration is proposed for Upper Cristianitos Creek and Upper Gabino Canyon; as noted under SAMP Tenet (i), the adequacy of funding for the restoration of these areas needs to be ascertained. Overall, Alternative B-5 is not consistent with this tenet.

#### SAMP Tenet 3: Protect headwaters

Each of the headwaters areas not already urbanized would be protected and/or restored. Significant enhancement/restoration is proposed for Upper Cristianitos Creek and Upper Gabino Canyon; as noted previously, the adequacy of funding for the restoration of these areas needs to be ascertained. The headwaters area of Trampas Creek is proposed for development but is currently significantly altered due to existing mining operations.

#### SAMP Tenet 4: Maintain/protect/restore riparian corridors

All major riparian corridors in the San Mateo watershed would be protected. Even if setbacks from riparian habitat were to be provided in the Chiquita and Gobernadora sub-basins, many of the functions of the riparian corridors would be impacted by development isolating the corridors from adjacent floodplain areas and uplands; further, as reviewed above, the location of development areas would preclude restoration of the Gobernadora Creek meander. Given the topography of Verdugo Canyon, development would likely impact the major riparian corridor. Thus, the B-5 Alternative is consistent with this tenet for all areas within the San Mateo watershed but is not consistent with this tenet with regard to portions of the Chiquita, Gobernadora and Verdugo sub-basins within the San Juan watershed.

#### SAMP Tenet 5: Maintain/and or/restore floodplain connection

Alternative B-5 would maintain all existing areas of floodplain connection within the San Mateo Watershed. Alternative B-5 is not consistent with the Chapter 8 proposal to restore 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), Alternative B-5 does not propose any actions that would be contrary to such processes but may impact existing floodplain connection due to extensive development proposed to be located within the valley floors. Existing floodplain connection would be impacted in Verdugo Canyon and in the Chiquita and Gobernadora sub-basins. Given the costs of restoring the existing clay pits in the Cristianitos sub-basin and the eroded areas in Upper Gabino, it may not be feasible to address significant sources of fine sediments contributing to creek erosion in both sub-basins. Overall, Alternative B-5 does not appear to be consistent with this tenet.

#### SAMP Tenet 6: Maintain and/or restore sediment sources and transport equilibrium

All existing sources of coarse sediments within the San Mateo watershed would be protected under B-5. Given the costs of restoring the existing clay pits in the Cristianitos sub-basin and the eroded areas in Upper Gabino, it may not be feasible to address significant sources of fine sediments contributing to creek erosion in both sub-basins. Within the San Juan Creek

watershed, sources of coarse sediments within the Chiquita, Gobernadora and Verdugo sub-basins would be substantially impacted. Alternative B-5 is not consistent with this tenet.

SAMP Tenet 7: Maintain adequate buffer for the protection of riparian corridors

The B-5 Alternative protects all riparian corridor buffers within the San Mateo watershed. Within the San Juan watershed, 100 ft. buffers would be required within the Chiquita and Gobernadora sub-basins; however, within the Verdugo sub-basin, the steep topography could limit the ability to achieve 100 ft. setbacks. Overall, Alternative B-5 is consistent with this tenet in the San Mateo watershed but is not consistent within the San Juan watershed.

SAMP Tenet 8: Protect riparian areas and associated habitats of listed and sensitive species

Riparian areas associated with listed and unlisted planning species would be protected within the San Mateo Creek watershed. The consistency analysis for SRP Reserve Design Tenet 1 addresses planning species within the San Juan Creek watershed. Other sensitive species are protected within the San Mateo watershed but impacts within the San Juan watershed would likely be significant. Given limitations imposed on restoration/management actions required to protect existing riparian habitat below the knickpoint in the Gobernadora sub-basin, it is unlikely that least Bell's vireo/flycatcher habitat would be protected on a long-term basis. Impacts on Verdugo Canyon would affect an important source of coarse sediments affecting downstream arroyo toad and least Bell's vireo habitat within San Juan Creek. Accordingly, Alternative B-5 would only be partially consistent with this SAMP Tenet.

**B-5 Consistency with 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: (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, the B-5 Alternatives allow development in the sandy terrains of the main valley floor and side canyons of Chiquita and Gobernadora canyons and thus are not consistent with this policy.

**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-5 Alternative would not be able to meet the above policy due to development in the sandy terrains of Chiquita and Gobernadora Canyons.

**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 the B-5 to address these existing erosion problems has not been resolved due to the question of the adequacy of funding for the Adaptive Management Program.

**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 Adaptive Management Program proposes the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. Table M-4 addresses the consistency of the B-5 Alternative with the restoration recommendations of the Adaptive Management Program.

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

Figure 6 of the Watershed Planning Principles depicts the locations of crystalline terrains. Alternative B-5 significantly impacts the crystalline terrains in Verdugo Canyon.

**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-5 Alternative with the sub-basin watershed principles is reviewed in Table M-5. 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 in qualitative terms for the B-5 Alternative; Chapter 4 of the WQMP proposes Site Planning and Treatment/Flow Control BMPs that specifically address each of the sub-basin Planning Considerations.

### 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)*

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).

*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.*

As reviewed in Chapter 3 of the WQMP:

"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 Canada Chiquita Sub-basin was divided into 18 catchments."

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; . . . . (5) changes in the infiltration of surface/soil water to groundwater [sub-part (4) involving "potential changes in sediment supply" is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]*

Each of the four elements of Principle 3 cited above is addressed by the WQMP and discussed extensively for the Proposed Project. As noted previously, the WQMP analyses have been prepared for the B-4 and B-9 Alternatives, with qualitative analyses for the other B Alternatives undertaken based on the B-4 and B-9 quantitative analyses. Chapter 7 of the WQMP addresses findings of significance for the "B" Alternatives analyzed qualitatively.

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.*

To address County Flood Control planning and management considerations, a HEC-1 analysis has been 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 compared with 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 will 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 are 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 will 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 will be provided for at the area plan approval stage through an Addendum or other appropriate CEQA review.

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.*

Chapter 4 of 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 (see discussion below) has been differentiated from localized processes influenced by specific land uses. This WQMP analysis is discussed more extensively under the consistency analysis for the Proposed Project.

Chapter 5 of 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 described in Chapter 4. The cumulative impacts analysis in Chapter 8 of the WQMP 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 Rancho Mission Viejo property planning area and downstream of the planning area.

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

As reviewed previously in the responses to 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 under three climatic scenarios (All Years, Dry Years and Wet Years) under pre-development conditions and post-development conditions with PDFs.

*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.*

B-5 has generally not considered the role of major episodic storm events in the San Juan Watershed as B-5 would affect the channel/floodplain structure of Chiquita, Gobernadora and Verdugo Creeks.

### 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-5 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 the B-5 does or does not concentrates development in clayey trains, with the effect of reducing yields of fine sediments in 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-5 impacts sources of coarse sediment in the Chiquita, Gobernadora and Verdugo sub-basins.

*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-5 impacts sources of coarse sediment in the Chiquita, Gobernadora and Verdugo sub-basins. 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 Table M-5 analyzes the consistency of the B-5 with 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-5.

*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. Chapters 4 and 5 of the WQMP review strategies for the B-4 and B-9 Alternatives directed toward achieving “flow duration matching” under the post-development “water balance” scenarios under average, wet and dry cycle rainfall conditions, which strategies are designed to protect stream geomorphology and avoid generating new sources of erosion.

*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 B-5 would impacts sources of coarse sediment in the Chiquita, Gobernadora and Verdugo sub-basins. In contrast to alternatives that propose development in areas currently producing fine sediment, B-5 does not propose development within the San Mateo Watershed and therefore would also not address existing sources of fine sediments in Upper Cristianitos Creek and upper Gabino Creek

### 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.*

As noted above for Principle 1, the B-5 Alternative does not take advantage of the infiltration opportunities associated with sandy soils as this alternative proposes development in the sandy terrains of Chiquita and Gobernadora Canyons.

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 in discussed under Principle 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-5 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.*

As noted previously, the B-5 Alternative would not maintain infiltration and groundwater recharge in the main valleys of Chiquita and Gobernadora sub-basins and their wide and sandy tributaries as development is proposed in both the main valley floors and the tributaries.

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

Site design BMPs have been incorporated into the Proposed Project which seek to address recommendations contained in the Draft NCCP/HCP Guidelines regarding the avoidance of slope wetlands within the study area. Those slope wetlands which are avoided by the Proposed Project or those slope wetlands for which mitigation in the form of avoidance is proposed, the recharge area for the slope wetland is also considered as part of the avoidance.

### 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.*

Chapter 5 of the WQMP analyzes potential development impacts and proposed water quality PDFs addressing pollutant loadings associated with specific terrains including TSS phosphorus and nutrients. Although the modeling assumptions use information from the L.A. 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 in-stream data and the Baseline Conditions Report to assess the modeling results.

With regard to the filtration functions associated with the specific terrains of each sub-basin, 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.

*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 [cite]. 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 1-2 year stormwater flows in accordance with County DAMP requirements will 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.

*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.*

Habitat restoration actions that could be implemented by the B-5 alternative (depending on the identification of sufficient funds to support implementation of the Adaptive Management Program) that would benefit downstream areas through increased infiltration of groundwater and reduced soil erosion include:

- coastal sage scrub and native grasslands restoration in the Cristianitos sub-basin
- coastal sage scrub and native grasslands restoration in upper Gabino
- native grasslands restoration on Blind Canyon Mesa

Additionally, arundo removal in San Juan Creek will allow for increased growth of riparian habitat in San Juan Creek with attendant water quality benefits. The potential benefits of these restoration programs are further described in the Adaptive Management Program and associated appendices.

*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.*

Infiltration is discussed under Principles 1 and 2 above. As described above for Principle 3, the WQMP proposes a combined control system to achieve flow duration marching, 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 discussed in Chapter 7 of the WQMP.

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

Although some agricultural uses will continue under the B-5 Alternative, urban land uses will predominate and thus the potential pollutants are more urban in nature and include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides and trash and debris. Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

*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, Chapter 2 of the WQMP identifies "pollutants of concern" that are anticipated or potentially could be generated by the 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. Chapter 4 reviews the combined control system elements, including size, required for each sub-basin where development is proposed. Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

#### Summary of Issues:

The review of B-5 in the subsection above indicates that major issues revolve around:

- (1) Development location conflicts with NCCP Guidelines goals and habitat restoration recommendations for restoring gnatcatcher habitat within the Chiquita Canyon/Chiquadora Ridge major population;
- (2) The adequacy of Habitat Linkages/Wildlife Movement Corridors within the San Juan watershed (see summary discussion above);
- (3) The conflicts between the Habitat Reserve/development bubbles and the protection of the Chiquita Creek and Gobernadora Creek systems;
- (4) Impacts on Verdugo Canyon habitat areas and the generation of coarse sediments important to downstream habitat functions; and
- (5) Economic feasibility of dedicating the entirety of the open space and funding of the AMP.

### **1. B-5 Open Space System**

Alternative B-5 may not meet SRP reserve design tenets and species protection goals and, as a consequence, the amount of land area shown for development in Chiquita Canyon and on Chiquadora Ridge would need to be substantially reduced with a concomitant increase in open space.

## 2. Long-term Habitat Management

Because no new development is proposed for the San Mateo watershed, Alternative B-5 provides significant opportunities for long-term Adaptive Management in the San Mateo watershed, including addressing existing areas of severe erosion in clay soils (the clay pits in Cristianitos Canyon and hillside erosion in upper Gabino). The funding of the forgoing restoration efforts could reduce funding available for other restoration actions (though there would be fewer restoration undertakings for coastal sage scrub, native grasslands and Gobernadora Creek under this Alternative than under any of the other “B” Alternatives). Were funding to be insufficient, it could be particularly significant for implementation of the Invasive Species Control Plan within the San Mateo Creek and San Juan Creek watersheds.” This Alternative would also depend heavily on the Grazing Management Plan. Fire Management in the San Mateo watershed would be facilitated but would be more difficult within the San Juan watershed, particularly within Chiquita Canyon due to the extension of the proposed development bubble for urban uses to areas west of Chiquita Creek.

### **Conclusions Regarding Consistency with Subregional Conservation Goals and Objectives**

Alternative B-5 presents the following issues regarding Consistency with Subregional Conservation Goals and Objectives:

- (a) Development location conflicts with NCCP Guidelines goals and habitat restoration recommendations for restoring gnatcatcher habitat within the Chiquita Canyon/Chiquadora Ridge major population;
- (b) The adequacy of Habitat Linkages/Wildlife Movement Corridors within the San Juan watershed (see summary discussion below);
- (c) The conflicts between the Habitat Reserve/development bubbles and the protection of the Chiquita Creek and Gobernadora Creek systems (see summary discussion below);
- (d) Impacts on Verdugo Canyon habitat areas and the generation of coarse sediments important to downstream habitat functions;
- (e) Potential impacts on arroyo toad habitat and proposed recovery actions in the San Juan Creek area and potential impacts to all of the other listed species, except the thread-leaved brodiaea, previously enumerated.
- (f) The adequacy of Adaptive Management Program funding for vegetation and landform restoration in the San Mateo watershed (landform stabilization and vegetation restoration activities would be required within the Cristianitos Canyon areas of the Cristianitos and lower Gabino sub-basins and in upper Gabino Canyon).
- (g) The feasibility of assembling the proposed Open Space if development areas are reduced to comply with NCCP and SAMP policies, thereby necessitating potentially significant public acquisition funding to complete Open Space dedications based on nexus requirements.



To the extent that the economic return from proposed development under this alternative were insufficient to support the dedication of the specified amount of open space and adequate funding of the adaptive management program, this alternative may not be economically feasible without other sources of funding for the acquisition of dedication rights and the adaptive management program.

## **ALTERNATIVE B-6 NO NEW DISTURBANCE IN THE SAN MATEO WATERSHED**

### **BIOLOGICAL RESOURCES**

#### **OVERVIEW OF ALTERNATIVE B-6**

Overall, the broad conservation goals of this Alternative B-6 are to maximize habitat protection in the Chiquita Canyon/Chiquadora Ridge area and in Verdugo Canyon in furtherance of habitat protection and “connectivity” goals while preserving large blocks of protected habitat within the San Mateo watershed. Given the lesser amount of land proposed for development under Alternative B-6—as compared with the Proposed Project and B-5—development intensities would have to be relatively high in all development areas in order to provide for the ability to construct 14,000 housing units.

With respect to the San Juan watershed, some of the key elements of the Alternative B-6 include committing all of the Chiquita sub-basin, Chiquadora Ridge and the Verdugo sub-basin to open space. Proposed development bubbles in the Gobernadora sub-basin, in the eastern portion south of San Juan Creek (East Ortega) and in the extension of Trampas Canyon to San Juan Creek are the same as in the B-5 Alternative and substantially larger than in the Proposed Project.

With regard to the San Mateo watershed, the conservation goal is to increase the scale of the open space in the lower Gabino Canyon/Blind Canyon area and the upper Cristianitos Canyon area by transferring some development intensity to upper Gabino. Development bubbles in the Cristianitos Canyon (PA 7) and Northrup Grumman/Blind Canyon mesa (PA 8) are substantially reduced over the Proposed Project while development proposed for Cristianitos Meadows (PA 6) under the Proposed Project is eliminated. The development area and type of development proposed for upper Gabino is significantly increased over that proposed in the Proposed Project.

In terms of connectivity in the western portion of the RMV lands, north-south connectivity from the Radio Tower Road area south of San Juan Creek to upper Chiquita Canyon and over to Gobernadora Creek is maximized. Compared with the B-5 Alternative, east-west connectivity along the southern side of San Juan Creek is the same as in the B-5 Alternative and substantially less than under the Proposed Project. Connectivity with Caspers Wilderness Park north and south of San Juan Creek is also emphasized by preserving all of Verdugo Canyon. The preservation of Verdugo Canyon also provides for avian species connectivity, although mammal movement could be more limited than under the Proposed Project proposal for low density and open space uses in upper Gabino (B-5, of course, proposes to commit all of the San Mateo watershed to open space). Connectivity in the lower reach of Gabino Creek would be somewhat enhanced compared with the Proposed Project (the major Gabino Creek riparian corridor and La Paz Canyon are preserved under all Alternatives). Connectivity along Cristianitos Creek is enhanced compared with the Proposed Project but is reduced where upper Cristianitos Canyon connects with the ridgeline draining down to San Juan Creek.

#### **Impact Analysis**

Section 4.9.4 reviews the impacts anticipated to occur as a result of implementation of the Proposed Project. Significant impacts are identified on the basis of the criteria established by the County for this EIR section forth in Section 4.9.4. This section examines the impacts to biological resources anticipated to result of implementation of the project alternatives. The same significance criteria are applied to the analysis of alternatives as the Proposed Project.

## Consistency with Subregional Conservation Planning Goals and Guidelines

As previously reviewed in Section 4.9.4, the NCCP/HCP Working Group developed Draft NCCP/HCP Planning Guidelines (Draft NCCP Guidelines) and Draft Watershed and Sub-basin Planning Principles (Draft Watershed Principles) incorporating and applying the NCCP Conservation Guidelines/Science Advisors Reserve Design Tenets and the SAMP Tenets Prepared by the USACE. These guidelines and principles provide guidance for decision-makers keyed to local biologic, hydrologic and geomorphic conditions. Although considered “works in progress,” by the Wildlife Agencies both the guidelines and principles represent the most current thinking regarding protection, restoration and management priorities for the resources within the study area and for this reason the County is using these in its assessment of the Alternatives reviewed in this section of the GPA/ZC EIR. The guidelines and principles have been subject to public input during public workshops associated with the NCP/HCP and SAMP/MSAA programs and are available for review on the County website.

The Draft NCCP Guidelines and Draft Watershed Principles contain both broad planning principles applicable at the watershed scale and specific planning considerations and planning recommendations applicable to specific sub-basins within the study area. The following sub-sections present consistency analyses at both scales of analysis, starting with the geographically specific sub-basin guidelines and principles.

The analyses presented in the following sub-sections will use the same methodology in assessing the level of consistency of each of the “B” Alternatives with Subregional Conservation Planning Goals and Guidelines.

### 1. Open Space/Habitat Protection

#### B-5 Alternative Consistency with Sub-basin Planning Guidelines and Principles

Section 4.9.4 examines the degree to which the Proposed Project is consistent with the Draft NCCP/HCP Planning Guidelines and Watershed and Sub-basin Planning Principles. This section performs the same consistency analysis for the project alternatives. Similar to the consistency analysis for the Proposed Project, the comparative analysis of alternatives is presented in matrix form. Table M-4 presents a matrix that provides “NCCP/HCP Planning Guidelines Consistency Findings.” Table M-5 presents a matrix that provides the “Watershed and Sub-basin Planning Principles Consistency Findings” using the identical approach described for Table M-4. Because these matrices are extremely detailed, tabular summaries for the two matrices are presented in Table M-6 for the NCCP/HCP Planning Guidelines, Table M-7 for the Watershed Planning Principles, Table M-8 for the Planning Species in relation to the Planning Guidelines, and Table M-9 for the Planning Species in relation to the Watershed Principles. These summary tables are accompanied in the text by narrative summaries of the findings. Table M-10 provides an overall conservation summary for the Planning Species in terms of locations, suitable habitat, *major* and *important populations* and *key locations* in the alternatives. Table M-11 provides a tabular summary of the habitat protection of the alternatives. The concluding section provides a series of analyses of Circulation System Consistency of each alternative for each sub-basin.

#### **NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-6 is 74 percent (111/149 total) consistent with the Planning Guidelines. Modifications would be necessary for Alternative B-6 to achieve consistency with Planning Guideline 27 and therefore falls into the “Could be Consistent” category. Alternative B-6 conflicts with 37 (25 percent) of the Planning Guidelines.

For the “could be consistent” findings, the type of modification that would be necessary for B-6 to be consistent with Guideline 27 is inclusion of culverts or similar type facility and associated fencing in the design of Cristianitos Road in the Chiquita sub-basin and the east-facing slope of Chiquadora Ridge to facilitate ground-dwelling wildlife movement. Upon preliminary review, this modification appears to be feasible in that it involves discrete design decisions regarding Cristianitos Road; however the feasibility of this modification will be examined in greater detail in the EIR/EIS.

For the “not consistent” findings, similar to the B-5 alternative, B-6 has a greater number of inconsistencies than the B-9 and B-4 alternatives. B-6 is largely inconsistent with the Guidelines for protecting resources in the San Juan Watershed sub-basins. B-6 also conflicts with Guidelines for protecting resources in the San Mateo Watershed. Examples of these conflicts are: impacts to Linkage O, impacts to native grasslands, impacts to southwestern pond turtle habitat, conflicts with CSS/VGL restoration recommendations and impacts to gnatcatcher locations.

Similar to B-5, B-6 overall has a medium-low degree of consistency with the Planning Guidelines and the conflicts are significant.

### **Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-6 is 65 percent (26/40 total) consistent with the Planning Principles and 30 percent (12/40 total) not consistent. Modifications to B-6 would be necessary to achieve consistency with Principles 35 and 36 regarding protecting riparian habitats on the south side of Gabino Creek and protecting arroyo toad habitat by maintaining hydrologic processes.

For the “could be consistent” findings, the types of modifications necessary to achieve consistency with Principles 35 and 36 involve specific design considerations to avoid riparian habitat in lower Gabino Creek by Cristianitos Road and managing runoff and associated water quality. Generally impacts to riparian resources can be minimized through careful design and construction; however, it is likely that impacts to riparian resources cannot be entirely avoided as piers to support a bridge over Gabino Creek would have to be placed typically every 150 feet. The feasibility of this modification will be discussed in further detail in the EIR/EIS. The WQMP does identify appropriate NTS facilities and thus this modification is feasible.

For the “not consistent” findings, B-6 is largely not consistent with the Principles for the Gobernadora sub-basin. B-6 also is not consistent with Principles for the Trampas sub-basin. In addition, B-6 is not consistent with Principles for the San Mateo Watershed, particularly in the Gabino sub-basin; for example, development in the headwaters area of upper Gabino and development south of the existing Northrup Grumman facility. As noted above, this is directly related to the Conservation Strategy proposed by the B-6 Alternative.

Overall, the B-6 has a medium-low degree of consistency with the Watershed Principles and the conflicts are significant.

## **2. Planning Species – NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-6 has medium consistency with the planning Guidelines for 27 of the 28 Planning Species (the mud nama was excluded as noted above) relative to the other alternatives. The average Planning Species consistency for Alternative B-5 is 70 percent, with 28 percent not consistent. The average “could be consistent” for the Planning Species is only one percent.

As shown in Table M-6, the consistency percentages for 27 Planning Species range from 0 percent for the Riverside and San Diego fairy shrimp to 100 percent for the golden eagle, chaparral beargrass, and golden eagle. The B-6 achieves varying levels of consistency for the other five listed species.

The B-6 Alternative is 95 percent consistent for the arroyo toad. It is not consistent with Guideline 51, which recommends foraging and estivation habitat within the upland terraces of the floodplain of San Juan Creek (with a particular focus on the south side of the creek). This Guideline is not met because B-6 would not provide for substantial setbacks south of the creek.

The B-6 Alternative is 67 percent consistent and 33 percent not consistent for the California gnatcatcher. The “not consistent” for Guidelines 2, 16, 28, 55, and 68 generally pertain to impacts to habitat linkages and dispersal areas under the B-6 Alternative, including impacts to east-west connectivity between Chiquita Canyon and Gobernadora because of proposed development in Sulphur Canyon (Guidelines 2 and 28); impacts to north-south connectivity in the Chiquita sub-basin south of San Juan Creek (Guideline 16); impacts to the upland habitat linkage components north and south of San Juan Creek (Guideline 55); and impacts to the east-west linkage south of the artificial lake in Trampas Canyon (Guideline 68). B-6 is not consistent with Guideline 66 which recommends protecting *important populations* and coastal sage scrub to the maximum extent possible to maintain resident and dispersal habitat between San Juan Creek and Cristianitos Canyon; B-6 would impact the *important population* Trampas Canyon. Finally, B-6 is not consistent with Guideline 123 which recommends minimizing impacts to gnatcatchers in lower Gabino; B-6 would impact two gnatcatcher sites in lower Gabino.

The B-6 Alternative is 76 percent consistent and 24 percent not consistent for the least Bell's vireo and 20 percent consistent and 80 percent not consistent for the southwestern willow flycatcher. For both the vireo and willow flycatcher, B-6 is not consistent with Guidelines 31, 33, 41, and 49. Guidelines 31, 33 and 41 pertain to protecting the southern willow scrub in GERA (31), the natural meander of Gobernadora Creek above the knickpoint (33), and protecting GERA from the effects of upstream development (41). Guideline 49 recommends restoration in Gobernadora Creek to address historic meander and land use-induced channel incision and erosion originating upstream. Because the B-6 Alternative proposes development in the northern portion of the valley, these Guidelines likely could not be met.

B-6 is 0 percent consistent for the Riverside and San Diego fairy shrimp because it would not protect all vernal pools and their contributing hydrologic resources located along Radio Tower Road.

B-6 is 87 percent consistent and 13 percent not consistent for the thread-leaved brodiaea. B-6 is not consistent on Guidelines 90 and 130, which both refer to protecting the *major population/key location* adjacent to the clay mine pits in the southern portions of Cristianitos and Gabino canyons.

For the non-listed Planning Species, the B-6 Alternative generally has moderate to high consistency across the major species-habitat associations (Table M-6). As examples, for coastal sage scrub species, the B-6 is 70 percent consistent for the cactus wren, 77 percent consistent for the orange-throated whiptail, and 79 percent consistent for the San Diego horned lizard. For grassland species, the B-6 is 64 percent consistent for the grasshopper sparrow and 75 percent consistent for the merlin. For riparian/woodland species, the B-6 is 73 percent consistent for the Cooper's hawk, 67 percent consistent for the white-tailed kite, and 76 percent consistent for the yellow warbler and 80 percent consistent for the yellow breasted chat. For planning area-wide species, the B-6 is 100 percent consistent for the golden eagle, 60 percent consistent for the mountain lion, and 59 percent consistent for the mule deer. Finally, for non-

listed plants the B-6 generally has high consistency with the Guidelines, with chaparral beargrass at 100 percent consistent, Coulter's saltbush at 80 percent consistent, many-stemmed dudleya at 88 percent consistent, salt spring checkerbloom at 100 percent consistent, and southern tarplant at 83 percent consistent.

The B-6 Alternative overall would provide a medium to high level of protection for Planning Species.

### **Planning Species – Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-6 has medium consistency with the Watershed Principles for the ten Planning Species for which they are directly relevant (i.e., aquatic/riparian species) (Table M-7). Overall, B-6 is 57 percent consistent with the Principles, 35 percent not consistent, and eight percent “could be consistent.” The consistency findings have a wide range of 17 percent consistent for the southwestern willow flycatcher to 88 percent consistent for the southwestern pond turtle.

B-6 is 79 percent consistent for the arroyo toad, seven percent “could be consistent,” and 21 percent not consistent. B-6 could be consistent with Principle 36, which recommends protecting populations in lower Gabino Creek by maintaining hydrologic and sediment delivery processes and episodic flow events. B-6 could be consistent with this Principle by design and construction of a substantial bridge span over the creek that avoids toad habitat. In addition, a paved fire evacuation road along Gabino Canyon that could affect streamcourse geomorphology may be required and these potential significant impacts would have to be addressed. B-6 is not consistent with Principles 29 and 33 for the toad. Principle 29 recommends limiting new impervious surfaces in the headwaters of Gabino Canyon to areas that would not adversely affect runoff patterns and Principle 33 recommends focusing development on clay soils in the lower portion of the area to reduce the generation of fine sediments. B-6 would not meet either Principle because it proposes extensive development in the headwaters.

B-6 is 53 percent consistent for the least Bell's vireo, 13 percent “could be consistent,” and 33 percent not consistent. For the southwestern willow flycatcher, B-6 is 17 percent consistent and 83 percent not consistent. B-6 is not consistent for the vireo and willow flycatcher with Principles 9, 10, and 12-14. These Principles all are concerned with protecting Gobernadora Creek and associated riparian and wetland habitats, including protecting natural creek meander (Principle 9), setting back development from the valley floor (Principle 10), creating natural treatment systems (Principle 12), addressing excessive sediment from upstream development (Principle 13), and addressing existing channel incision (Principle 14). Because B-6 proposes development in the valley floor north of GERA, none of these Principles can be achieved. B-6 could be consistent with Principles 35 and 36 for the vireo. Principle 35 recommends protecting significant riparian habitat in lower Gabino Creek and Principle 36 recommends maintaining hydrologic and sediment delivery processes and episodic flow events in this portion of the creek. Construction of a collector road and bridge across Gabino Creek would have to avoid significant riparian habitat and allow for natural hydrologic and sediment transport processes to be consistent with this Principle.

For the non-listed Planning Species, B-6 is not consistent with Principles 9, 10, and 12-14, as described above for the vireo and flycatcher, for the Cooper's hawk, tricolored blackbird, white-tailed kite, yellow warbler and yellow-breasted chat. B-6 could be consistent with Principles 35 and 36, as described above for the vireo, for the Cooper's hawk, white-tailed kite, yellow warbler and yellow-breasted chat. For the spadefoot toad and southwestern pond turtle, B-6 would not be consistent with Principle 29, which recommends limiting new impervious surfaces in the headwaters of Gabino Canyon. For the spadefoot toad, B-6 also would not be

consistent with Principle 33, as described above for the arroyo toad. B-6 could be consistent with Principle 36 for the spadefoot toad, as described above for the vireo.

Overall B-6 has medium consistency with the watershed planning Principles compared to the Proposed Project (B-4), alternatives B-8 and B-9.

### **Circulation Systems Consistency Analysis**

In order to portray the potential impacts of the alternative circulation systems, this section will analyze the circulation systems with regard to the sub-basin guidelines/principles. “Connectivity” considerations are based on the NCCP/HCP Planning Guidelines (General Policy 3.3) and the accompanying “Habitat Linkages and Wildlife Corridors Map and are incorporated explicitly into the Planning Guidelines sub-basin Protection Recommendations. These “connectivity” considerations provide criteria for reviewing potential impacts of the alternative circulation systems. Those portions of the circulation systems located *outside* the “development bubbles” are reviewed for consistency with the specific Guidelines and Principles applicable to each sub-basin. For the portions of the circulation systems located *within* “development bubbles,” the potential impacts already are reflected in the overall delineation of the particular “development bubble” and do not require separate analysis with respect to the project alternatives. Alternative B-5 is analyzed without the FTCS Project.

### **San Juan Creek Watershed**

#### **1. Chiquita Sub-basin**

The review of the different circulation systems reflects three different assumptions: (1) MPAH proposals proposed or identified in conjunction with the different Alternatives; and (2) the circulation elements shown on the existing MPAH (with the exception of the SOCTIIP for the reasons previously noted).

With no development proposed in the Chiquita sub-basin, the B-6 Alternative would likely include the same recommendation to delete the Crown Valley Parkway extension included in the Proposed Project. Due to the absence of development within the Chiquita sub-basin, there would be no internal road affecting Habitat Linkage “E.” The arterial extension crossing over from the Gobernadora “development bubble” would still be required, but due to the increased connectivity within the Chiquita sub-basin under Alternative B-6, would be unlikely to have major connectivity impacts. With a “development bubble” in Gobernadora, the “new Ortega Highway” north of San Juan Creek would involve the same impacts reviewed under the Proposed Project.

Given the size of the “development bubbles” in areas south of San Juan Creek, it is likely that Ortega Highway would continue to be a major roadway rather than a local road as proposed under the Proposed Project (B-4). Consequently, there would no change in existing conditions with respect to wildlife movement and arroyo toad recovery potential along San Juan Creek.

#### **2. Gobernadora Sub-basin**

The B-6 circulation system would have the same impacts as those identified above for the B-5 Alternative, except that the Crown Valley Parkway extension is proposed to be deleted. Consequently, the B-6 circulation system would not be consistent with the sub-basin recommendations.

### **3. Trampas Sub-basin and Central San Juan Sub-basin**

All of the alternatives propose the same arterial crossing of San Juan Creek and thus would have the same physical impacts.

### **4. Verdugo Sub-basin**

Alternative B-6 proposes to upgrade an existing gravel Ranch road to a rural collector road (Verdugo Road) through the portion of the sub-basin to the south of Verdugo Canyon to serve the “development bubble” in this area and the “development bubble” in upper Gabino Canyon. Upgrading the existing Ranch road is not anticipated to result in substantial impacts to riparian habitat and thus the collector road under B-6 would be consistent with the sub-basin recommendations.

## **San Mateo Creek Watershed**

### **1. Cristianitos Sub-basin**

Project Alternative B-6 proposes the same circulation system as the Proposed Project. Cristianitos Road, a north-south road proposed to extend from Avenida Pico through the Cristianitos sub-basin, would avoid the headwater area consistent with the recommendation for this area. All but a small portion of the area proposed for VGL enhancement where the creek branches would be avoided; as a two lane collector road rather than an arterial (in the Cristianitos sub-basin), the amount of area removed from VGL enhancement is relatively small in the context of the proposed overall VGL restoration plan and thus would be consistent with recommendation. East of the creek, the collector would be located in the higher areas away from the creek. Cristianitos Road would avoid direct impacts to the alkali wetlands/creek riparian areas because the creek would be bridged and opportunities for stream stabilization would be preserved. Overall, the B-6 circulation system would be consistent with the sub-basin recommendations.

### **2. Gabino and Blind Canyons Sub-basin**

Alternative B-6 would involve the same issues relating to the collector road connecting Planning Area 7 and Planning Area 8 and the Planning Area 9 fire access road as described previously for the Proposed Project (B-4).

### **3. La Paz Sub-basin**

Project Alternative B-6 does not provide for development within the La Paz sub-basin and therefore would be consistent with the sub-basin recommendations.

### **4. Talega Sub-basin**

B-6 proposes the construction of Cristianitos Road, a north-south road extending from Avenida Pico. Within the Talega sub-basin, Cristianitos Road is proposed as a two-lane collector. Cristianitos Road would not affect dry season and stormwater flows, and thus would not cause any potential conflict with these recommendations. However, because Cristianitos Road would extend from the western edge of Blind Canyon Mesa across Blind Canyon itself in order to access the Northrup Gruman ridge, construction of the road would likely impact some portion of the canyon bottom of Blind Canyon.



## 5. Other Planning Area

Project Alternative B-6 proposes construction of a new north-south road extending from Avenida Pico northward which would require construction of a bridge over Cristianitos Creek. Within the Other Planning Area, Cristianitos Road is proposed as a two-lane collector. Similar to alternative B-9, temporary impacts to Cristianitos Creek resulting from construction of the bridge over Cristianitos Creek would occur, as would permanent impacts associated with the placement of piers in Cristianitos Creek to support the bridge structure. North-south wildlife movement along Cristianitos Creek over the long term would be unaffected by the bridge. Measures to reduce impacts to arroyo toad breeding habitat would be implemented during construction of the bridge, such as toad exclusion fencing, minimal to no construction activity during the breeding season, sediment control measures and biological monitoring. Existing hydrology would be maintained with construction of the bridge. Alternative B-6 would be consistent with the sub-basin recommendations.

### **B-5 Alternative Consistency with Landscape Level SRP Tenets, SAMP Tenets and Watershed Planning Principles**

**B-5 Open Space Features:** Alternative B-6 has been formulated pursuant to a conservation strategy that emphasizes the protection of Chiquita Canyon and Verdugo Canyon in the San Juan watershed and substantial blocks of habitat in the San Mateo Watershed. With regard to the San Juan Creek watershed, Chiquita Canyon is protected in its entirety in order to maximize the protection of occupied gnatcatcher habitat and other resources on Chiquadora Ridge. Verdugo Canyon is 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 Cleveland National Forest and to portions of Gabino Canyon.

With no development in Chiquita Canyon and Verdugo Canyon and the need to address a balance of habitat protection and development opportunities, Alternative B-6 emphasizes preserving large blocks of habitat in the San Mateo watershed rather than attempting to protect the entire watershed as in the case of the B-5 Alternative. Hence, Alternative B-6 would provide for substantial blocks of protected habitat in the San Mateo watershed—but in a different configuration of Open Space and development lands from that proposed under the Proposed Project. In the San Mateo watershed, Alternative B-6 would protect large blocks of habitat by concentrating development in Cristianitos Canyon and on the Northrup Grumman ridge; development proposed in Cristianitos Meadows under the Proposed Project and on Blind Canyon Mesa under the Proposed Project and B-9 Alternatives would be eliminated and open space areas would be created (i.e., in Proposed Project Planning Areas 6, 7B and 8A and 8C, along with some reduction in the size of the Proposed Project Cristianitos Canyon and TRW development envelopes in Planning Areas 7A and 8B). A conventional development bubble (in contrast with the estates housing proposed under the Proposed Project) is proposed in upper Gabino to help provide for an overall balance of open space and development in the San Mateo watershed.

With regard to large blocks of open space, a major block of habitat—totaling 7,280 acres—extends 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. A second major block of open space, totaling 9,235 acres, extends from Verdugo Canyon through middle and lower Gabino Canyon, La Paz Canyon, the eastern portion of the Northrup Grumman Ridge and upper and lower Cristianitos Canyon (including the Donna O'Neill Land Conservancy to Talega Creek and the boundary with Camp Pendleton).

## B-6 Alternative Consistency with the SRP/Science Advisors Tenets of Reserve Design

- **Tenet 1: Conserve target species throughout the planning area**

As described above for the B-4 Alternative, 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 was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives. For the listed Planning Species, Alternative B-6 has variable consistency with the Draft NCCP/HCP Planning Guidelines (see discussion of Planning Species above and consistency analysis in Table M-10). B-6 generally protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo and southwestern willow flycatcher. However, relevant to the arroyo toad, development is proposed south of San Juan Creek adjacent to the *major population/key location* without substantial setbacks from the creek. On the other hand, in contrast with B-5, Verdugo Canyon would not be developed and sources of coarse sediments essential to maintaining suitable breeding habitat in San Juan Creek would be maintained. For the gnatcatcher, overall protection would be 86 percent of locations and 85 percent of coastal sage scrub habitat, including 94 percent of locations and 96 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, but upstream development would limit the ability to adaptively manage the riparian habitat because implementation of upstream habitat restoration would not occur and excessive surface and subsurface flows would contribute additional infiltration to the groundwater system. The San Diego and Riverside fairy shrimp vernal pools in the Trampas Canyon development area (PA 5) would be impacted. For brodiaea the *major population/key location* on Chiquadora Ridge would be protected. However, the Lower Cristianitos/Lower Gabino Canyon *major population/key location* supporting 6,100 flowering stalks would be wholly impacted. Overall, B-5 would not adequately protect arroyo toad, least Bell’s vireo, southwestern willow flycatcher, Riverside and San Diego fairy shrimp, and thread-leaved brodiaea.

B-6 provides medium protection for the unlisted Planning Species (see discussion of Planning Species above and consistency analysis in Table M-10). *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 afforded to *key locations* of grasshopper sparrow, San Diego horned lizard, Coulter’s saltbush, many-stemmed dudleya, salt spring checkerbloom, and southern tarplant. For the tricolored blackbird, the *important population/key location* in Gobernadora likely would be extirpated by development in the valley floor. For the orange-throated whiptail, all 59 locations in the Chiquita Canyon/Wagon Wheel Canyon *key location* would be protected, but only 39 percent of the Chiquadora Ridge and 19 percent of the Gobernadora *important populations/key locations* would be protected. For yellow warbler and yellow breasted chat, all *important populations* would be protected, but upstream development in Gobernadora would limit the ability to adaptively manage the riparian habitat in GERA, as described above. *Important populations* of western spadefoot toad and southwestern pond turtle generally would be protected.

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 and 86 percent of historic nest sites for the Cooper’s hawk and kite, as well as more than 83 percent of suitable habitat for the three species, would be protected under the B-6 Alternative. For the golden eagle and merlin approximately 67 percent

of foraging habitat would be protected and both species likely would persist in the subregion. The Habitat Reserve would include a key foraging area for the merlin in Middle and Lower Chiquita Canyon. Under B-6, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

- **Tenet 2: Larger Reserves are better.**

When combined with already protected open space in the Subregion, the B-6 Alternative is comprised of three major habitat blocks: the Eastern block (23,213 acres), the Western block (8,774 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total more than 33,800 acres and account for about 77 percent of the B-6 Habitat Reserve. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest and Camp Pendleton.

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

All three of the large habitat blocks described above are functionally interconnected. However, two of the linkages are constrained to some degree that is in conflict with the Draft NCCP/HCP Planning Guidelines.

- The connection to Caspers Wilderness Park and the Eastern block via Linkage I is constrained by development in the valley floor of Gobernadora, which is inconsistent with the recommendation for protection of a 2,000-2,500 feet wide corridor between Coto de Caza and development in Gobernadora (PA 3).
- Development north and south of San Juan Creek result in a constriction of the linkages along San Juan Creek (Linkage J) and the north-south linkage between Trampas Canyon and the development area south Ortega Highway (extension of Linkage J).

- **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 M-16. As shown in Table M-16, the vast majority of the three habitat blocks that would be protected as Open Space under the Proposed Project 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. For example, grassland, agriculture, and coastal sage scrub make up approximately 86 percent of the Western habitat block while chaparral is a predominant habitat in 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 M-16, 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. 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 block and the lowest percentages in the Eastern block.

**TABLE M-16  
MAJOR VEGETATION COMMUNITIES WITHIN  
B-6 ALTERNATIVE HABITAT BLOCKS**

Vegetation Community/Land Cover Type	Habitat Block Acres <sup>1</sup>				
	Arroyo Trabuco	Western		Eastern	
	Total	Total	RMV	Total	RMV
Coastal Sage Scrub	313	3,045	1,569	10,755	4,034
Chaparral	121	310	152	5,197	2,762
Grassland	514	2,401	1,024	3,422	1,881
Woodland & Forest	141	104	60	1,027	190
Riparian	613	567	39	2,571	996
Other Habitats/Land Covers	30	2,164 <sup>2</sup>	1,639	26	11
Developed/Disturbed (% of Total in Block)	100 (5%)	183 (2%)	84 (2%)	215 (1%)	79 (1%)
<b>Total in Block</b>	<b>1,832</b>	<b>8,774</b>	<b>4,559</b>	<b>23,213</b>	<b>9,952</b>

<sup>1</sup> 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.  
<sup>2</sup> Agriculture accounts for 2,090 acres 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

- **Tenet 5: Reserves should be biologically diverse.**

Table M-17 shows the amount and percentage of the major vegetation communities protected in the B-6 Open Space, both in the overall B-6 Open Space and broken down by watersheds. Overall, the B-6 protects the large majority of the major vegetation communities. Protection ranges from a low of 66 percent for grassland to a high of 87 percent for chaparral. Other than grassland, the lowest overall conservation percentage of the major vegetation communities is 81 percent for woodland and forest.

In contrast to the B-5 Alternative, and similar to the Proposed Project, Alternative B-6 takes a more balanced approach to habitat protection in the San Juan and San Mateo watersheds. For example, 87 percent of the coastal sage scrub in the San Juan Watershed is protected compared to 85 percent in the San Mateo Watershed. Likewise, for grassland protection is 68 percent in the San Juan Watershed and 69 percent in the San Mateo watershed. The largest discrepancy between the San Juan and San Mateo watersheds is the protection of chaparral. While the overall protection is 87 percent, 83 percent of chaparral in the San Juan Watershed is protected, compared to 95 percent in the San Mateo 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 M-17. Coastal sage scrub and grassland exhibit relatively balanced protection in relation to their occurrence in the planning area, with coastal sage scrub only one percent over-represented and grassland only two percent under-represented in the San Juan Watershed. Chaparral is three percent under-represented in the San Juan Watershed and four percent over-represented in the San Mateo Watershed. Woodland and forest and riparian are slightly over-represented in the San Mateo Watershed.

**TABLE M-17  
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE  
COMBINED B-6 OPEN SPACE AND ALREADY PROTECTED OPEN SPACE  
WITHIN WATERSHEDS**

Vegetation Community	Planning Area		B-6 Alternative		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	19,724		16,957 (86%)		
San Juan Creek	15,056	76%	13,148 (87%)	77%	+1%
San Mateo Creek	3,772	19%	3,216 (85%)	19%	0%
Other Watersheds <sup>2</sup>	896	5%	593 (66%)	4%	-1%
Chaparral	7,333		6,412 (87%)		
San Juan Creek	4,219	58%	3,508 (83%)	55%	-3%
San Mateo Creek	2,748	37%	2,615 (95%)	41%	+4%
Other Watersheds	366	5%	289 (79%)	4%	-3%
Grassland	14,979		9,970 (66%)		
San Juan Creek	8,215	55%	5,606 (68%)	56%	-2%
San Mateo Creek	3,093	21%	2,144 (69%)	22%	+1%
Other Watersheds	3,671	24%	2,220 (60%)	22%	-2%
Woodland & Forest	1,824		1,474 (81%)		
San Juan Creek	1,537	84%	1,223 (79%)	83%	-1%
San Mateo Creek	257	14%	232 (90%)	16%	+2%
Other Watersheds	30	2%	19 (63%)	1%	-1%
Riparian	5,213		4,378 (84%)		
San Juan Creek	3,967	76%	3,302 (83%)	75%	-1%
San Mateo Creek	1,024	20%	961 (94%)	22%	+2%
Other Watersheds	222	4%	115 (52%)	5%	-1%
<sup>1</sup> Acreages exclude Existing Use areas. <sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas					
Source: Dudek 2004					

Table M-18 compares the representation of the major vegetation communities in the B-6 Alternative with their representation in the planning area as a whole. Coastal sage scrub is over-represented by three percent in the B-6 Open Space compared to grassland, which is under-represented by five percent. The other major vegetation communities are represented in the B-6 Open Space in the essentially the same proportion as they occur in the planning area.

When the comparison is applied to watersheds, it is clear that the source of the over-representation of coastal sage is in the San Juan Watershed, which reflects the protection of the sage scrub in the Chiquita Canyon sub-basin. The under-representation of grassland in the San Juan Watershed is the result of impacts in the Gobernadora sub-basin relative to impacts to grasslands 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-6 provides a balanced representation of the existing distribution of the major vegetation communities in the different watersheds.

**TABLE M-18  
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES  
UNDER THE COMBINED B-6 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE**

Vegetation Community	Planning Area		B-6 Alternative		
	Planning Area Acres <sup>1</sup>	% of Planning Area	Acres (% of total)	% of B-6 Open Space and Already Protected Open Space	% Deviation from Planning Area Distribution
Coastal Sage Scrub	19,724	40%	16,957 (86%)	43%	+3%
San Juan Creek	15,056	31%	13,148 (87%)	34%	+3%
San Mateo Creek	3,772	8%	3,216 (85%)	8%	0%
Other Watersheds <sup>2</sup>	896	1%	593 (66%)	1%	0%
Chaparral	7,333	15%	6,412 (87%)	16%	+1%
San Juan Creek	4,219	9%	3,508 (83%)	9%	0%
San Mateo Creek	2,748	5%	2,615 (95%)	7%	+2%
Other Watersheds	366	1%	289 (79%)	<1%	0%
Grassland	14,979	30%	9,970 (66%)	25%	-5%
San Juan Creek	8,215	17%	5,606 (68%)	14%	-3%
San Mateo Creek	3,093	6%	2,144 (69%)	6%	0%
Other Watersheds	3,671	7%	2,220 (60%)	6%	-1%
Woodland & Forest	1,824	4%	1,474 (81%)	4%	0%
San Juan Creek	1,537	3%	1,223 (79%)	3%	0%
San Mateo Creek	257	1%	232 (90%)	1%	0%
Other Watersheds	30	<1%	19 (63%)	<1%	0%
Riparian	5,213	11%	4,378 (84%)	11%	0%
San Juan Creek	3,967	8%	3,302 (83%)	8%	0%
San Mateo Creek	1,024	2%	961 (94%)	2%	0%
Other Watersheds	222	<1%	115 (52%)	1%	0%

<sup>1</sup>. Acreages exclude Existing Use areas.  
<sup>2</sup>. Other Watersheds include the San Clemente and Aliso Hydrological Areas

Source: Dudek 2004

Table M-19 compares the elevational distribution of the major vegetation communities in the planning area and the B-6 Open Space. As with the Proposed Project and B-5 alternatives described above, the protection percentages increase with elevation for all the major vegetation communities. A comparison of the “% Within Vegetation Community” columns for the planning area and B-6 Open Space shows that the elevational distributions of the vegetation communities in the B-6 Open Space generally track the existing distributions in the planning area, but with a slight bias toward under-representations of the upland vegetation communities at less than 800 feet. For example, coastal sage scrub is under-represented by five percent under 800 feet and over-represented by four percent above 800 feet. The protection of riparian vegetation shows relatively little elevational bias. The B-6 Open Space has moderate under-representation of grassland at the lowest elevation range (<400 ft), with five percent less in the Open Space (22 percent) compared to existing conditions (27 percent). This under-representation is the same as for alternatives B-8 and B-9, and less than B-5, which is six percent under-represented at less than 400 feet.

**TABLE M-19  
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE  
B-6 ALTERNATIVE OPEN SPACE AND ALREADY PROTECTED OPEN  
SPACE COMPARED TO PLANNING AREA**

Vegetation Community	Elevation Range (ft.)	Planning Area		B-6 Alternative		
		Planning Area Acres <sup>1</sup>	% Within Vegetation Community	Open Space Acres (% of Total)	% Within Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	0-400	1,414	7%	887	5%	-2%
	401-800	9,825	50%	8,050	47%	-3%
	801-1,200	6,562	33%	6,145	36%	+3%
	>1,200	1,923	10%	1,875	11%	+1%
<b>Total</b>		<b>19,724</b>		<b>16,957</b>		
Chaparral	0-400	166	2%	99	2%	0%
	401-800	4,640	63%	3,853	60%	-3%
	801-1,200	2,010	27%	1,946	30%	+3%
	>1,200	518	7%	514	8%	+1%
<b>Total</b>		<b>7,334</b>		<b>6,412</b>		
Grassland	0-400	4,005	27%	2,174	22%	-5%
	401-800	8,121	54%	5,609	56%	+2%
	801-1,200	2,551	17%	1,900	19%	+2%
	>1,200	299	2%	287	3%	+1%
<b>Total</b>		<b>14,976</b>		<b>9,970</b>		
Woodland & Forest	0-400	174	10%	95	6%	-4%
	401-800	1,005	55%	776	53%	-2%
	801-1,200	509	28%	468	32%	+4%
	>1,200	135	7%	135	9%	+2%
<b>Total</b>		<b>1,823</b>		<b>1,474</b>		
Riparian	0-400	1,289	25%	1,043	24%	-1%
	401-800	3,088	59%	2,575	59%	0%
	801-1,200	730	14%	656	15%	+1%
	>1,200	106	2%	104	2%	0%
<b>Total</b>		<b>5,213</b>		<b>4,378</b>		

<sup>1</sup> Acreages exclude Existing Use areas.  
Source: Dudek 2004

- **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-6 proposed circulation system compliance with Draft NCCP/HCP Planning Guidelines General Policy 4 (roads and infrastructure to be located outside the Habitat Reserve to the maximum extent feasible) is reviewed in the sub-basin consistency analysis. 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 NCCP/HCP 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 protected in their entirety. Compared with Gobernadora Canyon, the Chiquita Canyon sub-basin needs relatively little active management in order to maintain its natural hydrologic and geomorphic 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 for Chiquita Canyon could be attained most directly through permanent protection for the sub-basin. 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-6 proposes to protect the Sulphur Canyon tributary to Gobernadora Creek but would not allow for the restoration of the stream meander as proposed in the Gobernadora Creek Restoration Plan; additionally, it is not clear whether the development configuration for the Gobernadora sub-basin area would allow for restoration efforts addressing excessive surface water runoff from existing upstream development while proposed B-6 development could contribute further surface and subsurface flows impacting important habitat downstream below the knickpoint.

**San Mateo Watershed** – In the San Mateo watershed, the upper portion of the Cristianitos Canyon sub-basin is protected in its entirety, complementing the prior protection of the western portion of the sub-basin through the Donna O’Neill Conservancy. Middle Gabino Canyon and most of lower Gabino Canyon are preserved, thus 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. Extensive development is allowed in upper Gabino Canyon in the headwaters of the creek system and is contrary to the SAMP tenets and sub-basin recommendations set forth in the Watershed Principles (Chapter 5); any conventional grading type of development in upper Gabino Canyon would require careful planning due to the erosive clay soils in the upper canyon.

In both the Cristianitos Canyon and the upper Gabino Canyon proposed development bubbles, future development activities would be used to correct existing erosion in clay soils, particularly 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 (in contrast, under Alternative B-5. 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 correspondingly 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 proposed pursuant to the Adaptive Management Program would also help reduce the generation of fine sediments.

### **B-6 Consistency with SAMP Tenets**

#### SAMP Tenet 1: No net loss of acreage and functions of waters of the U.S./State

As reviewed under the Watershed Principles functions, Alternative B-6 has been designed to protect the major terrains/hydrology functions of the planning areas, as well as the major riparian/wetlands systems; one possible exception is the development bubble in the headwaters of upper Gabino Canyon but potential impacts could be offset by correcting existing severe



erosion problems and by employing stormwater flow BMPs. With regard to maintaining “net acreage” of waters of the U.S./State, Alternative B-6 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 due to development within the development bubbles.

SAMP Tenet 2: Maintain/restore riparian ecosystem integrity

Given its focus on protecting and, where feasible and beneficial, restoring each of the major canyon systems as well as the mainstem creeks, Alternative B-6 addresses this tenet within all of the major creek systems except Gobernadora Creek. With regard to the latter, the inclusion of valley floor areas within the development bubble would limit restoration of the stream meander and could exacerbate excessive surface and subsurface flows to riparian habitat downstream of the knickpoint. Given the habitat significance of Gobernadora Creek, this inconsistency is significant.

SAMP Tenet 3: Protect headwaters

Except for upper Gabino and Trampas Canyon, each of the headwaters areas not already urbanized is protected and/or restored. Significant enhancement/restoration is proposed for upper Cristianitos Creek and upper Gabino Canyon. Although substantial development is proposed within the headwaters of Gabino Creek, a significant portion of the headwaters is subject to existing erosion which could be corrected in conjunction with development. The headwaters area of Trampas Creek is proposed for development but this area has previously been significantly altered due to existing mining operations and development would include BMPs for stormwater flows.

SAMP Tenet 4: Maintain/protect/restore riparian corridors

All major riparian corridors are proposed to be protected. With the exception of impacts on the proposed restoration of the stream meander between the lower end of Coto de Caza and the knickpoint, Alternative B-6 is consistent with the riparian/vegetation restoration proposals benefitting watershed functions that are set forth in the Adaptive Management Program.

SAMP Tenet 5: Maintain/and or/restore floodplain connection

Alternative B-6 would maintain all existing areas of floodplain connection. However, Alternative B-6 is not consistent with the Adaptive Management Program proposal to restore 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., for Chiquita Canyon at the “Narrows” and lower Gobernadora Creek below the knickpoint, Alternative B-6 does not propose any actions that would be contrary to such processes.

SAMP Tenet 6: Maintain and/or restore sediment sources and transport equilibrium

Consistent with the Watershed Planning Principles, Alternative B-6 would protect all of the significant sources of coarse sediment in order to assure the continued generation of such sediments important for riparian/wetlands habitat systems. Further, Alternative B-6 proposes to 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. Alternative B-6 is consistent with all of the vegetation restoration proposals for areas with clay soils, except upper Gabino Canyon; in Upper Gabino Canyon, Alternative B-6 proposes development activities that displace Adaptive Management Program restoration

proposals, but in these areas proposed development would result in the stabilization and/or elimination of sources of fine sediments thereby furthering the goal of reducing the generation of fine sediments.

SAMP Tenet 7: Maintain adequate buffer for the protection of riparian corridors

All major riparian corridors would be adequately buffered from development bubbles except Gobernadora Creek between Coto de Caza and the knickpoint. Although development is proposed on the south side of San Juan Creek through much of the RMV property, the creek itself is very wide and all of the 100 year floodplain is proposed to be protected.

SAMP Tenet 8: Protect riparian areas and associated habitats of listed and sensitive species

In general, riparian areas associated with listed species and other planning species are protected. However, setback from the edge of the San Juan Creek floodplain comparable to that proposed for the B-9 Alternative would be required in areas adjoining the *key location* of arroyo toads extending down from the confluence of Bell Canyon and San Juan Creek; a setback would also be required for the proposed Trampas development bubble to conform with arroyo toad recovery actions. For these reasons, Alternative B-6 is not consistent with this tenet. With regard to protecting the riparian habitats and associated areas of non-listed sensitive species, protection levels would be comparable to the Proposed Project.

**B-6 Consistency with Baseline Conditions Watershed Planning Principles**

Geomorphology/Terrains

Principle : 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.*

The B-6 Alternative avoids all development in the Chiquita sub-basin but does allow development on the valley floor and in some side canyons of the Gobernadora sub-basin.

**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-6 would not be able to meet the policy for Gobernadora Canyon.

**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 B-6 Alternative proposes to remedy existing erosion in the Cristianitos and Gabino sub-basins in conjunction with development.

**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 Adaptive Management Program proposes the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. Table M-4 addresses the consistency of the B-6 Alternative with the restoration recommendations of the Adaptive Management Program.

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

Figure 6 of the Watershed Planning Principles depicts the locations of crystalline terrains. Alternative B-6 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-6 Alternative with the sub-basin watershed principles is reviewed in Table M-5. 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 in qualitative terms for the B-6 Alternative; Chapter 4 of the WQMP proposes Site Planning and Treatment/Flow Control BMPs that specifically address each of the sub-basin Planning Considerations.

### 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)*

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 U.S. 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).

*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.*

As reviewed in Chapter 3 of the WQMP:

"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 Canada Chiquita Sub-basin was divided into 18 catchments."

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; . . . . (5) changes in the infiltration of surface/soil water to groundwater [sub-part (4) involving "potential changes in sediment supply" is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]*

Each of the four elements of Principle 3 cited above is addressed by the WQMP and discussed extensively for the Proposed Project. As noted previously, the WQMP analyses have been prepared for the B-4 and B-9 Alternatives, with qualitative analyses for the other B Alternatives undertaken based on the B-4 and B-9 quantitative analyses. Chapter 7 of the WQMP addresses findings of significance for the "B" Alternatives analyzed qualitatively.

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 is 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.*

To address County Flood Control planning and management considerations, a HEC-1 analysis has been 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 compared with 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 will 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 are 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 will 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 will be provided for at the area plan approval stage through an Addendum or other appropriate CEQA review.

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.*

Chapter 4 of 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 (see discussion below) has been differentiated from localized processes influenced by specific land uses. This WQMP analysis is discussed more extensively for the Proposed Project.

Chapter 5 of 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 described in Chapter 4. The cumulative impacts analysis in Chapter 8 of the WQMP 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 Rancho Mission Viejo property planning area and downstream of the planning area.

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

As reviewed previously in the responses to 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 under three climatic scenarios (All Years, Dry Years and Wet Years) under pre-development conditions and post-development conditions with PDFs.

*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 partially considered and incorporated into the design of Alternative B-6. B-6 does not avoid Gobernadora and Gabino channels and geomorphically-active floodplain surfaces.

### 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-6 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-6 does or does not concentrates development in clayey trains, with the effect of reducing yields of fine sediments in 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-6 avoids all significant sources of coarse sediments except for the sandy soils above the knickpoint in Gobernadora Canyon. 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 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-6 avoids all significant sources of coarse sediments except for the sandy soils above the knickpoint in Gobernadora Canyon. 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 Table M-5 analyzes the consistency of the B-6 with 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-6.

*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. Chapters 4 and 5 of the WQMP review strategies for the B-4 and B-9 Alternatives directed toward achieving “flow duration matching” under the post-development “water balance” scenarios under average, wet and dry cycle rainfall conditions, which strategies are designed to protect stream geomorphology and avoid generating new sources of erosion.

*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-6 avoids all significant sources of coarse sediments except for the sandy soils above the knickpoint in Gobernadora Canyon and through development proposed in Cristianitos Canyon would address the production of fine sediments.

### 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.*

As noted above for Principle 1, B-6 does take advantage of the infiltration opportunities associated with sandy soils in Chiquita, however does not do so in Gobernadora Canyon where development is proposed in the sandy soils.

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 Principle 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-5 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.*

As noted previously, the B-6 Alternative would not maintain infiltration and groundwater recharge in the main valley of Gobernadora sub-basin and its wide and sandy tributaries as development is proposed in both the main valley floor and the tributaries.

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

Site design BMPs have been incorporated into the Proposed Project which seek to address recommendations contained in the Draft NCCP/HCP Guidelines regarding the avoidance of slope wetlands within the study area. Those slope wetlands which are avoided by B-6 or those slope wetlands for which mitigation in the form of avoidance is proposed, the recharge area for the slope wetland is also considered as part of the avoidance.

### 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.*

Chapter 5 of the WQMP analyzes potential development impacts and proposed water quality PDFs addressing pollutant loadings associated with specific terrains including TSS phosphorus and nutrients. Although the modeling assumptions use information from the L.A. 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 in-stream data and the Baseline Conditions Report to assess the modeling results.

With regard to the filtration functions associated with the specific terrains of each sub-basin, 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.

*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 [cite]. 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 one to two year stormwater flows in accordance with County DAMP requirements will receive water quality treatment prior to the discharge of stormwater runoff into native 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.

*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.*

Habitat restoration that benefits downstream areas through increased infiltration of groundwater and reduced soil erosion include:

- coastal sage scrub restoration in the Chiquita sub-basin
- coastal sage scrub/grasslands restoration in Sulphur Canyon
- coastal sage scrub and native grasslands restoration in the Cristianitos sub-basin
- native grasslands restoration on Blind Canyon Mesa

Additionally, arundo removal in San Juan Creek will allow for increased growth of riparian habitat in San Juan Creek with attendant water quality benefits. The potential benefits of these restoration programs are further described in the Adaptive Management Program and associated appendices.

*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.*

Infiltration is discussed under Principles 1 and 2 above. As described above for Principle 3, the WQMP proposes a combined control system to achieve flow duration marching, 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 discussed in Chapter 7 of the WQMP.

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

Although some agricultural uses will continue under the B-6 Alternative, urban land uses will predominate and thus the potential pollutants are more urban in nature and include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides and trash and debris.

Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

*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, Chapter 2 of the WQMP identifies "pollutants of concern" that are anticipated or potentially could be generated by the 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. Chapter 4 reviews the combined control system elements, including size, required for each sub-basin where development is proposed. Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

### **Summary of Issues:**

#### **1. B-6 Open Space System**

Except for development along the valley floor of Gobernadora Creek, in upper Gabino and development on the south side of San Juan Creek in the Trampas Canyon area, the Alternative B-6 proposed Open Space meets broad-scale NCCP and SAMP guidelines.

#### **2. Long-term Habitat Management**

Regarding Adaptive Management Alternative, B-6 is consistent with all of the major elements of the Adaptive Management Program except the Gobernadora Creek restoration plan and the upper Gabino coastal sage scrub/grasslands restoration area. Alternative B-6 is consistent with and helps carry out the comprehensive Invasive Species Control. Alternative B-6 proposes to protect all of the coastal sage scrub restoration areas in Chiquita Canyon. Within the Gobernadora sub-basin, the Sulphur Canyon and associated coastal sage scrub restoration areas are protected, but the area proposed for restoration of the creek meander is not protected. Valley grasslands restoration and enhancement areas proposed in the NCCP Guidelines for Narrow Canyon (within the Chiquita sub-basin), upper Cristianitos Canyon and Blind Canyon mesa would be protected. The coastal sage scrub/valley grasslands restoration/enhancement areas in upper Gabino Canyon would likely be precluded by development proposed under Alternative B-6. Alternative B-6 is consistent with the draft Grazing Management Plan and Fire Management Plan.

### **Conclusions Regarding Consistency with Subregional Conservation Goals and Objectives**

Alternative B-6 presents the following issues regarding Consistency with Subregional Conservation Goals and Objectives:

- a) Impacts on thread-leaved brodiaea;
- b) Impacts on vernal pool habitat of the Riverside and San Diego fairy shrimp in proximity to Radio Tower Road;
- c) The potential inability to implement all of the Gobernadora Creek restoration actions protecting the least Bell's vireo and flycatcher populations;
- d) The extent of development in upper Gabino potentially impacting Gabino Creek and precluding Adaptive Management proposals for coastal sage scrub/native grasslands enhancement and restoration;
- e) The extent of development along the south side of San Juan Creek adjacent to Trampas Canyon;
- f) The adequacy of the linkage between upper Cristianitos and San Juan Creek; and
- g) Reductions in development areas would be required for purposes of assuring consistency with the NCCP Guidelines and Watershed Principles.

To the extent that the economic return from proposed development under this alternative were insufficient to support the dedication of the specified amount of open space and adequate funding of the adaptive management program, this alternative may not be economically feasible without other sources of funding for the acquisition of dedication rights and the adaptive management program.

**ALTERNATIVE B-8  
NO DEVELOPMENT IN CHIQUITA CANYON AND SAN MATEO WATERSHED**

**BIOLOGICAL RESOURCES**

**OVERVIEW OF B-8**

In comparison with the B-4, B-5, B-6, B-9 and B-10 Alternatives, the B-8 Alternative proposes to maximize the open space on RMV lands. Alternative B-8 identifies Chiquita Canyon, Verdugo Canyon and all of the RMV portion of the San Mateo watershed as open space. All of the habitat linkages and wildlife movement corridors identified in the Draft NCCP/HCP Guidelines would be protected. Except for impacts to gnatcatchers, many-stemmed dudleya and cactus wrens within the proposed Gobernadora development bubble, only limited impacts would occur to NCCP/HCP planning species. The B-8 Alternative would provide two development bubbles in areas already substantially altered by past and present resource utilization activities and a third smaller development bubble adjacent to existing development.

By reducing substantially the size of the development bubbles (relative to the other four “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 with 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 the 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 acquisition alternative.

**Impact Analysis**

Section 4.9.4 reviews the impacts anticipated to occur as a result of implementation of the Proposed Project. Significant impacts are identified on the basis of the criteria established by the County for this EIR section forth in Section 4.9.4. This section examines the impacts to biological resources anticipated to result of implementation of the project alternatives. The same significance criteria are applied to the analysis of alternatives as the Proposed Project.

**Consistency with Subregional Conservation Planning Goals and Guidelines**

As previously reviewed in Section 4.9.4, the NCCP/HCP Working Group developed Draft NCCP/HCP Planning Guidelines (Draft NCCP Guidelines) and Draft Watershed and Sub-basin Planning Principles (Draft Watershed Principles) incorporating and applying the NCCP Conservation Guidelines/Science Advisors Reserve Design Tenets and the SAMP Tenets Prepared by the USACE. These guidelines and principles provide guidance for decision-makers keyed to local biologic, hydrologic and geomorphic conditions. Although considered “works in progress,” by the Wildlife Agencies both the guidelines and principles represent the most current thinking regarding protection, restoration and management priorities for the resources within the study area and for this reason the County is using these in its assessment of the Alternatives reviewed in this section of the GPA/ZC EIR. The guidelines and principles have been subject to public input during public workshops associated with the NCP/HCP and SAMP/MSAA programs and are available for review on the County website.

The Draft NCCP Guidelines and Draft Watershed Principles contain both broad planning principles applicable at the watershed scale and specific planning considerations and planning recommendations applicable to specific sub-basins within the study area. The following sub-sections present consistency analyses at both scales of analysis, starting with the geographically specific sub-basin guidelines and principles.

The analyses presented in the following sub-sections will use the same methodology in assessing the level of consistency of each of the “B” Alternatives with Subregional Conservation Planning Goals and Guidelines.

## 1. Open Space/Habitat Protection

### **B-5 Alternative Consistency with Sub-basin Planning Guidelines and Principles**

Section 4.9.4 examines the degree to which the Proposed Project is consistent with the Draft NCCP/HCP Planning Guidelines and Watershed and Sub-basin Planning Principles. This section performs the same consistency analysis for the project alternatives. Similar to the consistency analysis for the Proposed Project, the comparative analysis of alternatives is presented in matrix form. Table M-4 presents a matrix that provides “NCCP/HCP Planning Guidelines Consistency Findings.” Table M-5 presents a matrix that provides the “Watershed and Sub-basin Planning Principles Consistency Findings” using the identical approach described for Table M-4. Because these matrices are extremely detailed, tabular summaries for the two matrices are presented in Table M-6 for the NCCP/HCP Planning Guidelines, Table M-7 for the Watershed Planning Principles, Table M-8 for the Planning Species in relation to the Planning Guidelines, and Table M-9 for the Planning Species in relation to the Watershed Principles. These summary tables are accompanied in the text by narrative summaries of the findings. Table M-10 provides an overall conservation summary for the Planning Species in terms of locations, suitable habitat, *major* and *important populations* and *key locations* in the alternatives. Table M-11 provides a tabular summary of the habitat protection of the alternatives. The concluding section provides a series of analyses of Circulation System Consistency of each alternative for each sub-basin.

#### **NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-8 is 72 percent (107/149 total) consistent with the Planning Guidelines. Modifications would be necessary to address 39 (26 percent) Guidelines. B-8 conflicts with 3 (2 percent) Guidelines.

For the “could be consistent” findings, the types of modifications and considerations that would be necessary include:

1. Inclusion of culverts or similar type facility and associated fencing in the design of Cristianitos Road in the Chiquita sub-basin and the east-facing slope of Chiquadora Ridge to facilitate ground dwelling-wildlife movement; and
2. A determination as to the availability of funding to support implementation of multiple elements of the Adaptive Management Program.

Upon preliminary review, modification “1” appears to be feasible in that it involves discrete design decisions regarding Cristianitos Road. With regard to available funding, B-8 primarily is an alternative developed by the environmental community directed towards large-scale public acquisition of RMV lands in combination with very limited development in specified areas. The availability of funds for implementation of the Adaptive Management Program as a consequence of the relatively limited development areas is uncertain. With correspondingly fewer residential

units generating annual Adaptive Management Program funds and the limited regulatory “nexus” potentially resulting in lower fees per unit, the annual management fees are not determinable at this time, and therefore funding the Adaptive Management Program is not considered feasible at this time. The inability to predict funding is significant.

For the “not consistent” findings, Alternative B-8 conflicts with Principle 30 regarding minimizing impacts to native grasslands in the Gobernadora sub-basin, Principle 54 regarding protecting foraging habitat for raptors in the Central San Juan subunit and Principle 68 regarding wildlife movement through Linkage K. Alternative B-8 will conserve 10,987 acres or 73 percent of grassland habitat. Conservation of raptor nesting locations is approximately 91 percent and foraging habitat varies from 74 percent of grassland (foraging habitat for golden eagle and merlin) to 87 percent riparian/woodland (foraging habitat for Cooper’s hawk). The constraint of Linkage K is common to all alternatives. The Planning Guideline conflicts associated with Alternative B-8 are not significant.

## **2. Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-8 is 73 percent (29/40 total) consistent with the Watershed Principles and two percent not consistent. Modifications would be necessary to the B-8 Alternative to achieve consistency with Principles 30 and 33.

For the “could be consistent” findings, Principles 7, 9, 13, 14, 25, 27, 30, 31 and 33 all relate to identifying funding to support implementation of the Adaptive Management Plan, and specifically the Habitat Restoration and Grazing Management plans. As noted above, the availability of funds for implementation of the Adaptive Management Program as a result of the limited regulatory “nexus” under B-8 is not determinable at this time, therefore ensuring adequate funding is not feasible at this time. The inability to ensure funding of the Adaptive Management Program is significant.

For the “not consistent” findings, the two conflicts associated with B-8 relate to development in the valley floor and alluvial side canyons in the Gobernadora sub-basin (Principle 10) and the continued generation of fine sediments from erodible clay soils in the Cristianitos sub-basin (Principle 26). The lack of consistency with the regarding the valley floor and alluvial side canyons in Gobernadora is common to all alternatives and is not a significant impact. The continued generation of fine sediments in the Cristianitos sub-basin, however, is a potentially significant impact as it may affect downstream resources.

### **Planning Species – NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-8 has medium to high consistency with the Planning Guidelines for 27 of the 28 Planning Species <sup>1</sup> relative to the other alternatives. The average Planning Species consistency for Alternative B-8 is 70 percent, with 29 percent “could be consistent” and only one percent not consistent. As described above, this alternative is different from the other alternatives in the high percentage of “could be consistent” that primarily depend on the ability to fund the Adaptive Management Program. If the Guidelines found to be “could be consistent” were met, the B-8 would have 99 percent overall consistency with the Guidelines. As discussed above, however, it appears that B-8 would have a significant funding shortfall with respect to habitat restoration and management actions, including costly soils stabilization measures in Cristianitos and upper Gabino canyons.

<sup>1</sup> The mud nama was excluded from this analysis and all following analyses because it was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives.

As shown in Table M-6, the consistency percentages for 27 Planning Species range from 35 percent for the many-stemmed dudleya to 100 percent for the Riverside and San Diego fairy shrimp, golden eagle, and chaparral beargrass. The B-8 achieves high levels of consistency for the other five listed species.

The B-8 is 81 percent consistent and 0 percent not consistent for the arroyo toad. As noted above, the 19 percent “could be consistent” relate to adaptive management, including implementing bullfrog controls (Guideline 58), giant reed control in San Juan Creek (Guideline 60), maintaining and managing habitat quality along San Juan Creek through invasive species control and habitat restoration (Guideline 70), and tamarisk and pampas grass control in lower Cristianitos Creek (Guideline 133). The ability to implement these controls depends on the availability of funding for the Adaptive Management Program, which cannot be determined at this time.

The B-8 Alternative is 86 percent consistent and five percent not consistent for the California gnatcatcher. B-8 is not consistent with Guideline 68 because it would impact the east-west linkage south of the artificial lake in Trampas Canyon (as do all alternatives). The nine percent “could be consistent” include CSS/VGL habitat restoration in Chiquita Canyon (Guideline 20) and coastal sage scrub restoration in Sulphur Canyon (Guideline 44).

The B-8 Alternative is 53 percent consistent and 47 percent “could be consistent” for the least Bell’s vireo and 60 percent consistent and 40 percent “could be consistent” for the southwestern willow flycatcher. For both the vireo and willow flycatcher, B-8 could be consistent with Guideline 40, which recommends cowbird trapping in the Gobernadora sub-basin, and Guideline 49, which recommends restoration in Gobernadora Creek to address historic meander above the knickpoint and upstream land use-induced incision and erosion, including potentially excessive ground and surface water originating upstream. B-8 also could be consistent for the vireo on Guideline 26, which recommends restoration in Chiquita Creek to address headcuts, Guideline 60 which recommends giant reed control in San Juan Creek on RMV property, Guideline 70 which recommends management and maintenance of habitat quality (including hydrology and sediment transport) in San Juan Creek, Guideline 101 which recommends protecting the headwaters and remediation of the clay pits in Cristianitos Canyon to control erosion and downstream sediments, and Guidelines 133 and 158 which recommend invasive species control in lower Cristianitos Creek. As noted above, the ability to fund these management actions under the B-8 Alternative is uncertain.

B-8 is 40 percent consistent and 60 percent “could be consistent” for the thread-leaved brodiaea. Guidelines 19, 43, 94, 95, and 131 all relate to management of sensitive plant locations, including invasive species control, control of human access and/or grazing management. Guidelines 21, 22, 97 and 98 relate to salvaging and translocating brodiaea and clay topsoils.

For the non-listed Planning Species, the B-8 Alternative generally has medium to high consistency across the major species-habitat associations (Table M-6). As examples, for coastal sage scrub species, the B-8 is 74 percent consistent for the cactus wren, 81 percent consistent for the orange-throated whiptail, and 82 percent consistent for the San Diego horned lizard. For grassland species, the B-8 is 52 percent consistent for the grasshopper sparrow and 50 percent consistent for the merlin. For riparian/woodland species, the B-8 is 65 percent consistent for the Cooper’s hawk, 56 percent consistent for the white-tailed kite, and 53 percent consistent for the yellow warbler and 60 percent consistent for the yellow breasted chat. For planning area-wide species, the B-8 is 100 percent consistent for the golden eagle, 85 percent consistent for the mountain lion, and 82 percent consistent for the mule deer. Finally, for non-listed plants the B-8 has medium to high consistency with the Guidelines, with chaparral

beargrass at 100 percent consistent, Coulter's saltbush at 80 percent consistent, many-stemmed dudleya at 35 percent consistent, salt spring checkerbloom at 67 percent consistent, and southern tarplant at 50 percent consistent. As with the listed species, the "could be consistent" related to adaptive management are a large part of the consistency analysis. If the Guidelines that "could be consistent" were met, the consistency under B-8 would be 96 percent for the cactus wren, 100 percent for the orange-throated whiptail, San Diego horned lizard, merlin and mountain lion, 92 percent for the grasshopper sparrow, 96 percent for the Cooper's hawk, and 95 percent for the white-tailed kite, and 96 percent for the mule deer. For plants, the B-9 would be 100 percent for Coulter's saltbush, many-stemmed dudleya, salt spring checkerbloom, and southern tarplant.

Without adaptive management, the B-8 Alternative overall would provide a medium to high level of protection for Planning Species. If adaptive management could be funded under the B-8, the consistency findings would be very high overall, with 100 percent consistency achievable for many of the Planning Species.

### **Planning Species – Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-8 has medium consistency with the Watershed Principles for the ten Planning Species for which they are directly relevant (i.e., aquatic/riparian species) (Table M-7). Overall, B-8 is 52 percent consistent with the Principles, 12 percent not consistent, and 36 percent "could be consistent." As with the Planning Guidelines, the "could be consistent" with the Principles are a substantial component of the B-8 consistency analysis. The consistency findings have a wide range of 17 percent consistent for the southwestern willow flycatcher to 67 percent consistent for the western spadefoot toad. The "could be consistent" findings tend to be complementary to the "consistent" findings, with a range of 27 percent for the spadefoot (which has the highest consistency finding) to 67 percent for the willow flycatcher (which has the lowest consistency finding).

B-8 is 64 percent consistent for the arroyo toad, 29 percent "could be consistent," and seven percent not consistent. B-8 could be consistent with Principles 25, 27, 30 and 33. Principle 25 recommends protecting the Cristianitos headwaters through restoration of native vegetation to reduce generation of fine sediments. Principle 27 pertains to stabilizing Cristianitos Creek. Principle 30 recommends protecting the upper Gabino headwaters through restoring existing gullies using a combination of slope stabilization, grazing management and native vegetation restoration. Principle 33 recommends focusing development on clay soils in the lower portion of the area to reduce the generation of fine sediments. Under B-8, implementation of these recommendations could be consistent if additional funding were identified to implement the Adaptive Management Program.

B-8 is 47 percent consistent for the least Bell's vireo, 40 percent "could be consistent," and 13 percent not consistent. For the southwestern willow flycatcher, B-8 is 17 percent consistent, 67 percent "could be consistent" and 17 percent not consistent. B-8 is not consistent for both the vireo and willow flycatcher with Principle 10, which recommends a development setback from the Gobernadora valley floor, because the proposed development would occur at the edge of the valley floor in a few places and in the alluvial side canyons. B-8 also is not consistent for the vireo with Principle 26, which recommends siting development in Cristianitos Canyon on clayey soils to reduce the generation of fine sediments. Because no development is proposed in the Cristianitos sub-basin under B-8, the generation of fine sediments from erodible clay soils would continue. The B-8 could be consistent with Principles 9 and 12-14 for both the vireo and willow flycatcher. These Principles all are concerned with protecting Gobernadora Creek and associated riparian and wetland habitats, including protecting natural creek meander (Principle 9), creating natural treatment systems (Principle 12), addressing excessive sediment



from upstream development (Principle 13), and addressing existing channel incision (Principle 14). In addition, B-8 could be consistent with Principles 25 and 27 for the vireo, which recommend protecting the Cristianitos headwaters through restoration (Principle 25) and stream stabilization of the creek (Principle 27). B-8 could be consistent with these Principles if additional funding were identified to implement the Adaptive Management Program.

For the non-listed Planning Species, B-8 is not consistent with Principles 10 and 26, as described above for the vireo, for the Cooper's hawk, white-tailed kite, yellow warbler and yellow-breasted chat. For the tricolored blackbird B-8 is not consistent with Principle 10 and for the spadefoot toad and pond turtle B-8 is not consistent with Principle 26. B-8 could be consistent with Principles 9, 13, 14, 25 and 27, as described above for the vireo, for the Cooper's hawk, white-tailed kite, yellow warbler and yellow-breasted chat. For the spadefoot toad and pond turtle, B-8 could be consistent with Principles 25, 27, 30 and 33. Principles 30 and 33 are described above for the arroyo toad. For the southwestern pond turtle B-8 could be consistent with Principles 25, 30, and 31. Principle 31 recommends modification of grazing management in upper Gabino Canyon to support restoration and vegetation management in the headwaters. Under B-8, implementation of these recommendations could be consistent if additional funding were identified to implement the Adaptive Management Program.

Although B-8 has medium consistency with the Watershed Principles compared to alternatives B-4 and B-9, adequate funding to implement the Adaptive Management Program would allow B-8 to achieve high consistency (88 percent) with the Principles. As noted above, however, adequate funding cannot be ensured at this time.

### **Circulation Systems Consistency Analysis**

In order to portray the potential impacts of the alternative circulation systems, this section will analyze the circulation systems with regard to the sub-basin guidelines/principles. "Connectivity" considerations are based on the NCCP/HCP Planning Guidelines (General Policy 3.3) and the accompanying "Habitat Linkages and Wildlife Corridors Map and are incorporated explicitly into the Planning Guidelines sub-basin Protection Recommendations. These "connectivity" considerations provide criteria for reviewing potential impacts of the alternative circulation systems. Those portions of the circulation systems located *outside* the "development bubbles" are reviewed for consistency with the specific Guidelines and Principles applicable to each sub-basin. For the portions of the circulation systems located *within* "development bubbles," the potential impacts already are reflected in the overall delineation of the particular "development bubble" and do not require separate analysis with respect to the project alternatives. Alternative B-8 is analyzed without the FTCS Project.

### **San Juan Creek Watershed**

#### **1. Chiquita Sub-basin**

The review of the different circulation systems reflects two different assumptions: (1) MPAH proposals proposed or identified in conjunction with the different Alternatives; and (2) the circulation elements shown on the existing MPAH (with the exception of the SOCTIIP as previously noted).

With no development proposed in the Chiquita sub-basin, the B-8 Alternative would likely include the same recommendation to delete the Crown Valley Parkway extension included in the Proposed Project. Due to the absence of development within the Chiquita sub-basin, there would be no internal road affecting Habitat Linkage "E." The arterial extension crossing over from Planning Area 3 would still be required, but, due to the increased connectivity within the

Chiquita sub-basin under Alternative B-8, would be unlikely to have major connectivity impacts. With development in Planning Area 3, the “new Ortega” north of San Juan Creek would have the same impacts reviewed under the Proposed Project.

If Caltrans were to not concur in changing the designation of existing Ortega Highway south of San Juan Creek from a State Highway to a local road, the benefits of the re-designation for wildlife movement and arroyo toad recovery inherent in B-8 would not be realized.

## **2. Gobernadora Sub-basin**

The B-8 circulation system is identical to the Proposed Project circulation system and thus the consistency analysis is the same as provided for the Proposed Project circulation system.

## **3. Trampas Sub-basin and Central San Juan Sub-basin**

All of the alternatives propose the same arterial crossing of San Juan Creek and thus would have the same physical impacts. Project Alternatives B-8 proposes changing Ortega Highway from a State Highway to a local recreational access road while the other alternatives likely would retain the current function of Ortega Highway; however, these differences in recommendations for Ortega Highway would not cause new physical impacts, but instead would affect potential arroyo toad recovery actions per the prior discussion of consistency with the NCCP sub-basin recommendations (i.e., re-classifying Ortega Highway to a local recreational access road would facilitate arroyo toad recovery).

## **4. Verdugo Sub-basin**

With no development proposed, B-8 would be consistent with the recommendations.

## **San Mateo Creek Watershed**

### **1. Cristianitos Sub-basin**

Alternative B-8 does not propose circulation system facilities in the sub-basin and thus would be consistent with the sub-basin recommendations.

### **2. Gabino and Blind Canyons Sub-basin**

Since the B-8 Alternative does not propose development in the San Mateo Creek Watershed,

B-8 would not create any potential circulation system impact considerations and thus would be consistent with the recommendations.

### **3. La Paz Sub-basin**

Project Alternative B-8 does not provide for development within the La Paz sub-basin and therefore would be consistent with the sub-basin recommendations.

### **4. Talega Sub-basin**

Since Alternative B-8 does not propose development in the San Mateo Creek Watershed, there would be no issues regarding circulation systems for this alternative and therefore would be consistent with the recommendations.

## 5. Other Planning Area

Since Alternative B-8 does not propose development in the San Mateo Creek Watershed, there would be no issues regarding circulation systems for this alternative and it would be consistent with the recommendations.

### **B-8 Alternative Consistency with Landscape Level SRP Tenets, SAMP Tenets and Watershed Planning Principles**

**B-8 Open Space 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 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 Cleveland National Forest and to portions of Gabino Canyon. Except for the Trampas development bubble, no development is proposed in the areas to the south of San Juan Creek.

As in the case of the B-5 Alternative, Alternative B-8 emphasizes preserving all of the planning area lands located within the San Mateo watershed.

With regard to large blocks of open space, a major block of habitat, totaling 7,780 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. A second major block of open space lands, totaling 12,500 acres, would extend from Verdugo Canyon (and all areas south of San Juan Creek within the San Juan Watershed other than Trampas) through all of the portions of the San Mateo watershed to the boundaries of the San Mateo Wilderness and Camp Pendleton.

### **B-8 Alternative Consistency with the SRP/Science Advisors Tenets of Reserve Design**

- ***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 was 0 percent consistent with all alternatives and 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 NCCP/HCP Planning Guidelines (see discussion of Planning Species above and consistency analysis in Table M-10). 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 90 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 Adaptive Management Program under the B-8 Alternative is uncertain. For example, controlling giant weed

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 of Planning Species above and Table M-10), notwithstanding uncertainty in funding the Adaptive Management Program. *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 81 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 92 percent of cactus wren locations, 91 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 87 percent of suitable habitat for the three species, would be protected under the B-8 Alternative. For the golden eagle and merlin approximately 74 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.

- **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 (26,266 acres), the Western block (9,387 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total about 37,485 acres and account for about 79 percent of the B-8 Open Space. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest and Camp Pendleton.

- **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).

- **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 M-20. As shown in Table M-20, the vast majority of the three habitat blocks that would be protected as Open Space under the Proposed Project 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. Similar to the B-6 Alternative, 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 M-20, 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 M-20  
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 <sup>2</sup>	1,892	92	77
Developed/Disturbed (% of Total in Block)	100 (5%)	272 (3%)	173 (3%)	492 (2%)	253 (2%)
<b>Total in Block</b>	<b>1,832</b>	<b>9,387</b>	<b>5,536</b>	<b>26,266</b>	<b>12,843</b>

<sup>1</sup> 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.  
<sup>2</sup> 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

- **Tenet 5: Reserves should be biologically diverse.**

Table M-21 shows the amount and percentage of the major vegetation communities protected in the B-8 Alternative, both in the overall B-8 Open Space 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 92 percent for chaparral. Other than grassland, the lowest overall conservation percentage of the major vegetation communities is 87 percent for riparian.

In contrast to the B-5 and B-6 Alternatives, and similar to Alternative B-5, Alternative B-8 focuses habitat protection in the San Mateo Watershed, but, unlike B-5, all of Chiquita Canyon would be protected under B-8. For example, 69 percent of the grassland in the San Juan Watershed is protected compared to 99 percent in the San Mateo Watershed. Similarly, the protection of the major vegetation communities is at least ten 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 M-21. All of the vegetation communities show an over-representation in the San Mateo Watershed, ranging from +2 percent for coastal sage scrub, woodland and forest, and riparian to +7 percent for grassland.

**TABLE M-21  
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE  
COMBINED B-8 OPEN SPACE AND ALREADY PROTECTED OPEN SPACE  
WITHIN WATERSHEDS**

Vegetation Community	Planning Area		B-8 Alternative		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	19,724		17,810 (90%)		
San Juan Creek	15,056	76%	13,480 (89%)	76%	0%
San Mateo Creek	3,772	19%	3,378 (99%)	21%	+2%
Other Watersheds <sup>2</sup>	896	5%	592 (60%)	3%	-2%
Chaparral	7,333		6,745 (92%)		
San Juan Creek	4,219	58%	3,729 (88%)	56%	-2%
San Mateo Creek	2,748	37%	2,727 (99%)	40%	+3%
Other Watersheds	366	5%	289 (79%)	4%	-1%
Grassland	14,979		10,982 (73%)		
San Juan Creek	8,215	55%	5,701 (69%)	52%	-3%
San Mateo Creek	3,093	21%	3,059 (99%)	28%	+7%
Other Watersheds	3,671	24%	2,222 (61%)	20%	-4%
Woodland & Forest	1,824		1,622 (89%)		
San Juan Creek	1,537	84%	1,346 (88%)	83%	-1%
San Mateo Creek	257	14%	257 (100%)	16%	+2%
Other Watersheds	30	2%	19 (63%)	1%	-1%
Riparian	5,213		4,522 (87%)		
San Juan Creek	3,967	76%	3,386 (85%)	75%	-1%
San Mateo Creek	1,024	20%	1,019 (99%)	23%	+2%
Other Watersheds	222	4%	117 (58%)	3%	-1%
<sup>1</sup> Acreages exclude Existing Use areas. <sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas					
Source: Dudek 2004					

Table M-22 compares the representation of the major vegetation communities in the B-8 Alternative with their representation in the planning area as a whole. Coastal sage scrub, for example, is over-represented by three percent in the B-8 Open Space compared to grassland, which is under-represented by four percent. The other major vegetation communities are represented in the B-8 Open Space in the essentially the same proportion as they occur in the planning area.

The source of over-representation of coastal sage scrub and under-representation of grassland is protection within the San Juan Watershed. The modest over-representation of coastal sage

scrub is due to the protection of scrub in the Chiquita sub-basin. The under-representation of grassland in the San Juan Watershed is 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 M-22  
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES  
UNDER THE COMBINED B-8 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE**

Vegetation Community	Planning Area		B-8 Alternative		
	Planning Area Acres <sup>1</sup>	% of Planning Area	Acres (% of total)	% of B-8 Open Space and Already Protected Open Space	% Deviation from Planning Area Distribution
Coastal Sage Scrub	19,724	40%	17,810 (90%)	43%	+3%
San Juan Creek	15,056	31%	13,480 (89%)	33%	+2%
San Mateo Creek	3,772	8%	3,378 (99%)	8%	0%
Other Watersheds <sup>2</sup>	896	1%	592 (60%)	1%	0%
Chaparral	7,333	15%	6,745 (92%)	16%	+1%
San Juan Creek	4,219	9%	3,729 (88%)	9%	0%
San Mateo Creek	2,748	5%	2,727 (65%)	6%	+1%
Other Watersheds	366	1%	289 (79%)	1%	0%
Grassland	14,979	30%	10,982 (73%)	26%	-4%
San Juan Creek	8,215	17%	5,701 (69%)	14%	-3%
San Mateo Creek	3,093	6%	3,059 (99%)	7%	+1%
Other Watersheds	3,671	7%	2,222 (61%)	5%	-2%
Woodland & Forest	1,824	4%	1,622 (89%)	4%	0%
San Juan Creek	1,537	3%	1,346 (88%)	3%	0%
San Mateo Creek	257	1%	257 (100%)	1%	0%
Other Watersheds	30	<1%	19 (63%)	<1%	0%
Riparian	5,213	11%	4,522 (87%)	11%	0%
San Juan Creek	3,967	8%	3,386 (85%)	8%	0%
San Mateo Creek	1,024	2%	1,019 (99%)	2%	0%
Other Watersheds	319	<1%	117 (53%)	<1%	0%

<sup>1</sup> Acreages exclude Existing Use areas.  
<sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Source: Dudek 2004

Table M-23 compares the elevational distribution of the major vegetation communities in the planning area and the B-8 Open Space. As with the B-4, B-5 and B-6 alternatives described above, the protection percentages increase with elevation for all the major vegetation communities. A comparison of the “% Within Vegetation Community” columns for the planning area and B-8 Open Space shows that the elevational distributions of the vegetation communities in the B-8 Open Space generally track the existing distributions in the planning area, but with a slight bias toward under-representations of the upland vegetation communities at less than 800 feet. For example, coastal sage scrub is under-represented by three percent under 800 feet and over-represented by two percent above 800 feet. As with the other

alternatives, the protection of riparian vegetation shows relatively little elevational bias, with a slight under-representation of one percent under 400 feet and over-representation of one percent at 800 to 1,200 feet. The B-8 Open Space has moderate under-representation of grassland at the lowest elevation range (<400 ft), with six percent less in the Open Space (21 percent) compared to existing conditions (27 percent). This under-representation is the same as for Alternatives B-5.

**TABLE M-23  
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE  
COMBINED B-8 ALTERNATIVE OPEN SPACE AND ALREADY PROTECTED  
OPEN SPACE COMPARED TO PLANNING AREA**

Vegetation Community	Elevation Range (ft.)	Planning Area		B-8 Alternative		
		Planning Area Acres <sup>1</sup>	% Within Vegetation Community	Open Space Acres (% of Total)	% Within Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	0-400	1,414	7%	969	5%	-2%
	401-800	9,825	50%	8,674	49%	-1%
	801-1,200	6,562	33%	6,292	35%	+2%
	>1,200	1,923	10%	1,875	10%	0%
Total		19,724		17,810		
Chaparral	0-400	166	2%	118	2%	0%
	401-800	4,640	63%	4,121	61%	-2%
	801-1,200	2,010	27%	1,992	29%	+2%
	>1,200	518	7%	514	8%	+1%
Total		7,334		6,745		
Grassland	0-400	4,005	27%	2,347	21%	-6%
	401-800	8,121	54%	6,270	57%	+3%
	801-1,200	2,551	17%	2,078	19%	+2%
	>1,200	299	2%	287	3%	+1%
Total		14,976		10,982		
Woodland & Forest	0-400	174	10%	153	9%	-1%
	401-800	1,005	55%	860	53%	-2%
	801-1,200	509	28%	474	29%	+1%
	>1,200	135	7%	135	8%	+1%
Total		1,823		1,622		
Riparian	0-400	1,289	25%	1,086	24%	-1%
	401-800	3,088	59%	2,674	59%	0%
	801-1,200	730	14%	658	15%	+1%
	>1,200	106	2%	104	2%	0%
Total		5,213		4,522		

<sup>1</sup> Acreages exclude Existing Use areas.  
Source: Dudek 2004

- **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 above. 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 NCCP/HCP 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 reviewed infra) 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 reviewed infra). 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) under the B-4 and B-6 Alternatives, 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, proposed pursuant to the Adaptive Management Program, 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.

### **B-5 Alternative Consistency with SAMP Tenets**

#### SAMP Tenet 1: No net loss of acreage and functions of waters of the U.S./State

As reviewed under the Watershed Principles functions, Alternative B-8 has been designed to protect the major terrains/hydrology functions of the planning areas, as well as the major riparian/wetlands systems; two likely exceptions are the headwaters of upper Gabino Canyon where soil stabilization actions required to correct existing erosion which could be very costly and the existing clay mining pits in Cristianitos require stabilization. With regard to net acreage

of waters of the U.S./State, 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 due to development within the development bubbles.

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-8 addresses the protection aspect of this tenet within all of the major creek systems. However, funding appears to be questionable for several important restoration actions important to creek systems including: (a) vegetation restoration in Sulphur Canyon upper Cristianitos Canyon and upper Gabino Canyon; (b) soils stabilization actions in Cristianitos Canyon and upper Gabino Canyon; (c) restoration of the creek meander for Gobernadora Creek; and (d) the control of giant reed in San Juan Creek required for riparian habitat restoration.

SAMP Tenet 3: Protect headwaters

Each of the headwaters areas not already urbanized is proposed to be protected and/or restored but restoration measures for upper Gabino Canyon for upper Cristianitos Creek are subject to the above questions regarding funding feasibility. The headwaters area of Trampas Creek is proposed for development, but this area has previously been significantly altered due to existing mining operations and development would be required to include BMPs for stormwater flows.

SAMP Tenet 4: Maintain/protect/restore riparian corridors

All major riparian corridors would be protected. With regard to the restoration of riparian corridors, funding for the restoration of the stream meander between the lower end of Coto de Caza and the knickpoint, for vegetation restoration important to riparian corridor functions in Sulphur Canyon, upper Cristianitos Canyon and upper Gabino Canyons and for invasive species control in Arroyo Trabuco and San Juan Creek may not prove feasible for some or a significant portion of these actions due to reduced funding for the Adaptive Management Program and increased restoration costs (e.g., soils stabilization in upper Gabino and in Cristianitos Canyon) compared with the B-4 and B-6 Alternatives would be undertaken as part of on-site development and funding costs would be absorbed as development costs).

SAMP Tenet 5: Maintain/and or/restore floodplain connection

Alternative B-8 maintains all existing areas of floodplain connection. However, Alternative B-8 may not provide funding for the Adaptive Management proposal to restore the meander in Gobernadora Creek which is intended to 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), Alternative B-8 does not propose any actions that would be contrary to such processes. If Alternative B-8 is not capable of providing funding for vegetation and soils restoration actions within the Cristianitos sub-basin, areas of incision in upper Cristianitos Creek may not be addressed in ways that would restore the limited historic connection with adjoining areas.

SAMP Tenet 6: Maintain and/or restore sediment sources and transport equilibrium

Consistent with the Watershed Planning Principles, Alternative B-8 proposes to protect all of the significant sources of coarse sediment in order to assure the continued generation of such

sediments important for riparian/wetlands habitat systems. As reviewed above, it is not clear that Alternative B-8 can provide adequate funding to assure: (a) the control of giant reed in San Juan Creek, an action important to restoring sediment transport processes; (b) vegetation restoration in areas characterized by clay soils required to help reduce excessive generation of fine sediments in Sulphur Canyon, upper Cristianitos Canyon and upper Gabino Canyon; and (c) soils stabilization in Cristianitos Canyon and upper Gabino Canyon also required to help reduce the excessive generation of fine sediments under existing conditions.

SAMP Tenet 7: Maintain adequate buffer for the protection of riparian corridors

All major riparian corridors would be adequately buffered from development bubbles.

SAMP Tenet 8: Protect riparian areas and associated habitats of listed and sensitive species

Riparian areas associated with listed species and other planning species are proposed to be protected. However, a 300 foot setback from the edge of the San Juan Creek floodplain would be required in areas of the Gobernadora development bubble adjoining the *key location* of arroyo toads extending downstream from the confluence of Bell Canyon and San Juan Creek

**B-8 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: (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, site design BMPs for Alternative B-8 used in identifying development bubbles 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 Adaptive Management Program.

**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 Adaptive Management Program proposes the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. Table M-4 addresses the consistency of the B-8 Alternative with the restoration recommendations of the Adaptive Management Program.

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

Figure 6 of the Watershed Planning Principles 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 Table M-5. 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.

### 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)*

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).

*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.*

As reviewed in Chapter 3 of the WQMP:

"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 Canada Chiquita Sub-basin was divided into 18 catchments."

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; . . . . (5) changes in the infiltration of surface/soil water to groundwater [sub-part (4) involving "potential changes in sediment supply" is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]*

Each of the four elements of Principle 3 cited at the introduction to this subsection is addressed by the above components of the WQMP. As noted previously, the WQMP analyses have been prepared for the B-4 and B-9 Alternatives, with qualitative analyses for the other B Alternatives undertaken based on the B-4 and B-9 quantitative analyses. Chapter 7 of the WQMP addresses findings of significance for the "B" Alternatives analyzed qualitatively.

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 is 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.*

To address County Flood Control planning and management considerations, a HEC-1 analysis has been 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 compared with 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 will 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 are 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 will 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 will be provided for at the area plan approval stage through an Addendum or other appropriate CEQA review.

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.*

Chapter 4 of 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.

Chapter 5 of 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 described in Chapter 4. The cumulative impacts analysis in Chapter 8 of the WQMP 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 Rancho Mission Viejo and downstream of the study area.

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

As reviewed previously in the responses to 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 under three climatic scenarios (All Years, Dry Years and Wet Years) under pre-development conditions and post-development conditions with PDFs.

*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.

### 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 concentrates development in clayey trains, with the effect of reducing yields of fine sediments in 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 Table M-5 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 Adaptive Management Program.

### 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-5 Alternative in relation to these to 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.

### 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.*

Chapter 5 of the WQMP analyzes potential development impacts and proposed water quality PDFs addressing pollutant loadings associated with specific terrains including TSS phosphorus and nutrients. Although the modeling assumptions use information from the L.A. 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 in-stream data and the Baseline Conditions Report to assess the modeling results.

With regard to the filtration functions associated with the specific terrains of each sub-basin, 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.

*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 [cite]. 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 one to two year stormwater flows in accordance with County DAMP requirements will receive water quality treatment prior to the discharge of stormwater runoff into native 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.

*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.*

Habitat restoration that benefits downstream areas through increased infiltration of groundwater and reduced soil erosion include:

- coastal sage scrub restoration in the Chiquita sub-basin
- coastal sage scrub/grasslands restoration in Sulphur Canyon
- restoration of the meander above the knickpoint in the Gobernadors sub-basin
- coastal sage scrub and native grasslands restoration in the Cristianitos sub-basin
- coastal sage scrub and native grasslands restoration in upper Gabino
- native grasslands restoration on Blind Canyon Mesa

Additionally, arundo removal in San Juan Creek will allow for increased growth of riparian habitat in San Juan Creek with attendant water quality benefits. The potential benefits of these restoration programs are further described in the Adaptive Management Program and associated appendices.

*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.*

Infiltration is discussed under Principles 1 and 2 above. As described above for Principle 3, the WQMP proposes a combined control system to achieve flow duration marching, 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 discussed in Chapter 7 of the WQMP.

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

Although some agricultural uses will continue under the B-6 Alternative, urban land uses will predominate and thus the potential pollutants are more urban in nature and include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides and trash and debris. Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

*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, Chapter 2 of the WQMP identifies "pollutants of concern" that are anticipated or potentially could be generated by the 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. Chapter 4 reviews the combined control system elements, including size, required for each sub-basin where development is proposed. Chapter 7 of the WQMP discusses pre-and post-project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

Summary of Issues:

### **1. B-8 Open Space System**

With regard to assembling the B-8 Open Space, the B-8 Alternative commits approximately 83% of RMV lands to open space. The Alternative B-8 Open Space meets broad-scale NCCP and SAMP reserve design guidelines

### **2. Long-Term Habitat Management**

Regarding long-term habitat management, Alternative B-8 proposes to include all of the Adaptive Management Program recommended habitat restoration areas within the B-8 open space including, costly soils stabilization actions in Cristianitos Canyon and upper Gabino Canyon.

### **Conclusions Regarding Consistency of the B-8 Alternative with Subregional Conservation Goals and Objectives**

To the extent that the economic return from proposed development under this alternative were insufficient to support the dedication of the specified amount of open space and adequate funding of the adaptive management program, this alternative may not be economically feasible without other sources of funding for the acquisition of dedication rights and the adaptive management program.

## **ALTERNATIVE B-9**

### **BIOLOGICAL RESOURCES**

#### **OVERVIEW OF B-9**

Alternative B-9 is the only Alternative that was prepared after completion of the Draft NCCP/HCP Planning Guidelines and Watershed Principles and is the only Alternative specifically designed to address the sub-basin level Guidelines and Principles. The B-9 Alternative focuses heavily on protecting resources associated with the Chiquita sub-basin and the San Mateo Creek Watershed. The proposed B-9 Open Space would protect habitat and species in the Chiquita sub-basin above the treatment plant and west of Chiquita Creek. A large block of habitat and associated species in the San Mateo Watershed in the Cristianitos, La Paz and Gabino would be protected under this alternative. The Chiquita Canyon portion of the Chiquita sub-basin supports a majority of a major population in a key location of the coastal California gnatcatcher considered to be vital to sustaining gnatcatcher populations within the sub-region and to further recovery. Taken together, the areas proposed for inclusion within the open space comprise a very large block of habitat containing sensitive species and providing connectivity with large-scale protected habitat areas in close proximity to these lands.

#### **Impact Analysis**

Section 4.9.4 reviews the impacts anticipated to occur as a result of implementation of the Proposed Project. Significant impacts are identified on the basis of the criteria established by the County for this EIR section forth in Section 4.9.4. This section examines the impacts to biological resources anticipated to result of implementation of the project alternatives. The same significance criteria are applied to the analysis of alternatives as the Proposed Project.

#### **Consistency with Subregional Conservation Planning Goals and Guidelines**

As previously reviewed in Section 4.9.4, the NCCP/HCP Working Group developed Draft NCCP/HCP Planning Guidelines (Draft NCCP Guidelines) and Draft Watershed and Sub-basin Planning Principles (Draft Watershed Principles) incorporating and applying the NCCP Conservation Guidelines/Science Advisors Reserve Design Tenets and the SAMP Tenets Prepared by the USACE. These guidelines and principles provide guidance for decision-makers keyed to local biologic, hydrologic and geomorphic conditions. Although considered “works in progress,” by the Wildlife Agencies both the guidelines and principles represent the most current thinking regarding protection, restoration and management priorities for the resources within the study area and for this reason the County is using these in its assessment of the Alternatives reviewed in this section of the GPA/ZC EIR. The guidelines and principles have been subject to public input during public workshops associated with the NCP/HCP and SAMP/MSAA programs and are available for review on the County website.

The Draft NCCP Guidelines and Draft Watershed Principles contain both broad planning principles applicable at the watershed scale and specific planning considerations and planning recommendations applicable to specific sub-basins within the study area. The following sub-sections present consistency analyses at both scales of analysis, starting with the geographically specific sub-basin guidelines and principles.

The analyses presented in the following sub-sections will use the same methodology in assessing the level of consistency of each of the “B” Alternatives with Subregional Conservation Planning Goals and Guidelines.

## 1. Open Space/Habitat Protection

### B-9 Alternative Consistency with Sub-basin Planning Guidelines and Principles

Section 4.9.4 examines the degree to which the Proposed Project is consistent with the Draft NCCP/HCP Planning Guidelines and Watershed and Sub-basin Planning Principles. This section performs the same consistency analysis for the project alternatives. Similar to the consistency analysis for the Proposed Project, the comparative analysis of alternatives is presented in matrix form. Table M-4 presents a matrix that provides “NCCP/HCP Planning Guidelines Consistency Findings.” Table M-5 presents a matrix that provides the “Watershed and Sub-basin Planning Principles Consistency Findings” using the identical approach described for Table M-4. Because these matrices are extremely detailed, tabular summaries for the two matrices are presented in Table M-6 for the NCCP/HCP Planning Guidelines, Table M-7 for the Watershed Planning Principles, Table M-8 for the Planning Species in relation to the Planning Guidelines, and Table M-9 for the Planning Species in relation to the Watershed Principles. These summary tables are accompanied in the text by narrative summaries of the findings. Table M-10 provides an overall conservation summary for the Planning Species in terms of locations, suitable habitat, *major* and *important populations* and *key locations* in the alternatives. The concluding section provides a series of analyses of Circulation System Consistency of each alternative for each sub-basin.

#### NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis

Alternative B-9 is 90 percent (135/150 total) consistent with the Planning Guidelines (Table M-6). Modifications to the B-9 would be necessary in four (3 percent) instances. Modifications to B-9 would be necessary to achieve consistency with Guidelines 2, 27, 112, and 148. Alternative B-9 would conflict with 11 (7 percent) of the Guidelines (8, 30, 39, 54, 68, 79, 124, 125, 126, 134, and 151).

With regard to the “could be consistent” findings, the types of modifications that would be necessary for B-9 to be consistent with Guidelines 2, 27, 112, and 148 are:

1. The inclusion of culverts or similar type facility and associated fencing in the design of Cristianitos Road in the Chiquita sub-basin and the east-facing slope of Chiquadora Ridge to facilitate ground-dwelling wildlife movement;
2. A determination as to the availability of funding to support restoration efforts in upper Gabino to address soil stabilization (the expense of the restoration effort would be directly related to the type and extent of restoration effort proposed); and
3. Development of a golf course design in the Talega sub-basin (Planning Area 8) that would avoid the four brodiaea locations in that sub-basin.

Upon preliminary review, modifications “1” and “2” appear to be feasible in that they involves discrete design decisions regarding Cristianitos Road and the golf course in Planning Area 8. The level of effort necessary to reduce erosion in upper Gabino is undetermined at this time; therefore the feasibility of modification “3” cannot be ascertained at this time.

For the “not consistent” findings, Alternative B-9 generally conflicts with the Planning Guidelines in three ways: (1) impacts to native grasslands; (2) impacts to raptor foraging habitat; and (3) limited impacts to specific species and habitat types. Alternative B-9 would conserve 10,267 acres or 69 percent of grassland habitat. Conservation of historic raptor nesting locations is approximately 82 percent and conservation of foraging habitat varies from 67 percent for

grassland (foraging habitat for golden eagle and merlin) to 83 percent for riparian/woodland (foraging habitat for Cooper's hawk). Although the conservation of 62 percent of coastal sage scrub and 71 percent of gnatcatcher locations along the eastern slopes of Chiquadora Ridge fails to achieve the 80 percent conservation threshold recommended by Guideline 39 for this location, overall Alternative B-9 would protect 90 percent of locations and coastal sage scrub within the *major population/key location* in the Chiquita/Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin, and is therefore consistent with Planning Guideline 17. Across the entire RMV Open Space B-9 would conserve 84 percent of coastal sage scrub and gnatcatcher locations (16,663 acres and 602 locations respectively).

Overall Alternative B-9 achieves a high (90 percent) degree of consistency with the sub-basin protection, management and restoration recommendations.

### **Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-9 is 83 percent (33/40 total) consistent with the Watershed Principles (Table M-6). Modifications to the B-9 would be necessary to achieve consistency with Principles 5 and 30. Alternative B-9 would conflict with 5 (12 percent) of the Principles (3, 4, 10, 35, and 40).

With regard to "could be consistent" findings, Principle 5 requires the identification of natural treatment systems for water quality treatment that would be appropriate in the sandy soils of the major side canyons and valley floor. Since the Water Quality Management Plan (WQMP) identifies appropriate natural treatment system (NTS) facilities, this modification is feasible. Principle 30 relates to restoration in the Gabino sub-basin. As noted above, a determination would be needed as to the amount and availability of funding to support restoration efforts in upper Gabino to address soil stabilization (the expense of the restoration effort would be directly related to the type and extent of restoration effort proposed). The level of effort necessary to reduce erosion in upper Gabino is undetermined at this time, therefore the feasibility of this effort cannot be ascertained at this time.

For the "not consistent" findings, Alternative B-9 primarily conflicts with recommendations in the Chiquita, Gobernadora and Blind sub-basins for protecting canyon floors, as follows:

- a) Chiquita Sub-basin: in order to avoid the side canyons above the treatment plant and the main valley floor, all development is concentrated south of the treatment plant resulting in impacts to one major side canyon.
- b) Gobernadora Sub-basin: development avoids the main valley floor and is set back on Chiquadora Ridge, but some development is allowed in the eastern side canyon.
- c) Blind Sub-basin: development in Planning Area 8 (Northrup Grumman) is concentrated in the Blind Sub-basin in order to avoid the vast majority of the San Mateo watershed in the planning area.

Overall Alternative B-9 achieves a high (83 percent) degree of consistency with the Watershed Principles and has limited conflicts (12 percent).

## **Planning Species – NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-9 has very high consistency with the Planning Guidelines for 27 of the 28 Planning Species.<sup>2</sup> The average Planning Species consistency for Alternative B-9 is 93 percent. As shown in Table M-6, the consistency percentages for 27 Planning Species range from a low of 73 percent consistent for the grasshopper sparrow to 100 percent consistent for the arroyo toad, least Bell's vireo, southwestern willow flycatcher, San Diego fairy shrimp, Riverside fairy shrimp, golden eagle, yellow warbler, yellow-breasted chat, western spadefoot toad, southwestern pond turtle, chaparral beargrass, Coulter's saltbush, many-stemmed dudleya, salt spring checkerbloom, and southern tarplant. All but one of the 27 species (grasshopper sparrow) achieved at least 80 percent consistency.

For the California gnatcatcher, the B-9 Alternative is 91 percent consistent and nine percent not consistent. The two Guidelines not met for the gnatcatcher are Guideline 39, which recommends 80 percent conservation of coastal sage scrub and gnatcatcher locations on Chiquadora Ridge and Guideline 68, which recommends maintaining the upland east-west habitat linkage south of the artificial lake in Trampas Canyon. Although Guideline 39 is not met, overall the recommended threshold of at least 80 percent conservation of coastal sage scrub and gnatcatcher locations is achieved in the Chiquita/Wagon Wheel canyons sub-basin *major population/key location*. Guideline 68 is not met under any of the alternatives because of the narrow strip of habitat that would remain between the Trampas Canyon development area and the Talega development to the south. This linkage probably is adequate for avian movement and smaller wildlife, but likely is constrained for larger species such as bobcat. This linkage probably is not crucial for the bobcat because other east-west corridors such as San Juan Creek will remain intact.

For the brodiaea the B-9 is 87 percent consistent, seven percent "could be consistent" and seven percent not consistent. The "could be consistent" finding is for Guideline 148, which recommends avoiding the four scattered brodiaea locations east of the Northrup-Grumman facility. Achievement of all of this Guideline is considered feasible under the B-9. B-9 is not consistent with Guideline 8, which recommends avoiding two of the four small populations of brodiaea in lower Chiquita Canyon in addition to the large population on Chiquadora Ridge. Under B-9, all four small populations of brodiaea would be impacted.

For the non-listed Planning Species, the B-9 Alternative also has very high consistency across the major species-habitat associations (Table M-6). For coastal sage scrub species, the B-9 is 88 percent consistent for the cactus wren, and for the orange-throated whiptail and San Diego horned lizard the B-9 is 88 and 80 percent consistent, respectively. For grassland species, the B-9 is 73 percent consistent for the grasshopper sparrow and 88 percent consistent for the merlin. For riparian/woodland species, the B-9 is 88 percent consistent for the Cooper's hawk, 81 percent consistent for the white-tailed kite, and 100 percent consistent for the yellow warbler and the yellow-breasted chat. For planning area-wide species, B-9 is 100 percent consistent for the golden eagle, 90 percent consistent for the mountain lion, and 86 percent consistent for the mule deer. As noted above, for non-listed plants the B-9 is 100 percent consistent for chaparral beargrass, Coulter's saltbush, many-stemmed dudleya, salt spring checkerbloom, and southern tarplant.

Overall, Alternative B-9 would provide high to very high protection for all of the Planning Species.

<sup>2</sup> The mud nama was excluded from this analysis and all following analyses because it was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives.

## **Planning Species – Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-9 is highly consistent with the Watershed Principles for the ten Planning Species for which they are directly relevant (i.e., aquatic/riparian species) (Table M-7). Overall, B-9 is 88 percent consistent with the Watershed Principles, eight percent not consistent, and four percent “could be consistent” for the Planning Species. The consistency findings are tightly distributed, with a low of 78 percent consistent for the tricolored blackbird to 93 percent consistent for the arroyo toad and the western spadefoot toad.

B-9 is 93 percent consistent for the arroyo toad and seven percent “could be consistent.” The single “could be consistent” is Principle 30 which recommends protecting the Gabino headwaters through restoration of existing gullies using a combination of slope stabilization, grazing management and native grassland and/or scrub revegetation. This Principle is a “could be consistent” because the soil stabilization program would be costly and the availability of sufficient funding would need to be determined, as described above.

B-9 is 93 percent consistent for the least Bell’s vireo and seven percent not consistent. For the southwestern willow flycatcher, B-9 is 83 percent consistent and 17 percent not consistent. B-9 is not consistent for both the vireo and willow flycatcher with Principle 10, which recommends a set back of development from the valley floor in Gobernadora and concentration of development on Class D soils in order to emulate current hydrologic patterns, because the proposed development area is situated along the edge of the valley floor.

For the non-listed Planning Species, B-9 is not consistent with Principle 10 for the Cooper’s hawk, tricolored blackbird, white-tailed kite, yellow warbler and yellow-breasted chat. In addition, B-9 is not consistent with Principle 35 for Cooper’s hawk, white-tailed kite, yellow warbler and yellow-breasted chat. Principle 35 recommends limiting development and other uses in Blind Canyon to areas away from the major oak woodlands, which provide suitable habitat for these species. Proposed development under B-9 would impact the oak woodlands in Blind Canyon. For the tricolored blackbird B-9 could be consistent with Principle 5, which recommends natural treatment systems for water quality treatment and storm detention in sandy soils in the major side canyons and valley floor of Chiquita Canyon. For the western spadefoot toad and southwestern pond turtle B-9 could be consistent with Principle 30, as described above. This Principle is a “could be consistent” because the soil stabilization program would be costly and the availability of sufficient funding would need to be determined.

Overall B-9 has very high consistency (88 percent) with the Watershed Principles.

## **Circulation Systems Consistency Analysis**

In order to portray the potential impacts of the alternative circulation systems, this section will analyze the circulation systems with regard to the sub-basin guidelines/principles. “Connectivity” considerations are based on the NCCP/HCP Planning Guidelines (General Policy 3.3) and the accompanying “Habitat Linkages and Wildlife Corridors Map and are incorporated explicitly into the Planning Guidelines sub-basin Protection Recommendations. These “connectivity” considerations provide criteria for reviewing potential impacts of the alternative circulation systems. Those portions of the circulation systems located *outside* the “development bubbles” are reviewed for consistency with the specific Guidelines and Principles applicable to each sub-basin. For the portions of the circulation systems located *within* “development bubbles,” the potential impacts already are reflected in the overall delineation of the particular “development bubble” and do not require separate analysis with respect to the project alternatives. Alternative B-9 is analyzed without the FTCS Project.



## San Juan Creek Watershed

### 1. Chiquita Sub-basin

The review of the different circulation systems reflects two different assumptions: (1) MPAH proposals proposed or identified in conjunction with the different Alternatives; and (2) the circulation elements shown on the existing MPAH (with the exception of the SOCTIIP for the reasons previously noted).

Project Alternative B-9 proposes three major changes in the existing MPAH: (1) the deletion of the Crown Valley Parkway extension through Chiquita Canyon and Sulphur Canyon; (2) a change in the designation of Ortega Highway south of San Juan Creek from a State Highway to a local recreational access road; and (3) the relocation of Ortega Highway north of San Juan Creek which would necessitate the construction of a bridge over Chiquita Creek. These MPAH changes would have the following consistency implications:

- The deletion of the Crown Valley Parkway extension from the MPAH would be consistent with both the Southern NCCP/HCP Guidelines and the Watershed Planning Principles because it would:
  - eliminate a major new impervious surface in Chiquita Canyon;
  - avoid impacts on California gnatcatcher sites otherwise protected by the proposed Habitat Reserve;
  - protect major Habitat Linkage/Wildlife Corridor “D” at the “Narrows”;
  - protect habitat above the Narrows;
  - protect the habitat on Chiquita Ridge; and
  - protect the major Habitat Linkage/Wildlife Corridor “H” in Sulphur Canyon (“D” and “H” both would be bisected and impacted by the Crown Valley Parkway extension).
- The proposed change in the classification of Ortega Highway south of San Juan Creek from a State Highway to a local road would reduce vehicle impacts on animal species by allowing better control of access, potentially furthering recovery efforts for the arroyo toad.
- The relocation of Ortega Highway north of San Juan Creek would necessitate a bridge crossing over Chiquita Creek, but generally would avoid the valley floor and biological resources, in contrast with the Crown Valley Parkway extension.

Finally, the internal north-south collector road to the east of the treatment plant would impact ground-dwelling wildlife movement in Habitat Linkage/Wildlife Movement Corridor “E.” The arterial extension from Planning Area 3 moving north would have similar impacts on Habitat Linkage “D.” Avian wildlife movement would not be impacted.

### 2. Gobernadora Sub-basin

Project Alternative B-9 shows an arterial road extending from Planning Area 3 to the Chiquita sub-basin and a connection to Oso Parkway via Tesoro Road. This road is proposed to be elevated above the valley floor and, so long as the creek itself is bridged and the road is

constructed in such a way as to allow for the creek meander restoration program, the arterial road would be consistent with the sub-basin recommendations. The road has been aligned to avoid impacting Sulphur Canyon and thus would be consistent with the Sulphur Canyon restoration recommendations that are also an element of the Gobernadora Creek restoration plan. Project Alternative B-9 Circulation System would be consistent with the sub-basin recommendations.

### **3. Trampas Sub-basin and Central San Juan Sub-basin**

All of the alternatives propose the same arterial crossing of San Juan Creek and thus would have the same physical impacts. Project Alternative B-9 proposes changing Ortega Highway from a State Highway to a local recreational access road while the other alternatives likely would retain the current function of Ortega Highway; however, these differences in recommendations for Ortega Highway would not cause new physical impacts, but instead would affect potential arroyo toad recovery actions per the prior discussion of consistency with the NCCP sub-basin recommendations (i.e., re-classifying Ortega Highway to a local recreational access road would facilitate arroyo toad recovery).

### **4. Verdugo Sub-basin**

Project Alternative B-9 shows that Planning Area 4 is located within the Verdugo sub-basin, but outside of Verdugo Canyon itself, would be served via access from existing Ortega Highway and thus would be consistent with the sub-basin recommendations.

## **San Mateo Creek Watershed**

### **1. Cristianitos Sub-basin**

Under the Project Alternative B-9, existing Cristianitos Road, a two-lane private Ranch access road, would be upgraded to County collector standards to serve north-south demands (i.e., the desire of people living in the Planning Area 8 located in the Talega sub-basin to travel northward to jobs in the central part of the County). Widening existing Cristianitos Road would: (1) avoid the headwaters of Cristianitos Creek; (2) provide the opportunity to implement the CSS/VGL restoration recommendations; (3) avoid the alkali wetlands/creek riparian areas; and (4) preserve opportunities for stream stabilization opportunities. Project Alternative would be consistent with the sub-basin recommendations.

### **2. Gabino and Blind Canyons Sub-basin**

Under Project Alternative B-9, existing Cristianitos Road, a two-lane private Ranch access road, would be upgraded to County collector standards to serve north-south demands. Upgrading existing Cristianitos Road to County standards would require removal of the existing at-grade Arizona style (pipe and concrete) crossing and construction of either a box culvert or a bridge in the same general location. Impacts to Gabino Creek would result from this reconstruction. Measures to reduce impacts to arroyo toad breeding habitat would be implemented during reconstruction of the crossing, such as toad exclusion fencing, minimal to no construction activity during the breeding season, sediment control measures and biological monitoring. In the long term, re-construction of this structure would be expected to improve arroyo toad movement opportunities. Replacement of the existing pipes with a box structure would provide for a wider movement area for aquatic species, including the arroyo toad. Implementation of a permanent toad exclusion at the crossing and adjacent upstream and downstream areas also would reduce potential toad road kills. Replacement of the existing pipes with a bridge would be a significant improvement over the existing condition, as opportunities for movement would be maximized,

while the potential for road kill would be significantly reduced over existing conditions. Existing hydrology and sediment delivery processes would be unaffected. The determination of whether to construct a box culvert or a bridge would depend on the anticipated traffic and the degree of flood protection necessary. Project Alternative B-9 would be consistent with the sub-basin recommendations.

### **3. La Paz Sub-basin**

Project Alternative B-9 does not provide for development within the La Paz sub-basin and therefore would be consistent with the sub-basin recommendations.

### **4. Talega Sub-basin**

Access to the development in the Talega sub-basin under Project Alternative B-9 would be via construction of a bridge over Cristianitos Creek connecting existing Avenida Pico to existing Cristianitos Road within the Other Planning Area. Internal residential streets only would be constructed in the Talega sub-basin. Project Alternative B-9 would be consistent with the sub-basin recommendations.

### **5. Other Planning Area**

Project Alternative B-9 circulation system proposes that north-south access be provided via an upgrade of existing Cristianitos Road to County collector. Construction of a bridge over Cristianitos Creek connecting existing Avenida Pico to existing Cristianitos Road within the Other Planning Area would be necessary. Temporary impacts to Cristianitos Creek resulting from construction of this bridge would occur, as would permanent impacts associated with the placement of piers in Cristianitos Creek to support the bridge structure. North-south wildlife movement along Cristianitos Creek over the long term would be unaffected by the bridge. Measures to reduce impacts to arroyo toad breeding habitat would be implemented during construction of the bridge, such as toad exclusion fencing, minimal to no construction activity during the breeding season, sediment control measures and biological monitoring. Existing hydrology would be maintained with construction of the bridge. Project Alternative B-9 would be consistent with the sub-basin recommendations.

## **B-9 Alternative Consistency with Landscape Level SRP Tenets, SAMP Tenets and Baseline Conditions Watershed Planning Principles**

**B-9 Alternative Open Space Features:** When combined with already protected open space in the Subregion, the proposed B-9 Open Space would create three large blocks of habitat that are both connected with one another and with other large scale protected habitat areas: (a) 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 23,691 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; (b) a 6,311 acre block of habitat within the Chiquita sub-basin extending from the Chiquita Canyon conservation easement area in the northern portion of the 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 bubble; (c) a 1,628 acre block of habitat located in the southwest portion of the proposed Open Space adjacent to the City of San Juan Capistrano encompassing the entire length of San Juan Creek as it flows through the RMV property and a

significant block of habitat extending from the southern bank of San Juan Creek onto the Radio Tower Road mesa.

### **B-9 Alternative Consistency with the SRP/Science Advisors Tenets of Reserve Design**

- **Tenet 1: Conserve target species throughout the planning area**

As described above for the B-4 Alternative, 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 was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives. For the listed Planning Species, Alternative B-9 has very high consistency with the NCCP/HCP Guidelines (see discussion of Planning Species above and consistency analysis Table M-10). B-9 protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo, and southwestern willow flycatcher (see descriptions in Table M-10). 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 84 percent of locations and coastal sage scrub habitat, including 90 percent of locations and 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 79 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.

B-9 also provides very high protection for the unlisted Planning Species (see discussion of Planning Species above and consistency analysis in Table M-10). *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 Table M-10, substantial protection would be provided for *key locations* of all of these species, with overall conservation ranging from 77 percent protection of populations of grasshopper sparrow and orange-throated whiptail to 100 percent protection of Coulter’s saltbush and southern tarplant. For the tricolored blackbird, the majority 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 Narrows area of Chiquita Canyon, San Juan Creek near the mouth of Verdugo Canyon, 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, mule deer, and mud nama. For the cactus wren, Cooper’s hawk, and white-tailed kite, 85 percent of cactus wren locations, 82 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 82 percent of suitable habitat for the three species, would be protected under the B-9 Alternative. For the golden eagle and merlin approximately 67 percent of foraging habitat would be protected and both species likely would persist in the subregion. The Habitat Reserve would include a key foraging area for the merlin in Middle and Lower Chiquita Canyon. Under B-9, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

- **Tenet 2: Larger Reserves are better.**

When combined with already protected open space in the Subregion, the B-9 Alternative is comprised of three major habitat blocks: the Eastern block (23,306 acres), the Western block (8,481 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total about 33,618 acres and account for about 76 percent of the B-9 Open Space. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest and Camp Pendleton.

- **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 and between the Gobernadora and East Ortega development areas (linkage J).

- **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 M-24. As shown in Table M-24, the vast majority of the three habitat blocks that would be protected as Open Space under the Proposed Project 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. Similar to Alternatives B-6 and B-8, 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 M-24, 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. 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 block and the lowest percentage in the Eastern block.

**TABLE M-24  
MAJOR VEGETATION COMMUNITIES WITHIN  
THE B-9 ALTERNATIVE HABITAT BLOCKS**

Vegetation Community/Land Cover Type	Habitat Block Acres <sup>1</sup>				
	Arroyo Trabuco	Western		Eastern	
		Total	Total	RMV	Total
Coastal Sage Scrub	313	2,891	1,412	10,634	3,889
Chaparral	121	305	146	4,920	2,461
Grassland	514	2,413	1,037	3,748	2,205
Woodland & Forest	141	91	48	1,059	218
Riparian	613	600	423	2,568	991
Other Habitats/Land Covers	30	1,915 <sup>2</sup>	1,396	37	19
Developed/Disturbed (% of Total in Block)	100 (5%)	268 (3%)	169 (4%)	338 (1%)	199 (2%)
<b>Total in Block</b>	<b>1,832</b>	<b>8,481</b>	<b>4,631</b>	<b>23,306</b>	<b>9,982</b>

<sup>1</sup> 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.  
<sup>2</sup> Agriculture accounts for 1,833 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

- **Tenet 5: Reserves should be biologically diverse.**

Table M-25 shows the amount and percentage of the major vegetation communities protected in the B-9 Open Space, both in the overall B-9 Open Space and broken down by watersheds. Overall, the B-9 protects the large majority of the major vegetation communities. Protection ranges from a low of 68 percent for grassland to a high of 84 percent for coastal sage scrub and riparian. Other than grassland, the next lowest overall conservation percentage of the major vegetation communities is 82 percent for woodland and forest.

In contrast to the Proposed Project and B-6 and similar to Alternatives B-5 and B-8, B-9 emphasizes habitat protection in the San Mateo Watershed. The only development in the San Mateo Watershed would be on the Blind Canyon mesa/Northrop Grumman ridge (PA 8). As a result, habitat protection percentages between the two watersheds are more disparate than for the Proposed Project and B-6. For example, 76 percent of chaparral in the San Juan Watershed is protected compared to 95 percent in the San Mateo Watershed. This discrepancy is in large part due to the predominance of chaparral in the East Ortega development planning area (PA 4). Likewise, for grassland protection is 68 percent in the San Juan Watershed and 80 percent in the San Mateo Watershed, reflecting the conservation of grasslands in Cristianitos and Upper Gabino canyons. The protection of riparian also is substantially higher in the San Mateo Watershed, with 94 percent protection versus 82 percent in the San Juan Watershed. On the other hand, the protection of coastal sage scrub in the two watersheds is similar, with 84 percent protection in San Juan and 88 percent in San Mateo.

These relationships also are illustrated by the “% of Vegetation Community” and “Deviation from Planning Area” columns in Table M-25. For example, 58 percent of chaparral in the planning area is in the San Juan Watershed, but only 53 percent of chaparral in the B-9 Habitat Reserve is in San Juan, an under-representation of five percent. Again, this discrepancy reflects the large amount of chaparral in the East Ortega development planning area. Overall, however,

with the exception of chaparral, and grassland to a lesser extent, the B-9 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 M-25  
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE  
COMBINED B-9 OPEN SPACE AND ALREADY PROTECTED OPEN SPACE  
WITHIN WATERSHEDS**

Vegetation Community	Planning Area		B-9 Alternative		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	19,724		16,633 (84%)		
San Juan Creek	15,056	76%	12,709 (84%)	76%	0%
San Mateo Creek	3,772	19%	3,331 (88%)	20%	+1%
Other Watersheds <sup>2</sup>	896	5%	593 (66%)	4%	-1%
Chaparral	7,333		6,119 (83%)		
San Juan Creek	4,219	58%	3,216 (76%)	53%	-5%
San Mateo Creek	2,748	37%	2,613 (95%)	43%	+6%
Other Watersheds	366	5%	290 (79%)	5%	0%
Grassland	14,979		10,262 (68%)		
San Juan Creek	8,215	55%	5,561 (68%)	54%	-1%
San Mateo Creek	3,093	21%	2,478 (80%)	24%	+3%
Other Watersheds	3,671	24%	2,223 (60%)	22%	-2%
Woodland & Forest	1,824		1,495 (82%)		
San Juan Creek	1,537	84%	1,270 (83%)	85%	+1%
San Mateo Creek	257	14%	206 (80%)	14%	0%
Other Watersheds	30	2%	19 (63%)	1%	-1%
Riparian	5,213		4,359 (84%)		
San Juan Creek	3,967	76%	3,279 (83%)	75%	-1%
San Mateo Creek	1,024	20%	962 (94%)	22%	+2%
Other Watersheds	222	4%	118 (53%)	3%	-1%

<sup>1</sup> Acreages exclude Existing Use areas.  
<sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Source: Dudek 2004

Table M-26 compares the representation of the major vegetation communities in the B-9 Alternative with their representation in the planning area as a whole. Coastal sage scrub is over-represented by three percent in the B-9 Open Space compared to grassland, which is under-represented by four percent. The other major vegetation communities are represented in the B-9 Open Space in the essentially the same proportion as they occur in the planning area.

The source of over-representation of coastal sage scrub and under-representation of grassland is protection within the San Juan Watershed. The moderate over-representation of coastal sage scrub is due to the protection of scrub in the Chiquita sub-basin. The under-representation of grassland in the San Juan Watershed is the result of impacts in the Gobernadora sub-basin relative to the high protection of grasslands 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-9 provides a balanced representation of the existing distribution of the major vegetation communities in the different watersheds.

**TABLE M-26  
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES  
UNDER THE COMBINED B-9 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE**

Vegetation Community	Planning Area		B-9 Alternative		
	Planning Area Acres <sup>1</sup>	% of Planning Area	Acres (% of total)	% of B-9 Open Space and Already Protected Open Space	% Deviation from Planning Area Distribution
Coastal Sage Scrub	19,724	40%	16,633 (84%)	43%	+3%
San Juan Creek	15,056	31%	12,709 (84%)	33%	+2%
San Mateo Creek	3,772	8%	3,331 (88%)	8%	0%
Other Watersheds <sup>2</sup>	896	1%	593 (66%)	1%	0%
Chaparral	7,333	15%	6,119 (83%)	16%	+1%
San Juan Creek	4,219	9%	3,216 (76%)	8%	-1%
San Mateo Creek	2,748	5%	2,613 (95%)	7%	+2%
Other Watersheds	366	1%	290 (79%)	1%	0%
Grassland	14,979	30%	10,262 (68%)	26%	-4%
San Juan Creek	8,215	17%	5,561 (68%)	14%	-3%
San Mateo Creek	3,093	6%	2,478 (80%)	6%	0%
Other Watersheds	3,671	7%	2,223 (60%)	6%	-1%
Woodland & Forest	1,824	4%	1,495 (82%)	4%	0%
San Juan Creek	1,537	3%	1,270 (83%)	3%	0%
San Mateo Creek	257	1%	206 (80%)	1%	0%
Other Watersheds	30	<1%	19 (63%)	<1%	0%
Riparian	5,213	11%	4,359 (84%)	11%	0%
San Juan Creek	3,967	8%	3,279 (83%)	8%	0%
San Mateo Creek	1,024	2%	962 (94%)	2%	0%
Other Watersheds	222	<1%	118 (53%)	<1%	0%

<sup>1</sup> Acreages exclude Existing Use areas.  
<sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Source: Dudek 2004

Table M-27 compares the elevational distribution of the major vegetation communities in the planning area and the B-9 Open Space. As with the B-4, B-5, B-6 and B-8 alternatives described above, the protection percentages increase with elevation for all the major vegetation communities. A comparison of the “% Within Vegetation Community” columns for the planning area and B-9 Open Space shows that the elevational distributions of the vegetation communities in the B-9 Open Space 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 five percent under 800 feet and over-represented by five percent above 800 feet. As with the other alternatives, the protection of riparian vegetation shows relatively little elevational bias, with a slight under-representation of one percent under 400 feet and over-representation of one percent at 800 to 1,200 feet. The B-9 Open Space has a moderate under-representation of five percent of chaparral at 400 to 800 feet primarily due to impacts that would occur in the East



Ortega development planning area (PA 4). Likewise, grassland is under-represented at the lowest elevation range (<400 ft), with five percent less in the Open Space (22 percent) compared to existing conditions (27 percent).

**TABLE M-27  
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE  
COMBINED B-8 ALTERNATIVE OPEN SPACE AND ALREADY PROTECTED  
OPEN SPACE COMPARED TO PLANNING AREA**

Vegetation Community	Elevation Range (ft.)	Planning Area		B-8 Alternative		
		Planning Area Acres <sup>1</sup>	% Within Vegetation Community	Acres (% of Total)	% Within Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	0-400	1,414	7%	867	5%	-2%
	401-800	9,825	50%	7,693	47%	-3%
	801-1,200	6,562	33%	6,198	37%	+4%
	>1,200	1,923	10%	1,875	11%	+1%
Total		19,724		16,633		
Chaparral	0-400	166	2%	110	2%	0%
	401-800	4,640	63%	3,579	58%	-5%
	801-1,200	2,010	27%	1,916	21%	+4%
	>1,200	518	7%	514	8%	+1%
Total		7,334		6,119		
Grassland	0-400	4,005	27%	2,223	22%	-5%
	401-800	8,121	54%	5,743	56%	+2%
	801-1,200	2,551	17%	2,009	20%	+3%
	>1,200	299	2%	287	3%	+1%
Total		14,976		10,262		
Woodland & Forest	0-400	174	10%	113	8%	-2%
	401-800	1,005	55%	778	52%	-3%
	801-1,200	509	28%	469	31%	+3%
	>1,200	135	7%	135	9%	+2%
Total		1,823		1,495		
Riparian	0-400	1,289	25%	1,057	24%	-1%
	401-800	3,088	59%	2,546	58%	-1%
	801-1,200	730	14%	652	15%	+1%
	>1,200	106	2%	104	2%	0%
Total		5,213		4,359		

<sup>1</sup> Acreages exclude Existing Use areas.  
Source: Dudek 2004

- **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-9 proposed circulation system compliance with Draft NCCP/HCP Planning Guidelines General Policy 4 (roads and infrastructure to be located outside the Habitat Reserve to the maximum extent feasible) is reviewed in the sub-basin consistency analysis. 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 NCCP/HCP 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-9 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 Northrup 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 Northrup 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 Wetland Habitat Restoration Plan and away from the Sulphur Canyon tributary to the creek system. Implementation of the Invasive Species Control Plan 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-9 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 Cristianitos Canyon and 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 (the Grazing Management Plan includes a low-cost proposal that has the potential to attenuate, to some degree, existing erosion problems).

### **B-9 Alternative Consistency with SAMP Tenets**

#### SAMP Tenet 1: No net loss of acreage and functions of waters of the U.S./State

As reviewed under the Watershed Principles functions, Alternative B-9 has been designed to protect the major terrains/hydrology functions of the planning areas, as well as the major riparian/wetlands systems. With regard to net acreage of waters of the U.S./State, Alternative B-9 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 due to development within the development bubbles.

SAMP Tenet 2: Maintain/restore riparian ecosystem integrity

Given its focus on protecting and, where feasible and beneficial, restoring each of the major canyon systems, Alternative B-9 addresses this tenet. However, given the need to verify the ability of the B-9 Alternative to fund the restoration of the clay pits in the Cristianitos sub-basin and the soil stabilization actions required for Upper Gabino, it is not clear whether Alternative B-9 can provide the basis for soils restoration actions important to restoring riparian ecosystem integrity in these areas.

SAMP Tenet 3: Protect headwaters

Each of the headwaters areas not already urbanized is protected. Significant enhancement/restoration is proposed for Upper Cristianitos Creek and Upper Gabino Canyon; however, soils re-configuration proposed for Upper Gabino and Cristianitos Canyon may be difficult to achieve in economic terms without any development activities to help defray potentially significant costs. The headwaters area of Trampas Creek is proposed for development but this area has been altered in conjunction with existing mining operations.

SAMP Tenet 4: Maintain/protect/restore riparian corridors

All major riparian corridors are protected. Alternative B-9 is consistent with the riparian restoration proposals set forth in the Adaptive Management Program.

SAMP Tenet 5: Maintain/and or/restore floodplain connection

Alternative B-9 maintains all existing areas of floodplain connection. Alternative B-9 is consistent with the Adaptive Management Program proposal to restore 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) Alternative B-9 does not propose any actions that would be contrary to such processes.

SAMP Tenet 6: Maintain and/or restore sediment sources and transport equilibrium

Consistent with the Watershed Planning Principles, B-9 protects all of the significant sources of coarse sediment, except for one side canyon in the Verdugo sub-basin, in order assure the continued generation of such sediments important for riparian/wetlands habitat systems; in some areas, development is focused 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. Alternative B-9 is consistent with the vegetation restoration proposals 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

All major riparian corridors are adequately buffered from development bubbles. Where a golf course is proposed in the Blind Canyon Mesa/Northrup Grumman Ridge development bubble, setbacks from arroyo toad areas are consistent with the prior critical habitat designation for the arroyo toad and would protect toad habitat.

## SAMP Tenet 8: Protect riparian areas and associated habitats of listed and sensitive species

As reviewed under consistency with the SRP/Science Advisors Tenet 1, riparian areas associated with listed planning species (including listed species) would be substantially protected. Sensitive species dependent on riparian habitats but not included for protection as an Identified Species have been protected as reviewed in section 4.9.

### **B-9 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: (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, site design BMPs for Alternative B-9 used in identifying development bubbles 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 these Alternatives generally avoids placing impervious surfaces in the major tributary side canyons. B-9 does allow limited development in smaller side canyons of the Gobernadora side canyon and B-9 allows development in one side canyon of the lower Chiquita sub-basin.

*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.*

Chapter 4 of the WQMP presents a “Combined Control System” strategy for each of the sub-basins under the B-9 Alternative. Chapter 5 of the WQMP then examines the specific strategy with respect to “hydrologic conditions of concern.” As indicated in the WQMP, the B-9 Alternative provide for directing drainage to major tributary side canyons in Chiquita and for utilizing the infiltration characteristics of sandy terrains. With regard to Gobernadora Canyon, this alternative addresses existing conditions characterized by excessive surface and subsurface water flows from upstream development with flow duration and discharge strategies under scenarios with and without a flow modulation basin just below Coto de Caza.

**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.*

Clayey Terrains are depicted in Figure 6 of the Watershed Planning Principles. Alternative B-9 generally concentrates development in clayey terrains, thereby emulating the high runoff rates characteristic of clayey terrains. The ability of the B-9 to address these existing erosion problems in Cristianitos and upper Gabino has not been resolved due to the question of the adequacy of funding for the Adaptive Management Program.

*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 Adaptive Management Program proposes the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. Table M-4 addresses the consistency of the B-9 Alternative with the restoration recommendations of the Adaptive Management Program.

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

Figure 6 of the Watershed Planning Principles depicts the locations of crystalline terrains. Alternative B-9 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-9 Alternative with the sub-basin watershed principles is reviewed in Table M-5. 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-9; Chapter 4 of the WQMP proposes Site Planning and Treatment/Flow Control BMPs that specifically address each of the sub-basin Planning Considerations.

### 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)*

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).

*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.*

As reviewed in Chapter 3 of the WQMP:

"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 Canada Chiquita Sub-basin was divided into 18 catchments."

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; . . . . (5) changes in the infiltration of surface/soil water to groundwater [sub-part (4) involving "potential changes in sediment supply" is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]*

Each of the four elements of Principle 3 cited at the introduction to this subsection is addressed by the above components of the WQMP. As noted previously, the WQMP analyses have been prepared for the B-4 and B-9 Alternatives.

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 is 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.*

To address County Flood Control planning and management considerations, a HEC-1 analysis has been 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 will 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 are 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 will 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 will be provided for at the area plan approval stage through an Addendum or other appropriate CEQA review.

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.*

Chapter 4 of 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.

Chapter 5 of 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 described in Chapter 4. The cumulative impacts analysis in Chapter 8 of the WQMP 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 Rancho Mission Viejo and downstream of the study area.

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

As reviewed previously in the responses to 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 under three climatic scenarios (All Years, Dry Years and Wet Years) under pre-development conditions and post-development conditions with PDFs.

*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-9. B-9 avoids all mainstem channels and geomorphically-active floodplain surfaces, where episodic adjustments occur.

### 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-9 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-9 does or does not concentrates development in clayey trains, with the effect of reducing yields of fine sediments in also reviewed under Geomorphology/Terrains – Principle 1. The Water Resources section discusses sediment yield and indicates that overall existing coarse sediment production will be maintained.

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

Alternative B-9 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).*

The above response addresses the manner and extent to which B-9 protects sources of coarse sediments that are important to aquatic habitat systems (also see the above consistency analysis for the Watershed Sub-basin Planning Principles). 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 Table M-5 analyzes the consistency of the different “B” Alternatives with 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 5 and 8 impact



analyses analyze both land use site planning BMPs and flow management strategies with respect to the aforementioned Creek systems for the B-9 Alternative.

*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. Chapters 4 and 5 of the WQMP review strategies for the B-9 Alternative directed toward achieving “flow duration matching” under the post-development “water balance” scenarios under average, wet and dry cycle rainfall conditions, which strategies are designed to protect stream geomorphology and avoid generating new sources of erosion.

*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-9 avoids all significant sources of coarse sediments; however, the degree to which B-9 would address the production of fine sediments in Cristianitos and upper Gabino is dependant upon the availability of funding through the Adaptive Management Program.

### 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-9 proposes no development in Chiquita Canyon above the treatment plant therefore, existing infiltration would continue. B-9 does allow limited development in smaller side canyons of the Gobernadora sub-basin and B-9 allows development in one side canyon of the lower Chiquita sub-basin. Generally B-9 has taken advantage the infiltration capacities of these sandy terrains.

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 in 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-9 Alternative in relation to these to 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-9 proposes no development in Chiquita Canyon above the treatment plant therefore, existing infiltration would continue. B-9 does allow limited development in smaller side canyons of the Gobernadora sub-basin and B-9 allows development in one side canyon of the lower Chiquita sub-basin. Generally B-9 has taken advantage the infiltration capacities of these sandy terrains.

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

Slope wetlands and their associated recharge areas area protected by Alternative B-9.

### 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.*

Chapter 5 of the WQMP analyzes potential development impacts and proposed water quality PDFs addressing pollutant loadings associated with specific terrains including TSS phosphorus and nutrients. Although the modeling assumptions use information from the L.A. 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 in-stream data and the Baseline Conditions Report to assess the modeling results.

With regard to the filtration functions associated with the specific terrains of each sub-basin, 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.

*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 [cite]. 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 one to two year stormwater flows in accordance with County DAMP requirements will receive water quality treatment prior to the discharge of stormwater runoff into native 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.

*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.*

Habitat restoration that benefits downstream areas through increased infiltration of groundwater and reduced soil erosion include:

- coastal sage scrub restoration in the Chiquita sub-basin
- coastal sage scrub/grasslands restoration in Sulphur Canyon
- restoration of the meander above the knickpoint in the Gobernadors sub-basin
- coastal sage scrub and native grasslands restoration in the Cristianitos sub-basin
- coastal sage scrub and native grasslands restoration in upper Gabino
- native grasslands restoration on Blind Canyon Mesa

Additionally, arundo removal in San Juan Creek will allow for increased growth of riparian habitat in San Juan Creek with attendant water quality benefits. The potential benefits of these restoration programs are further described in the Adaptive Management Program and associated appendices.

*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.*

Infiltration is discussed under Principles 1 and 2 above. As described above for Principle 3, the WQMP proposes a combined control system to achieve flow duration marching, 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 discussed in Chapter 7 of the WQMP.

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

Although some agricultural uses will continue under the B-9 Alternative, urban land uses will predominate and thus the potential pollutants are more urban in nature and include fine

sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides, and trash and debris. Chapter 7 of the WQMP discusses pre-and post-project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

*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, Chapter 2 of the WQMP identifies "pollutants of concern" that are anticipated or potentially could be generated by the 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. Chapter 4 reviews the combined control system elements, including size, required for each sub-basin where development is proposed. Chapter 5 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

#### Summary of Issues:

The review of the B-9 Alternative in the subsections above indicate that the major open space issues are as follows:

On an overall basis, the Alternative B-9 proposed open space meets broad-scale NCCP and SAMP guidelines. The primary issue posed by Alternative B-9 is the economic feasibility of assembling the open space, including concurrence by RMV. With reduced development impacts under B-9 (in comparison with the Proposed Project, Alternatives B-5 and B-6), the amount of dedication area required to offset development impacts is correspondingly reduced and funding for acquisition of substantial amounts of open space acreage is required (in contrast with the Proposed Project). As a consequence, major acquisitions would be required in middle Chiquita and in Cristianitos Canyon. Given limited acquisition funds from prior bond issues and governmental budgetary constraints, the feasibility of acquiring significant portions of the proposed open space will need to be demonstrated. In the context of state and federal public policy to acquire lands from willing sellers, the assessment of the feasibility of acquisition will also need to address the willingness of RMV to commit to the acquisitions required for the assemblage of the B-9 Open Space. If the economic feasibility of the proposed acquisitions could be resolved and if RMV were to concur in both the terms and conditions of the proposed acquisitions and in the development bubble configurations of the B-9 Alternative, 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 sub-basin and watershed-scale guidelines and principles reviewed above.

If all or portions of the proposed Open Space acquisitions are not feasible, alternative habitat system/development bubble configurations may need to be considered within areas proposed for public acquisition. The County of Orange Alternative B-10 includes a potential set of open space/development bubble options allowing some uses within proposed B-9 acquisition areas in the event acquisition does not occur in one or both of the proposed acquisition areas. These

land uses and the associated open space under the B-10 Alternative are reviewed in the next section.

## **1. B-9 Alternative Open Space System**

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 sub-basin and watershed-scale guidelines and principles.

## **2. Long-Term Habitat Management**

Regarding Adaptive Management, Alternative B-9 generally is consistent and helps carry out the comprehensive Invasive Species Control Plan. Alternative B-9 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-9 is consistent with the restoration proposed for Gobernadora Creek as reviewed in the Adaptive Management Program. Valley grasslands restoration and enhancement areas proposed in the NCCP Guidelines for Narrow Canyon within the Chiquita sub-basin and Upper Cristianitos Canyon are protected. However, valley grasslands restoration areas proposed for Blind Canyon Mesa would likely be largely precluded by development. The coastal sage scrub/valley grasslands restoration/enhancement areas in Upper Gabino Canyon would be consistent with the B-9. Alternative B-9 is consistent with the draft Grazing Management Plan and Fire Management Plan.

The B-9 Alternative provides the opportunity for important soils stabilization actions in Cristianitos Canyon and Upper Gabino. Both areas contain substantial land areas manifesting ongoing erosion in areas characterized by clay soils—erosion resulting from past clay mining actions in the case of Cristianitos Canyon and erosion resulting from cattle operations and local roads (some of which serve development located outside the planning area) in the case of Upper Gabino.

### **Conclusions Regarding Consistency with Subregional Conservation Planning Goals and Objectives**

To the extent that the economic return from proposed development under this alternative were insufficient to support the dedication of the specified amount of open space and adequate funding of the adaptive management program, this alternative may not be economically feasible without other sources of funding for the acquisition of dedication rights and the adaptive management program.

## **ALTERNATIVE B-10**

### **BIOLOGICAL RESOURCES**

#### **OVERVIEW OF B-10**

Alternative B-10 was prepared by the County of Orange in significant part to provide a non-acquisition alternative to the Proposed Project that address housing needs and other related project objectives, while being responsive to the sub-basin recommendations contained in the draft NCCP/HCP Planning Guidelines and Watershed Principles, particularly for the Chiquita, Cristianitos and Gabino sub-basins. In formulating the B-10 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-10 Open Space to be assembled solely through development dedications. This approach would address the uncertainties regarding the availability of public funding for acquisitions and concerns with relying on public acquisition for a significant portion of the proposed open space.

The primary differences between B-10 and the Proposed Project are:

- 1) reduction and re-arrangement of development acreage in Chiquita sub-basin (Planning Area 2) by moving proposed development acreage immediately below Tesoro High School to the development area proposed below the treatment plant,
- 2) reduction in development acreage at the top of the Gobernadora sub-basin (Planning Area 3),
- 3) increase in development acreage in Central San Juan and development in a small portion of the Verdugo sub-basin outside of Verdugo Canyon (Planning Area 4),
- 4) decrease in development areas in Cristianitos sub-basin (Planning Areas 6 and 7)
- 5) reduction and re-arrangement of development acreage in the Talega sub-basin (Planning Area 8); and
- 6) removal of development acres from upper Gabino (Planning Area 9)

Overall, the B-10 protects the Chiquita Canyon portion of the Chiquita sub-basin supports a majority of a major population in a key location of the coastal California gnatcatcher considered to be vital to sustaining gnatcatcher populations within the sub-region and to further recovery and a large block of habitat on the eastern boundary of the study area that connects with Casper's Park, Cleveland National Forest and Camp Pendleton. B-10 also places particular emphasis on protecting habitat linkages/wildlife movement corridors I and M. 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.

#### **Impact Analysis**

Section 4.9.4 reviews the impacts anticipated to occur as a result of implementation of the Proposed Project. Significant impacts are identified on the basis of the criteria established by the County for this EIR section forth in Section 4.9.4. This section examines the impacts to biological resources anticipated to result of implementation of the project alternatives. The same significance criteria are applied to the analysis of alternatives as the Proposed Project.

#### **Consistency with Subregional Conservation Planning Goals and Guidelines**

As previously reviewed in Section 4.9.4, the NCCP/HCP Working Group developed Draft NCCP/HCP Planning Guidelines (Draft NCCP Guidelines) and Draft Watershed and Sub-basin Planning Principles (Draft Watershed Principles) incorporating and applying the NCCP

Conservation Guidelines/Science Advisors Reserve Design Tenets and the SAMP Tenets Prepared by the USACE. These guidelines and principles provide guidance for decision-makers keyed to local biologic, hydrologic and geomorphic conditions. Although considered “works in progress,” by the Wildlife Agencies both the guidelines and principles represent the most current thinking regarding protection, restoration and management priorities for the resources within the study area and for this reason the County is using these in its assessment of the Alternatives reviewed in this section of the GPA/ZC EIR. The guidelines and principles have been subject to public input during public workshops associated with the NCP/HCP and SAMP/MSAA programs and are available for review on the County website.

The Draft NCCP Guidelines and Draft Watershed Principles contain both broad planning principles applicable at the watershed scale and specific planning considerations and planning recommendations applicable to specific sub-basins within the study area. The following sub-sections present consistency analyses at both scales of analysis, starting with the geographically specific sub-basin guidelines and principles.

The analyses presented in the following sub-sections will use the same methodology in assessing the level of consistency of each of the “B” Alternatives with Subregional Conservation Planning Goals and Guidelines.

## **1. Open Space/Habitat Protection**

### **B-10 Alternative Consistency with Sub-basin Planning Guidelines and Principles**

Section 4.9.4 examines the degree to which the Proposed Project is consistent with the Draft NCCP/HCP Planning Guidelines and Watershed and Sub-basin Planning Principles. This section performs the same consistency analysis for the project alternatives. Similar to the consistency analysis for the Proposed Project, the comparative analysis of alternatives is presented in matrix form. Table M-4 presents a matrix that provides “NCCP/HCP Planning Guidelines Consistency Findings.” Table M-5 presents a matrix that provides the “Watershed and Sub-basin Planning Principles Consistency Findings” using the identical approach described for Table M-4. Because these matrices are extremely detailed, tabular summaries for the two matrices are presented in Table M-6 for the NCCP/HCP Planning Guidelines, Table M-7 for the Watershed Planning Principles, Table M-8 for the Planning Species in relation to the Planning Guidelines, and Table M-9 for the Planning Species in relation to the Watershed Principles. These summary tables are accompanied in the text by narrative summaries of the findings. Table M-10 provides an overall conservation summary for the Planning Species in terms of locations, suitable habitat, *major* and *important populations* and *key locations* in the alternatives. Table M-11 provides a tabular summary of the habitat protection of the alternatives. The concluding section provides a series of analyses of Circulation System Consistency of each alternative for each sub-basin.

#### **NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-10 is 87 percent (130/150 total) consistent with the Planning Guidelines (Table M-6). Modifications to the B-10 would be necessary in four (3 percent) instances. Modifications to B-10 would be necessary to achieve consistency with Guidelines 12, 27, 91, and 112. Alternative B-10 would conflict with 15 (10 percent) of the Guidelines (7, 8, 30, 39, 54, 65, 68, 79, 86, 96, 97, 124, 125, 126, and 134).

With regard to the “could be consistent” findings, the types of modifications that would be necessary for B-10 to be consistent with Guidelines 12, 27, 91, and 112:

- 1) Development of a golf course in the Chiquita sub-basin (Planning Area 2) that would minimize impacts to the key location and major population of southern tarplant;
- 2) The inclusion of culverts or similar type facility and associated fencing in the design of Cristianitos Road in the Chiquita sub-basin and the east-facing slope of Chiquadora Ridge to facilitate ground-dwelling wildlife movement;
- 3) Development of a golf course design in the Cristianitos sub-basin (Planning Area 7) that would avoid the tenth brodiaea location of 120 flowering stalks in that sub-basin; and
- 4) A determination as to the availability of funding to support restoration efforts in upper Gabino to address soil stabilization (the expense of the restoration effort would be directly related to the type and extent of restoration effort proposed).

Upon preliminary review, modifications “1” and “2” appear to be feasible in that they involves discrete design decisions regarding Cristianitos Road and the golf courses in Planning Areas 2 and 8. The level of effort necessary to reduce erosion in upper Gabino is undetermined at this time; therefore the feasibility of modification “3” cannot be ascertained at this time.

For the “not consistent” findings, Alternative B-10 generally conflicts with the Planning Guidelines in three ways: (1) impacts to native grasslands; (2) impacts to raptor foraging habitat; and (3) limited impacts to specific species and habitat types. Alternative B-10 would conserve 10,031 acres or 67 percent of grassland habitat. Conservation of historic raptor nesting locations is approximately 79 percent and conservation of foraging habitat varies from 67 percent for grassland (foraging habitat for golden eagle and merlin) to 83 percent for riparian/woodland and forest (foraging habitat for Cooper’s hawk). Although the conservation of 57 percent of coastal sage scrub and 68 percent of gnatcatcher locations along the eastern slopes of Chiquadora Ridge fails to achieve the 80 percent conservation threshold recommended by Guideline 39 for this location, overall Alternative B-10 would protect 88 percent of locations and coastal sage scrub within the *major population/key location* in the Chiquita/Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin, and is therefore consistent with Planning Guideline 17. Across the entire RMV Open Space and existing protected open space B-10 would conserve 84 percent of coastal sage scrub and 82 percent gnatcatcher locations (16,610 acres and 593 locations respectively).

Overall Alternative B-10 achieves a high (87 percent) degree of consistency with the sub-basin protection, management and restoration recommendations.

### **Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-10 is 80 percent (33/41 total) consistent with the Watershed Principles (Table M-6). Modifications to the B-11 would be necessary to achieve consistency with Principles 27, 91, and 112. Alternative B-10 would conflict with 5 (12 percent) of the Principles (8, 10, 19, 25, and 40).

With regard to “could be consistent” findings, Principle 30 relates to restoration in the Gabino sub-basin. As noted above, a determination would be needed as to the amount and availability of funding to support restoration efforts in upper Gabino to address soil stabilization (the expense of the restoration effort would be directly related to the type and extent of restoration effort proposed). The level of effort necessary to reduce erosion in upper Gabino is undetermined at this time, therefore, the feasibility of this effort cannot be ascertained at this time. Consistency with Principles 35 and 36 could be attained by design and constructed of a collector over Cristianitos Creek that would avoid significant riparian habitat, arroyo toad breeding habitat and avoid altering streamcourse morphology.



For the “not consistent” findings, Alternative B-10 primarily conflicts with recommendations in the Chiquita, Gobernadora and Blind sub-basins as follows:

- 1) Chiquita Sub-basin: impacts to slope wetlands north of the treatment plant would occur.
- 2) Gobernadora Sub-basin: development generally avoids the main valley floor and is set back on Chiquadora Ridge, however development is allowed in the alluvial side canyons and in the valley floor in a few locations.
- 3) Trampas Sib-basin: development would impact one area of vernal pools that support fairy shrimp.
- 4) Cristianitos sub-basin: development would preclude full implementation of the restoration recommendations.
- 5) Blind Sub-basin: development in Planning Area 8 (Northrup Grumman) is concentrated in the Blind Sub-basin on both ridge tops and the valley bottom in order to avoid the vast majority of the San Mateo watershed in the planning area.

Overall Alternative B-10 achieves a high (87 percent) degree of consistency with the Watershed Principles and has limited conflicts (12 percent).

### **Planning Species – NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-10 has high consistency with the Planning Guidelines for 27 of the 28 Planning Species.<sup>3</sup> The average Planning Species consistency for Alternative B-10 is 87 percent. As shown in Table M-6, the consistency percentages for 27 Planning Species range from a low of 73 percent consistent for the grasshopper sparrow to 100 percent consistent for the arroyo toad, least Bell’s vireo, southwestern willow flycatcher, golden eagle, yellow warbler, yellow-breasted chat, chaparral beargrass and salt spring checkerbloom. Twenty-one species achieve at least 80 percent consistency, six species do not (grasshopper sparrow, San Diego and Riverside Fairy Shrimp, merlin, white-tailed kite, and tri-colored blackbird).

For the California gnatcatcher, the B-10 Alternative is 91 percent consistent and 9 percent not consistent. The two Guidelines not met for the gnatcatcher are Guideline 39, which recommends 80 percent conservation of coastal sage scrub and gnatcatcher locations on Chiquadora Ridge and Guideline 68, which recommends maintaining the upland east-west habitat linkage south of the artificial lake in Trampas Canyon. Although Guideline 39 is not met, overall the recommended threshold of at least 80 percent conservation of coastal sage scrub and gnatcatcher locations is achieved in the Chiquita/Wagon Wheel canyons sub-basin *major population/key location*. Guideline 68 is not met under any of the alternatives because of the narrow strip of habitat that would remain between the Trampas Canyon development area and the Talega development to the south. This linkage probably is adequate for avian movement and smaller wildlife, but likely is constrained for larger species such as bobcat. This linkage probably is not crucial for the bobcat because other east-west corridors such as San Juan Creek will remain intact.

For the brodiaea the B-10 is 80 percent consistent, 7 percent “could be consistent” and 13 percent not consistent. The “could be consistent” finding is for Guideline 91 regarding avoidance of ten of thirteen small brodiaea populations in Cristianitos Canyon. Achievement of all of this Guideline is considered feasible under the B-10. B-10 is not consistent with Guideline 8, which recommends avoiding two of the four small populations of brodiaea in lower Chiquita Canyon in addition to the large population on Chiquadora Ridge. Under B-10, all four

<sup>3</sup> The mud nama was excluded from this analysis and all following analyses because it was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives.

small populations of brodiaea would be impacted. B-6 is also not consistent with Guideline 97 regarding translocation of salvaged brodiaea to CSS/VGL restoration sites.

For the non-listed Planning Species, the B-10 Alternative also has high consistency across the major species-habitat associations (Table M-6). For coastal sage scrub species, the B-10 is 81 percent consistent for the cactus wren, and for the orange-throated whiptail and San Diego horned lizard the B-10 is 81 and 93 percent consistent, respectively. For grassland species, the B-10 is 73 percent consistent for the grasshopper sparrow and 75 percent consistent for the merlin. For riparian/woodland species, the B-10 is 85 percent consistent for the Cooper's hawk, 78 percent consistent for the white-tailed kite, and 100 percent consistent for the yellow warbler and the yellow-breasted chat. For planning area-wide species, B-10 is 100 percent consistent for the golden eagle, 95 percent consistent for the mountain lion, and 91 percent consistent for the mule deer. As noted above, for non-listed plants the B-10 is 100 percent consistent for chaparral beargrass and salt spring checkerbloom.

Overall, Alternative B-10 would provide high to very high protection for all of the Planning Species.

### **Planning Species – Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-10 is moderately consistent with the Watershed Principles for the ten Planning Species for which they are directly relevant (i.e., aquatic/riparian species) (Table M-7). Overall, B-10 is 78 percent consistent with the Watershed Principles, 12 percent not consistent, and ten percent “could be consistent” for the Planning Species. The consistency findings are tightly distributed, with a low of 78 percent consistent for least Bell's vireo, yellow-breasted chat and yellow warbler to 93 percent consistent for the tricolored blackbird.

B-10 is 79 percent consistent for the arroyo toad, 13 percent “could be consistent” and ten percent not consistent. The two “could be consistent” findings are for Principle 30 and 36. Principle 30 recommends protecting the Gabino headwaters through restoration of existing gullies using a combination of slope stabilization, grazing management and native grassland and/or scrub revegetation. This Principle is a “could be consistent” because the soil stabilization program would be costly and the availability of sufficient funding would need to be determined, as described above. Principle 36 calls for the maintenance of hydrologic and sediment transport processes to protect the integrity of arroyo toad breeding habitat in lower Gabino Creek. B-10 is a “could be consistent” with this principle due to the construction of a collector road that would need to comply with the recommended action for this principle.

B-10 is 73 percent consistent for the least Bell's vireo and 13 percent not consistent. For the southwestern willow flycatcher, B-10 is 83 percent consistent and 17 percent not consistent. B-10 is not consistent for both the vireo and willow flycatcher with Principle 10, which recommends a set back of development from the valley floor in Gobernadora and concentration of development on Class D soils in order to emulate current hydrologic patterns, because the proposed development area is situated along the edge of the valley floor.

For the non-listed Planning Species, B-10 is not consistent with Principle 10 for the Cooper's hawk, tricolored blackbird, white-tailed kite, yellow warbler and yellow-breasted chat. In addition, B-10 is “could be consistent” with Principle 35 for Cooper's hawk, white-tailed kite, yellow warbler, and yellow-breasted chat. Principle 35 recommends limiting development and other uses in Blind Canyon to areas away from the major oak woodlands, which provide suitable habitat for these species. Proposed development under B-10 would focus on the grazed mesa and away from the oak woodlands in Blind Canyon. For the tricolored blackbird B-10 is be consistent with Principle 5, which recommends natural treatment systems for water quality

treatment and storm detention in sandy soils in the major side canyons and valley floor of Chiquita Canyon. For the western spadefoot toad and southwestern pond turtle B-10 could be consistent with Principle 30, as described above. This Principle is a “could be consistent” because the soil stabilization program would be costly and the availability of sufficient funding would need to be determined.

Overall B-9 has moderate consistency (78 percent) with the Watershed Principles

### **Circulation Systems Consistency Analysis**

In order to portray the potential impacts of the alternative circulation systems, this section will analyze the circulation systems with regard to the sub-basin guidelines/principles. “Connectivity” considerations are based on the NCCP/HCP Planning Guidelines (General Policy 3.3) and the accompanying “Habitat Linkages and Wildlife Corridors Map and are incorporated explicitly into the Planning Guidelines sub-basin Protection Recommendations. These “connectivity” considerations provide criteria for reviewing potential impacts of the alternative circulation systems. Those portions of the circulation systems located *outside* the “development bubbles” are reviewed for consistency with the specific Guidelines and Principles applicable to each sub-basin. For the portions of the circulation systems located *within* “development bubbles,” the potential impacts already are reflected in the overall delineation of the particular “development bubble” and do not require separate analysis with respect to the project alternatives. It should be noted that although project alternatives B-5 through B-9 are analyzed without the FTCS, project alternatives B-10 and B-11 specifically assume the FTCS will be constructed and as a result have a different circulation system. This circulation system is reviewed for consistency.

### **San Juan Creek Watershed**

#### **1. Chiquita Sub-basin**

The review of the different circulation systems reflects two different assumptions: (1) MPAH proposals proposed or identified in conjunction with the different Alternatives; (2) and the circulation elements shown on the existing MPAH (with the exception of the SOCTIIP for the reasons previously noted).

Project Alternative B-10 proposes the same three MPAH changes as the B-9 alternative; thus, the consistency analysis for these changes in B-9 would also apply to the B-10 alternative. The internal north-south collector road to the east of the treatment plant would impact ground-dwelling wildlife movement in Habitat Linkage/Wildlife Movement Corridor “E.” FTCS from the Gobernadora “development bubble” moving north would have similar impacts on Habitat Linkage “D.” Avian wildlife movement would not be impacted.

#### **2. Gobernadora Sub-basin**

Project Alternative B-10 assumes that FTCS will be constructed in approximately the Far East alignment. In order to be consistent with the sub-basin recommendations, the Far East alignment would have to be elevated above the valley floor, bridge Gobernadora Creek and be constructed in such a way as to allow for implementation of the Gobernadora Creek restoration recommendations. The Far East alignment has been aligned to avoid impacting Sulphur Canyon and thus would be consistent with the Sulphur Canyon restoration recommendations that are also an element of the Gobernadora Creek restoration plan.

### **3. Trampas Sub-basin and Central San Juan Sub-basin**

All of the alternatives propose the same arterial crossing of San Juan Creek and thus would have the same physical impacts. In addition to the arterial crossing of San Juan Creek, Project Alternatives B-10 and B-11 also assume FTCS will be constructed in approximately the Far East alignment. This would require a second crossing of San Juan Creek. Impacts from FTCS would generally be similar to those of the arterial crossing, i.e., Temporary construction impacts and permanent impact associated with placement of piers. Project Alternatives B-9, B-10, and B-11 propose changing Ortega Highway from a State Highway to a local recreational access road while the other alternatives likely would retain the current function of Ortega Highway; however, these differences in recommendations for Ortega Highway would not cause new physical impacts, but instead would affect potential arroyo toad recovery actions per the prior discussion of consistency with the NCCP sub-basin recommendations.

### **4. Verdugo Sub-basin**

The B-10 circulation system is the same as B-9 in the Verdugo sub-basin; thus the consistency analysis is the same as provided for the B-9.

## **San Mateo Creek Watershed**

### **1. Cristianitos Sub-basin**

In the Cristianitos sub-basin, the B-10 circulation network proposes utilizing a combination of existing, but upgraded ranch roads to access the proposed development in Cristianitos Canyon and Cristianitos Meadows in addition to the FTCS. Upgrading the existing ranch roads would 1) avoid the headwaters of Cristianitos Creek; (2) provide the opportunity to implement the CSS/VGL restoration recommendations; (3) avoid the alkali wetlands/creek riparian areas; and (4) preserve opportunities for stream stabilization opportunities and thus be consistent with the sub-basin recommendations. FTCS in the Cristianitos sub-basin would conflict with the restoration recommendations for the sub-basin, may impact the alkali wetlands and the headwaters of Cristianitos Creek. FTCS would also impact habitat linkage/wildlife movement corridor N. FTCS would not be consistent with the sub-basin recommendations.

### **2. Gabino and Blind Canyons Sub-basin**

Similar to B-9, Project Alternative B-10 proposes to upgrade existing Cristianitos Road to County standards and construct FTCS in generally the Far East alignment. Regarding the upgrade of Cristianitos Road, the consistency analysis provided for B-9 would apply. FTCS would likely result in temporary construction impacts and permanent impacts to Gabino Creek associated with placement of bridge piers in Gabino Creek.

### **3. La Paz Sub-basin**

Project Alternative B-10 does not provide for development within the La Paz sub-basin and therefore would be consistent with the sub-basin recommendations.

### **4. Talega Sub-basin**

The circulation system for Project Alternative B-10 proposes construction of a bridge over Cristianitos Creek connecting existing Avenida Pico to existing Cristianitos Road within the Other Planning Area. Internal residential streets only would be constructed in the Talega sub-basin. Construction of Cristianitos bridge over Cristianitos Creek would not affect dry

season and stormwater flows, and thus would not cause any potential conflict with these recommendations.

## 5. Other Planning Area

Within the Other Planning Area, B-10 proposes the same Cristianitos Road bridge and upgrades as discussed above for B-9; therefore, the B-9 consistency analysis would apply. However, in addition to the Cristianitos Road bridge, this alternative also assumes the FTCS would be constructed in generally the Far East alignment. The Far East alignment would impact habitat linkage N, potentially affecting gnatcatcher connectivity from northerly sub-basins, particularly the Cristianitos sub-basin, to populations in lower Cristianitos Creek/San Mateo Creek. Breeding and foraging habitat and movement opportunities within the Cristianitos streamcourse and adjacent alluvial terraces for the arroyo may be affected by the Far East alignment. The east-west habitat linkage from Gabino Creek to the confluence with Cristianitos Creek to protect wildlife movement from Gabino Canyon and the Donna O'Neill Conservancy may be impacted by construction of the FTCS in the Far East Alignment. The FTCS in the Far East alignment would not be consistent with the sub-basin planning recommendations.

### **B-10 Alternative Consistency with Landscape Level SRP Tenets, SAMP Tenets and Baseline Conditions Watershed Planning Principles**

**B-10 Alternative Open Space Features:** The proposed B-9 Open Space would create three large blocks of habitat that are both connected with one another and with other large scale protected habitat areas: (a) 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 23,691 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; (b) a 6,311 acre block of habitat within the Chiquita sub-basin extending from the Chiquita Canyon conservation easement area in the northern portion of the 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 bubble; (c) a 1,628 acre block of habitat located in the southwest portion of the proposed Open Space adjacent to the City of San Juan Capistrano encompassing the entire length of San Juan Creek as it flows through the RMV property and a significant block of habitat extending from the southern bank of San Juan Creek onto the Radio Tower Road mesa.

### **B-10 Alternative Consistency with the SRP/Science Advisors Tenets of Reserve Design**

- **Tenet 1: Conserve target species throughout the planning area**

As described above for the B-4 Alternative, 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 was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives. For the listed Planning Species, Alternative B-10 has medium to very high consistency with the NCCP/HCP Guidelines (see discussion of Planning Species above and consistency analysis in Table M-10). B-10 protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo, and southwestern willow flycatcher (see descriptions in Table M-10). 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 82 percent of locations and 84 percent of coastal sage scrub habitat, including 84 percent of locations and 87 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 82 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.

B-10 provides medium to very high protection for the unlisted Planning Species (see discussion of Planning Species above and consistency analysis in Table M-10). *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 Table M-10, moderate to very high protection would be provided for *key locations* of all of these species, with overall conservation ranging from 66 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, 83 percent of cactus wren locations, 82 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 83 percent of suitable habitat for the three species, would be protected under the B-10 Alternative. For the golden eagle and merlin approximately 65 percent of foraging habitat would be protected and both species likely would persist in the subregion. Under B-10, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

- **Tenet 2: Larger Reserves are better.**

The B-10 Alternative is comprised of four major habitat blocks: the Eastern block (21,867 acres), the Upper Chiquita block (3,209 acres), the Lower Chiquita block (4,245 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total about 31,153 acres and account for about 71 percent of the B-10 Open Space. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest and Camp Pendleton.

- **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 three areas where habitat areas linking the four habitat blocks narrow to less than 2,000 feet in width are the linkage between Ladera Ranch and Las Flores (linkage B), the linkage along Chiquadora Ridge (linkage G) and the linkage along San Juan Creek between the Gobernadora and Trampas Canyon and between the Gobernadora and East Ortega development areas (linkage J).

- **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 M-28. As shown in Table M-28, the vast majority of the four habitat blocks that would be protected in the B-10 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 M-28, 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.

**TABLE M-28  
MAJOR VEGETATION COMMUNITIES WITHIN  
THE B-10 ALTERNATIVE HABITAT BLOCKS**

Vegetation Community/Land Cover Type	Habitat Block Acres <sup>1</sup>						
	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 <sup>2</sup>	439	429 <sup>2</sup>	368	41	28
Developed/Disturbed (% of Total in Block)	100 (5%)	160 (5%)	103 (9%)	95 (2%)	65 (3%)	256 (1%)	117 (1%)
<b>Total in Block</b>	<b>1,832</b>	<b>3,209</b>	<b>1,132</b>	<b>4,245</b>	<b>2,462</b>	<b>21,867</b>	<b>8,609</b>

<sup>1</sup> 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.

<sup>2</sup> 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

- **Tenet 5: Reserves should be biologically diverse.**

Table M-29 shows the amount and percentage of the major vegetation communities protected in the B-10 Open Space, both in the overall B-10 Open Space and broken down by watersheds. Overall, the B-10 protects the large majority of the major vegetation communities. Protection ranges from a low of 67 percent for grassland to a high of 84 percent for coastal sage scrub and

chaparral. Other than grassland, the next lowest overall conservation percentage of the major vegetation communities is 83 percent for woodland and forest and riparian.

In contrast to Alternatives B-5, B-8 and B-9, and similar to Alternatives B-4, B-6, and B-11, B-10 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 two watersheds are relatively balanced for coastal sage scrub and grassland. For example, 84 percent of coastal sage scrub in the San Juan Watershed is protected compared to 88 percent in the San Mateo Watershed. Likewise, for grassland protection is 68 percent in the San Juan Watershed and 72 percent in the San Mateo Watershed. On the other hand, the protection of riparian is substantially higher in the San Mateo Watershed, with 92 percent protection versus 83 percent in the San Juan Watershed. Similarly, 95 percent of chaparral is protected in the San Mateo Watershed compared to 76 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 M-29. The balanced protection of coastal sage scrub and grassland is illustrated by the 0 and 1 percent deviations, respectively, from existing conditions in the San Juan and San Mateo watersheds. For example, 76 percent of the total coastal sage scrub in both the planning area and Open Space occurs in the San Juan Watershed. In contrast, 58 percent of chaparral in the planning area is in the San Juan Watershed, but only 52 percent of chaparral in the B-10 Open Space is in San Juan, an under-representation of six percent. Again, this discrepancy reflects the large amount of chaparral in the East Ortega development planning area. Overall, however, with the exception of chaparral, and to a lesser extent riparian, the B-10 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 M-29  
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE  
COMBINED B-10 OPEN SPACE AND ALREADY PROTECTED OPEN SPACE  
WITHIN WATERSHEDS**

Vegetation Community	Planning Area		B-10 Alternative		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	19,724		16,610 (84%)		
San Juan Creek	15,056	76% 12,682 (84%) 76% 0%	5,574 (68%)	56%	+1%
		San Mateo Creek 3,772 19% 3,335 (88%) 20% +1%			
		Other Watersheds <sup>2</sup> 896 5% 593 (66%) 4% -1%			
		Chaparral 7,333 6,131 (84%)			
		San Juan Creek 4,219 58% 3,217 (76%) 52% -6%			
		San Mateo Creek 2,748 37% 2,626 (95%) 43% +6%			
		Other Watersheds 366 5% 288 (79%)			

**TABLE M-29 (Continued)  
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE  
COMBINED B-10 OPEN SPACE AND ALREADY PROTECTED OPEN SPACE  
WITHIN WATERSHEDS**

Vegetation Community	Planning Area		B-10 Alternative		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
		5% 0%			
		Grassland 14,979			
		10,031 (67%)			
		San Juan Creek 8,215 55%			
San Mateo Creek	3,093	21%	2,228 (72%)	22%	+1%
Other Watersheds	3,671	24%	2,229 (61%)	22%	-2%
Woodland & Forest	1,824		1,513 (83%)		
San Juan Creek	1,537	84%	1,286 (85%)	85%	+1%
San Mateo Creek	257	14%	209 (81%)	14%	0%
Other Watersheds	30	2%	18 (60%)	1%	-1%
Riparian	5,213		4,3348 (83%)		
San Juan Creek	3,967	76%	3,285 (83%)	75%	-1%
San Mateo Creek	1,024	20%	946 (92%)	22%	+2%
Other Watersheds	222	4%	117 (53%)	3%	-1%
<sup>1</sup> Acreages exclude Existing Use areas. <sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas  Table M-11 compares the representation of the major vegetation communities in the B-10 Alternative with their representation in the planning area as a whole. The B-10 Open Space exhibits very modest deviations from existing conditions both overall and within watersheds. Coastal sage scrub is over-represented by 3 percent in the B-10 Open Space compared to grassland, which is under-represented by 4 percent overall. The other major vegetation communities are represented in the B-10 Open Space in essentially the same proportion as they occur in the planning area.  Source: Dudek 2004					

**TABLE M-30  
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES  
UNDER THE COMBINED B-10 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE**

Vegetation Community	Planning Area		B-10 Alternative		
	Planning Area Acres <sup>1</sup>	% of Planning Area	Acres (% of total)	% of B-10 Open Space and Already Protected Open Space	% Deviation from Planning Area Distribution
Coastal Sage Scrub	19,724	40%	16,610 (84%)	43%	+3%
San Juan Creek	15,056	31%	1,682 (84%)	33%	+2%
San Mateo Creek	3,772	8%	3,335 (88%)	9%	+1%
Other Watersheds <sup>2</sup>	896	1%	593 (66%)	1%	0%
Chaparral	7,333	15%	6,131 (84%)	16%	+1%
San Juan Creek	4,219	9%	3,217 (76%)	8%	-1%
San Mateo Creek	2,748	5%	2,626 (95%)	7%	+2%
Other Watersheds	366	1%	288 (79%)	1%	0%
Grassland	14,979	30%	10,031 (67%)	26%	-4%
San Juan Creek	8,215	17%	5,574 (68%)	14%	-3%
San Mateo Creek	3,093	6%	2,228 (72%)	6%	0%
Other Watersheds	3,671	7%	2,229 (61%)	6%	-1%
Woodland & Forest	1,824	4%	1,513 (83%)	4%	0%
San Juan Creek	1,537	3%	1,286 (85%)	3%	0%
San Mateo Creek	257	1%	209 (81%)	1%	0%
Other Watersheds	30	<1%	18 (60%)	<1%	0%
Riparian	5,213	11%	4,348 (83%)	11%	0%
San Juan Creek	3,967	8%	3,285 (83%)	8%	0%
San Mateo Creek	1,024	2%	946 (92%)	2%	0%
Other Watersheds	222	<1%	117 (53%)	<1%	0%

<sup>1</sup> Acreages exclude Existing Use areas.

<sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Table M-11 compares the elevational distribution of the major vegetation communities in the planning area and the B-10 Open Space. As with the other alternatives, the protection percentages increase with elevation for all the major vegetation communities. A comparison of the “% Within Vegetation Community” columns for the planning area and B-10 Open Space shows that the elevational distributions of the vegetation communities in the B-10 Open Space 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 6 percent under 800 feet and over-represented by 5 percent above 800 feet. As with the other alternatives, the protection of riparian vegetation shows relatively little elevational bias, with a slight under-representation of 2 percent under 800 feet and over-representation of 1 percent over 800. The B-10 Open Space has a moderate under-representation of 5 percent of chaparral at 400 to 800 feet primarily due to impacts that would occur in the East Ortega development planning area. Likewise, grassland is under-represented at the lowest elevation range (<400 ft), with 5 percent less in the Open Space (22 percent) compared to existing conditions (27 percent).

Source: Dudek 2004

**TABLE M-31  
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE  
COMBINED B-10 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE COMPARED TO PLANNING AREA**

Vegetation Community	Elevation Range (ft.)	Planning Area		B-10 Alternative		
		Planning Area Acres <sup>1</sup>	% Within Vegetation Community	Open Space Acres (% of Total)	% Within Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	0-400	1,414	7%	873	5%	-2%
	401-800	9,825	50%	7,660	46%	-4%
	>1,200	1,923	10%	1,876	11%	+1%
Total		19,724		16,611		
Chaparral	0-400	166	2%	111	2%	0%
	401-800	4,640	63%	3,580	58%	-5%
	801-1,200	2,010	27%	1,927	31%	+4%
	>1,200	518	7%	514	8%	+1%
Total		7,334		6,132		
Grassland	0-400	4,005	27%	2,235	22%	-5%
	401-800	8,121	54%	5,551	55%	+1%
	801-1,200	2,551	17%	1,957	19%	+2%
	>1,200	299	2%	287	3%	+1%
Total		14,976		10,030		
Woodland & Forest	0-400	174	10%	113	7%	-3%
	401-800	1,005	55%	796	53%	-2%
	801-1,200	509	28%	469	31%	+3%
	>1,200	135	7%	135	9%	+2%
Total		1,823		1,513		
Riparian	0-400	1,289	25%	1,062	24%	-1%
	401-800	3,088	59%	2,529	48%	-1%
	801-1,200	730	14%	652	15%	+1%
	>1,200	106	2%	104	2%	0%
Total		5,213		4,347		
<sup>1</sup> Acreages exclude Existing Use areas.						
Source: Dudek 2004						

- **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-10 proposed circulation system compliance with Draft NCCP 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. 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 NCCP 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-10 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 Northrup 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 Northrup 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 Wetland Habitat Restoration Plan and away from the Sulphur Canyon tributary to the creek system. Implementation of the Invasive Species Control Plan 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-10 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 (the Grazing Management Plan includes a low-cost proposal that has the potential to attenuate, to some degree, existing erosion problems).

### **B-10 Alternative Consistency with SAMP Tenets**

#### SAMP Tenet 1: No net loss of acreage and functions of waters of the U.S./State

As reviewed under the Watershed Principles functions, Alternative B-10 has been designed to protect the major terrains/hydrology functions of the planning areas, as well as the major riparian/wetlands systems. With regard to net acreage of waters of the U.S./State, Alternative B-10 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 due to development within the development bubbles.

SAMP Tenet 2: Maintain/restore riparian ecosystem integrity

Given its focus on protecting and, where feasible and beneficial, restoring each of the major canyon systems, Alternative B-10 addresses this tenet. Restoration of areas currently generating fine sediments in the Cristianitos sub-basin would be accomplished via development of the proposed golf course and low density residential areas. Regarding the soil stabilization actions required for Upper Gabino, it is not clear whether Alternative B-10 can provide the basis for soils restoration actions important to restoring riparian ecosystem integrity in this, since no development is proposed in upper Gabino.

SAMP Tenet 3: Protect headwaters

Each of the headwaters areas not already urbanized is protected. Significant enhancement/restoration is proposed for Upper Cristianitos Creek and Upper Gabino Canyon; however, soils re-configuration proposed for Upper Gabino may be difficult to achieve in economic terms without any development activities to help defray potentially significant costs. The headwaters area of Trampas Creek is proposed for development but this area has been altered in conjunction with existing mining operations.

SAMP Tenet 4: Maintain/protect/restore riparian corridors

All major riparian corridors are protected. Alternative B-10 is consistent with the riparian restoration proposals set forth in the Adaptive Management Program.

SAMP Tenet 5: Maintain/and or/restore floodplain connection

Alternative B-10 maintains all existing areas of floodplain connection. Alternative B-10 is consistent with the Adaptive Management Program proposal to restore 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) Alternative B-10 does not propose any actions that would be contrary to such processes.

SAMP Tenet 6: Maintain and/or restore sediment sources and transport equilibrium

Consistent with the Watershed Planning Principles, B-10 protects all of the significant sources of coarse sediment, except for one side canyon in the Verdugo sub-basin, in order assure the continued generation of such sediments important for riparian/wetlands habitat systems; in some areas, development is focused 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. Alternative B-10 is consistent with the vegetation restoration proposals 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

All major riparian corridors are adequately buffered from development bubbles. Where a golf course is proposed in the Blind Canyon Mesa/Northrup Grumman Ridge development bubble, setbacks from arroyo toad areas are consistent with the prior critical habitat designation for the arroyo toad and would protect toad habitat.

SAMP Tenet 8: Protect riparian areas and associated habitats of listed and sensitive species

As reviewed under consistency with the SRP/Science Advisors Tenet 1, riparian areas associated with listed planning species (including listed species) would be substantially protected. Sensitive species dependent on riparian habitats but not included for protection as an Identified Species have been protected as reviewed in section 4.9.

**B-10 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.*

**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, site design BMPs for Alternative 10 used in identifying development bubbles 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. New development under this Alternative generally avoids placing impervious surfaces in the major tributary side canyons; however, B-10 does allow limited development in smaller side canyons of the Gobernadora side canyon and development in one side canyon of the lower Chiquita sub-basin.

**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-10 Alternative provides for directing drainage to major tributary side canyons in Chiquita and for utilizing the infiltration characteristics of sandy terrains. With regard to Gobernadora Canyon, the B-10 Alternative addresses existing conditions characterized by excessive surface and subsurface water flows from upstream development with flow duration and discharge strategies under scenarios with and without a flow modulation basin just below Coto de Caza.

**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.*

Alternative B-10 generally concentrates development in clayey terrains, thereby emulating the high runoff rates characteristic of clayey terrains. The B-10 Alternative proposes to remedy

existing erosion in the Cristianitos sub-basins in conjunction with golf course/residential development. B-10 proposes no development in upper Gabino, therefore the ability of the B-10 to address existing erosion problems in this sub-basin has not been resolved due to the question of the adequacy of funding for the Adaptive Management Program.

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 Adaptive Management Program proposes the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. Table M-4 addresses the consistency of the B-10 Alternative with the restoration recommendations of the Adaptive Management Program.

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

Figure 6 of the Watershed Planning Principles depicts the locations of crystalline terrains. Alternatives B-10 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-10 Alternative with the sub-basin watershed principles is reviewed in Table M-5. 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-10 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.

## **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)*

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 U.S. 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).

*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.*

As reviewed in Chapter 3 of the WQMP:

"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 Canada Chiquita Sub-basin was divided into 18 catchments."

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; . . . . (5) changes in the infiltration of surface/soil water to groundwater [sub-part (4) involving "potential changes in sediment supply" is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]*

Each of the four elements of Principle 3 cited at the introduction to this subsection is addressed by the above components of the WQMP. As noted previously, the WQMP analyses have been prepared for the B-4 and B-9 Alternatives, with qualitative analyses for the other B Alternatives undertaken based on the B-4 and B-9 quantitative analyses. Chapter 7 of the WQMP addresses findings of significance for the "B" Alternatives analyzed qualitatively.

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 is 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.*

To address County Flood Control planning and management considerations, a HEC-1 analysis has been 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 compared with 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 will 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 are 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 will 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 will be provided for at the area plan approval stage through an Addendum or other appropriate CEQA review.

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.*

Chapter 4 of 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 (see discussion below) has been differentiated from localized processes influenced by specific land uses.

Chapter 5 of 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 described in Chapter 4. The cumulative impacts analysis in Chapter 8 of the WQMP 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 Rancho Mission Viejo property planning area and downstream of the planning area.

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

As reviewed previously in the responses to 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 under three climatic scenarios (All Years, Dry Years and Wet Years) under pre-development conditions and post-development conditions with PDFs.

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.

B-10 has considered the role of episodic storm events in transporting sediment, re-organizing channel/floodplain structure, and re-generating riparian plant communities as B-10 avoids mainstem channels and geomorphically-active floodplains surfaces.

## **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-10 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-10 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.*

Alternatives B-10 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, B-10 avoids significant sources of coarse sediment. 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 Table M-5 analyzes the consistency of the B-10 with 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-10.

*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. Chapters 4 and 5 of the WQMP review strategies for the B-4 and B-9 Alternatives directed toward achieving “flow duration matching” under the post-development “water balance” scenarios under average, wet and dry cycle rainfall conditions, which strategies are designed to protect stream geomorphology and avoid generating new sources of erosion.

*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.*

Consistency with this policy has also been reviewed previously B-10 would address the existing sources of fine sediments from upper Cristianitos Creek, but not upper Gabino. B-10 is protective of existing sources of coarse sediment.

### 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.*

As noted above for Principle 1, the B-10 Alternative does take advantage of the infiltration opportunities associated with sandy soils in Chiquita and Gobernadora.

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 in discussed under Principle 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-5 Alternative in relation to these to 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.*

As noted previously, the B-10 Alternative would maintain infiltration and groundwater recharge in the main valleys of Chiquita and Gobernadora sub-basins and their wide and sandy tributaries.

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

Those slope wetlands which are avoided by the B-10 or those slope wetlands for which mitigation in the form of avoidance is proposed, the recharge area for the slope wetland is also considered as part of the avoidance.

## **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.*

Chapter 5 of the WQMP analyzes potential development impacts and proposed water quality PDFs addressing pollutant loadings associated with specific terrains including TSS phosphorus and nutrients. Although the modeling assumptions use information from the L.A. 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 in-stream data and the Baseline Conditions Report to assess the modeling results.

*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 [cite]. 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 1-2 year stormwater flows in accordance with County DAMP requirements will receive water quality treatment prior to the discharge of stormwater runoff into native 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.

*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.*

Habitat restoration that benefits downstream areas through increased infiltration of groundwater and reduced soil erosion include:

- coastal sage scrub restoration in the Chiquita sub-basin
- coastal sage scrub/grasslands restoration in Sulphur Canyon
- restoration of the meander above the knickpoint in the Gobernadora sub-basin
- coastal sage scrub and native grasslands restoration in upper Gabino

Additionally, arundo removal in San Juan Creek will allow for increased growth of riparian habitat in San Juan Creek with attendant water quality benefits. The potential benefits of these restoration programs are further described in the Adaptive Management Program and associated appendices.

*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.*

Infiltration is discussed under Principles 1 and 2 above. As described above for Principle 3, the WQMP proposes a combined control system to achieve flow duration marching, 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 discussed in Chapter 7 of the WQMP.

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

Although some agricultural uses will continue under the B-10 Alternative, urban land uses will predominate and thus the potential pollutants are more urban in nature and include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides and trash and debris. Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

*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, Chapter 2 of the WQMP identifies “pollutants of concern” that are anticipated or potentially could be generated by the 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. Chapter 4 reviews the combined control system elements, including size, required for each sub-basin where development is proposed. Chapter 7 of the WQMP discusses pre-and post project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

#### Summary of Issues:

The review of the B-10 Alternative in the subsections above indicate that the major open space issues are as follows:

### **1. B-10 Alternative Open Space System**

The Alternative B-10 proposed open space meets broad-scale NCCP and SAMP guidelines. The B-10 alternative proposes very similar development acreage (7,683 vs. 7,694) as the Proposed Project. However, the B-10 strategically re-arranges development acres to further protect resources in the Chiquita, Cristianitos, and Gabino sub-basins. B-10 also seeks to enhance the protection of habitat linkage/wildlife movement corridor I leading from Sulphur Canyon (linkage H) to Casper’s Park by decreasing development at the top of Gobernadora and linkage M by removing development from upper Gabino. The primary differences between B-10 and the Proposed Project are:

- 1) reduction and re-arrangement of development acreage in Chiquita sub-basin (Planning Area 2) by moving proposed development acreage immediately below Tesoro High School to the development area proposed below the treatment plant,
- 2) reduction in development acreage at the top of the Gobernadora sub-basin (Planning Area 3),
- 3) increase in development acreage in Central San Juan and development in a small portion of the Verdugo sub-basin outside of Verdugo Canyon (Planning Area 4),
- 4) decrease in development areas in Cristianitos sub-basin (Planning Areas 6 and 7);
- 5) reduction and re-arrangement of development acreage in the Talega sub-basin (Planning Area 8); and
- 6) removal of development acres from upper Gabino (Planning Area 9).

### **2. Long-Term Habitat Management**

Regarding Adaptive Management, Alternative B-10 generally is consistent and helps carry out the comprehensive Invasive Species Control Plan. Alternative B-10 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-10 is consistent with the restoration proposed for Gobernadora Creek as reviewed in the Adaptive Management Program. Valley grasslands restoration and enhancement areas proposed in the NCCP Guidelines for Narrow Canyon within the Chiquita sub-basin are protected. However, valley grasslands restoration areas proposed for Blind Canyon Mesa and

Upper Cristianitos Canyon would likely be largely precluded by development. The coastal sage scrub/valley grasslands restoration/enhancement areas in Upper Gabino Canyon would be consistent with the B-10. Alternative B-10 is consistent with the draft Grazing Management Plan and Fire Management Plan.

Upper Gabino contains substantial land areas manifesting ongoing erosion in areas characterized by clay soils – erosion resulting from cattle operations and local roads (some of which serve development located outside the planning area) in the case of Upper Gabino. These issues would need to be addresses by the AMP.

### **Conclusions Regarding Consistency with Subregional Conservation Planning Goals and Objectives**

Alternative B-10 is generally consistent with subregional conservation planning goals and objectives. However, the adequacy of funding for soils stabilization required to address existing erosion in areas generating fine sediments in upper Gabino needs to be confirmed.



## **ALTERNATIVE B-11**

### **BIOLOGICAL RESOURCES**

#### **OVERVIEW OF B-11**

Alternative B-11 was prepared by the County of Orange to address housing needs and other related project objectives, while acknowledging the sub-basin recommendations contained in the draft NCCP/HCP Planning Guidelines and Watershed Principles. The open space proposed under B-11 focuses on providing a large block of habitat in the eastern portion of the San Mateo watershed, while preserving habitat linkages/wildlife movement corridors along mainstem creeks in both San Juan and San Mateo watersheds.

#### **Impact Analysis**

Section 4.9.4 reviews the impacts anticipated to occur as a result of implementation of the Proposed Project. Significant impacts are identified on the basis of the criteria established by the County for this EIR section forth in Section 4.9.4. This section examines the impacts to biological resources anticipated to result of implementation of the project alternatives. The same significance criteria are applied to the analysis of alternatives as the Proposed Project.

#### **Consistency with Subregional Conservation Planning Goals and Guidelines**

As previously reviewed in Section 4.9.4, the NCCP/HCP Working Group developed Draft NCCP/HCP Planning Guidelines (Draft NCCP Guidelines) and Draft Watershed and Sub-basin Planning Principles (Draft Watershed Principles) incorporating and applying the NCCP Conservation Guidelines/Science Advisors Reserve Design Tenets and the SAMP Tenets Prepared by the USACE. These guidelines and principles provide guidance for decision-makers keyed to local biologic, hydrologic and geomorphic conditions. Although considered “works in progress,” by the Wildlife Agencies both the guidelines and principles represent the most current thinking regarding protection, restoration and management priorities for the resources within the study area and for this reason the County is using these in its assessment of the Alternatives reviewed in this section of the GPA/ZC EIR. The guidelines and principles have been subject to public input during public workshops associated with the NCP/HCP and SAMP/MsAA programs and are available for review on the County website.

The Draft NCCP Guidelines and Draft Watershed Principles contain both broad planning principles applicable at the watershed scale and specific planning considerations and planning recommendations applicable to specific sub-basins within the study area. The following sub-sections present consistency analyses at both scales of analysis, starting with the geographically specific sub-basin guidelines and principles.

The analyses presented in the following sub-sections will use the same methodology in assessing the level of consistency of each of the “B” Alternatives with Subregional Conservation Planning Goals and Guidelines.

#### **1. Open Space/Habitat Protection**

##### **B-11 Alternative Consistency with Sub-basin Planning Guidelines and Principles**

Section 4.9.4 examines the degree to which the Proposed Project is consistent with the Draft NCCP/HCP Planning Guidelines and Watershed and Sub-basin Planning Principles. This section performs the same consistency analysis for the project alternatives. Similar to the

consistency analysis for the Proposed Project, the comparative analysis of alternatives is presented in matrix form. Table M-4 presents a matrix that provides “NCCP/HCP Planning Guidelines Consistency Findings.” Table M-5 presents a matrix that provides the “Watershed and Sub-basin Planning Principles Consistency Findings” using the identical approach described for Table M-4. Because these matrices are extremely detailed, tabular summaries for the two matrices are presented in Table M-6 for the NCCP/HCP Planning Guidelines, Table M-7 for the Watershed Planning Principles, Table M-8 for the Planning Species in relation to the Planning Guidelines, and Table M-9 for the Planning Species in relation to the Watershed Principles. These summary tables are accompanied in the text by narrative summaries of the findings. Table M-10 provides an overall conservation summary for the Planning Species in terms of locations, suitable habitat, *major* and *important populations* and *key locations* in the alternatives. Table M-11 provides a tabular summary of the habitat protection of the alternatives. The concluding section provides a series of analyses of Circulation System Consistency of each alternative for each sub-basin.

### **NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-11 is 85 percent (128/150 total) consistent with the Planning Guidelines (Table M-6). Modifications to the B-11 would be necessary in three (2 percent) instances. Modifications to B-11 would be necessary to achieve consistency with Guidelines 27, 91 and 112. Alternative B-11 would conflict with 19 (13 percent) of the Guidelines (2, 5, 7, 8, 30, 39, 54, 65, 68, 79, 86, 90, 123, 125, 126, 128, 130, and 134).

With regard to the “could be consistent” findings, the types of modifications that would be necessary for B-11 to be consistent with Guidelines 27, 91 and 112:

- 1) The inclusion of culverts or similar type facility and associated fencing in the design of Cristianitos Road in the Chiquita sub-basin and the east-facing slope of Chiquadora Ridge to facilitate ground-dwelling wildlife movement;
- 2) Development of a golf course design in the Cristianitos sub-basin (Planning Area 7) that would avoid the tenth brodiaea location of 120 flowering stalks in that sub-basin; and
- 3) A determination as to the availability of funding to support restoration efforts in upper Gabino to address soil stabilization (the expense of the restoration effort would be directly related to the type and extent of restoration effort proposed).

Upon preliminary review, modifications “1” and “2” appear to be feasible in that they involves discrete design decisions regarding Cristianitos Road and the golf course in Planning Area 7. The level of effort necessary to reduce erosion in upper Gabino is undetermined at this time; therefore the feasibility of modification “3” cannot be ascertained at this time.

For the “not consistent” findings, Alternative B-11 generally conflicts with the Planning Guidelines in three ways: (1) impacts to native grasslands; (2) impacts to raptor foraging habitat; and (3) limited impacts to specific species and habitat types. Alternative B-11 would conserve 9,797 acres or 65 percent of grassland habitat. Conservation of historic raptor nesting locations is approximately 72 percent and conservation of foraging habitat varies from 65 percent for grassland (foraging habitat for golden eagle and merlin) to 83 percent for riparian/woodland and forest (foraging habitat for Cooper’s hawk). Although the conservation of 57 percent of coastal sage scrub and 68 percent of gnatcatcher locations along the eastern slopes of Chiquadora Ridge fails to achieve the 80 percent conservation threshold recommended by Guideline 39 for this location, overall Alternative B-11 would protect 87 percent of coastal sage scrub and 84 percent of gnatcatcher locations within the *major population/key location* in the Chiquita/Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin, and is therefore consistent with Planning Guideline 17. Across

the entire RMV Open Space and existing protected open space B-11 would conserve 82 percent of coastal sage scrub and 79 percent gnatcatcher locations (16,203 acres and 572 locations respectively).

Overall Alternative B-11 achieves a high (85 percent) degree of consistency with the sub-basin protection, management and restoration recommendations.

### **Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-11 is 71 percent (29/41 total) consistent with the Watershed Principles (Table M-6). Modifications to the B-11 would be necessary to achieve consistency with Principles 30, 35, and 36. Alternative B-11 would conflict with 9 (22 percent) of the Principles (2, 3, 4, 5, 6, 8, 10, 19, and 40).

With regard to “could be consistent” findings, Principle 30 relates to restoration in the Gabino sub-basin. As noted above, a determination would be needed as to the amount and availability of funding to support restoration efforts in upper Gabino to address soil stabilization (the expense of the restoration effort would be directly related to the type and extent of restoration effort proposed). The level of effort necessary to reduce erosion in upper Gabino is undetermined at this time; therefore, the feasibility of this effort cannot be ascertained at this time. Consistency with Principles 35 and 36 could be attained by design and constructed of a collector over Cristianitos Creek that would avoid significant riparian habitat, arroyo toad breeding habitat, and avoid altering streamcourse morphology.

For the “not consistent” findings, Alternative B-10 primarily conflicts with recommendations in the Chiquita, Gobernadora and Blind sub-basins as follows:

- 1) Chiquita sub-basin: development would occur in the major side canyons above and below the treatment plant.
- 2) Chiquita sub-basin: development would occur in the major side canyons above and below the treatment plant and thus does not recognize the existing hydrology and sediment transport processes.
- 3) Chiquita sub-basin: development would occur in the major side canyons above and below the treatment plant and thus disrupting connectivity between the major side canyons and the main channel.
- 4) Chiquita sub-basin: development would occur in the major side canyons thus precluding implementation of natural treatment systems and stormwater detention facilities in the sandy soils.
- 5) Chiquita sub-basin: development would occur in the major side canyons thus affecting groundwater recharge in the side canyons.
- 6) Chiquita Sub-basin: impacts to slope wetlands north of the treatment plant would occur.
- 7) Gobernadora Sub-basin: development generally avoids the main valley floor and is set back on Chiquadora Ridge, however development is allowed in the alluvial side canyons and in the valley floor in a few locations.
- 8) Trampas Sib-basin: development would impact one area of vernal pools that support fairy shrimp.
- 9) Blind Sub-basin: development in Planning Area 8 (Northrup Grumman) is concentrated in the Blind Sub-basin on both ridge tops and the valley bottom in order to avoid the vast majority of the San Mateo watershed in the planning area.

Overall Alternative B-11 achieves a medium (71 percent) degree of consistency with the Watershed Principles and has a low number of conflicts (22 percent).

## **Planning Species – NCCP/HCP Sub-basin Planning Guidelines Consistency Analysis**

Alternative B-11 has high consistency with the Planning Guidelines for 27 of the 28 Planning Species.<sup>4</sup> The average Planning Species consistency for Alternative B-11 is 87 percent. As shown in Table M-6, the consistency percentages for 27 Planning Species range from a low of 73 percent consistent for the grasshopper sparrow and brodiaea to 100 percent consistent for the arroyo toad, least Bell's vireo, southwestern willow flycatcher, golden eagle, yellow warbler, southwestern pond turtle, chaparral beargrass, Coulter's saltbush, and southern tarplant. Twenty-one of the 27 species (grasshopper sparrow) achieved at least 80 percent consistency, six species do not (San Diego and Riverside fairy shrimp, brodiaea, grasshopper sparrow, white-tailed kite, and salt spring checkerbloom).

For the California gnatcatcher, the B-11 Alternative is 86 percent consistent and 14 percent not consistent. The two Guidelines not met for the gnatcatcher are Guideline 39, which recommends 80 percent conservation of coastal sage scrub and gnatcatcher locations on Chiquadora Ridge and Guideline 68, which recommends maintaining the upland east-west habitat linkage south of the artificial lake in Trampas Canyon. Although Guideline 39 is not met, overall the recommended threshold of at least 80 percent conservation of coastal sage scrub and gnatcatcher locations is achieved in the Chiquita/Wagon Wheel canyons sub-basin *major population/key location*. Guideline 68 is not met under any of the alternatives because of the narrow strip of habitat that would remain between the Trampas Canyon development area and the Talega development to the south. This linkage probably is adequate for avian movement and smaller wildlife, but likely is constrained for larger species such as bobcat. This linkage probably is not crucial for the bobcat because other east-west corridors such as San Juan Creek will remain intact. B-11 also does not meet Guideline 123, as all five gnatcatcher locations recommended for protection would be impacted.

For the brodiaea the B-11 is 73 percent consistent, 7 percent "could be consistent" and 20 percent not consistent. The "could be consistent" finding is for Guideline 91, which recommends avoiding the ten of 13 scattered brodiaea locations in Cristianitos Canyon. Achievement of all of this Guideline is considered feasible under the B-11. B-11 is not consistent with Guideline 8, which recommends avoiding two of the four small populations of brodiaea in lower Chiquita Canyon in addition to the large population on Chiquadora Ridge. Under B-11, all four small populations of brodiaea would be impacted. B-11 is also not consistent with guidelines 90 and 130 which recommend protection of three location supporting 4,500 flowering stalks in southern Cristianitos sub-basin/western portion of the Gabino subunit.

For the non-listed Planning Species, the B-11 Alternative also has high consistency across the major species-habitat associations (Table M-6). For coastal sage scrub species, the B-9 is 83 percent consistent for the cactus wren, and for the orange-throated whiptail and San Diego horned lizard the B-9 is 88 and 93 percent consistent, respectively. For grassland species, the B-9 is 73 percent consistent for the grasshopper sparrow and 81 percent consistent for the merlin. For riparian/woodland species, the B-11 is 81 percent consistent for the Cooper's hawk, 81 percent consistent for the white-tailed kite, and 100 percent consistent for the yellow warbler and 95 percent for the yellow-breasted chat. For planning area-wide species, B-9 is 100 percent consistent for the golden eagle, 95 percent consistent for the mountain lion, and 91 percent consistent for the mule deer. As noted above, for non-listed plants the B-9 is 100 percent consistent for chaparral beargrass, Coulter's saltbush and southern tarplant.

<sup>4</sup> The mud nama was excluded from this analysis and all following analyses because it was 0 percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives.

Overall, Alternative B-11 would provide high to very high protection for all of the Planning Species.

### **Planning Species – Watershed Sub-basin Planning Principles Consistency Analysis**

Alternative B-11 is moderately consistent with the Watershed Principles for the ten Planning Species for which they are directly relevant (i.e., aquatic/riparian species) (Table M-7). Overall, B-11 is 77 percent consistent with the Watershed Principles, 13 percent not consistent, and ten percent “could be consistent” for the Planning Species. The consistency findings are more widely distributed than other alternatives, with a low of 56 percent consistent for the tricolored blackbird to 93 percent consistent for the southwestern pond turtle.

B-11 is 86 percent consistent for the arroyo toad and 14 percent “could be consistent.” The “could be consistent” findings are Principle 30 and 36. Principle 30 recommends protecting the Gabino headwaters through restoration of existing gullies using a combination of slope stabilization, grazing management and native grassland and/or scrub revegetation. This Principle is a “could be consistent” because the soil stabilization program would be costly and the availability of sufficient funding would need to be determined, as described above. Principle 36 recommends maintenance of hydrologic and sediment transport processed to protect the integrity of arroyo toad breeding habitat in lower Gabino Creek. This Principle could be consistent because of construction of a collector road across lower Gabino that would have to meet these recommendations.

B-11 is 73 percent consistent for the least Bell’s vireo and 13 percent could be consistent and not consistent. For the southwestern willow flycatcher, B-11 is 83 percent consistent and 17 percent not consistent. B-11 is not consistent for both the vireo and willow flycatcher with Principle 10, which recommends a set back of development from the valley floor in Gobernadora and concentration of development on Class D soils in order to emulate current hydrologic patterns, because the proposed development area is situated along the edge of the valley floor. B-11 is also not consistent with principle.

For the non-listed Planning Species, B-11 is not consistent with Principle 10 for the Cooper’s hawk, tricolored blackbird, white-tailed kite, yellow warbler, and yellow-breasted chat. Principle 35 recommends limiting development and other uses in Blind Canyon to areas away from the major oak woodlands, which provide suitable habitat for Cooper’s hawk, white-tailed kite, yellow warbler, and yellow-breasted chat. Proposed development under B-11 would impact the oak woodlands in Blind Canyon. For the tricolored blackbird, B-9 could be consistent with Principle 5, which recommends natural treatment systems for water quality treatment and storm detention in sandy soils in the major side canyons and valley floor of Chiquita Canyon. For the western spadefoot toad and southwestern pond turtle, B-11 could be consistent with Principle 30, as described above. This Principle is a “could be consistent” because the soil stabilization program would be costly and the availability of sufficient funding would need to be determined.

Overall B-11 has moderate consistency (77 percent) with the Watershed Principles.

### **Circulation Systems Consistency Analysis**

In order to portray the potential impacts of the alternative circulation systems, this section will analyze the circulation systems with regard to the sub-basin guidelines/principles. “Connectivity” considerations are based on the NCCP/HCP Planning Guidelines (General Policy 3.3) and the accompanying “Habitat Linkages and Wildlife Corridors Map and are incorporated explicitly into the Planning Guidelines sub-basin Protection Recommendations.

These “connectivity” considerations provide criteria for reviewing potential impacts of the alternative circulation systems. Those portions of the circulation systems located *outside* the “development bubbles” are reviewed for consistency with the specific Guidelines and Principles applicable to each sub-basin. For the portions of the circulation systems located *within* “development bubbles,” the potential impacts already are reflected in the overall delineation of the particular “development bubble” and do not require separate analysis with respect to the project alternatives. It should be noted that although project alternatives B-5 through B-9 are analyzed without the FTCS, project alternatives B-10 and B-11 specifically assume the FTCS will be constructed and as a result have a different circulation system. This circulation system is reviewed for consistency.

## **San Juan Creek Watershed**

### **1. Chiquita Sub-basin**

The review of the different circulation systems reflects two different assumptions: (1) MPAH proposals proposed or identified in conjunction with the different Alternatives; (2) the circulation elements shown on the existing MPAH.

Project Alternative B-11 proposes the same three MPAH changes as the B-9 alternative; thus, the consistency analysis for these changes in B-9 would also apply to the B-11 alternative. The internal north-south collector road to the east of the treatment plant would impact ground-dwelling wildlife movement in Habitat Linkage/Wildlife Movement Corridor “E.” FTCS from the Gobernadora “development bubble” moving north would have similar impacts on Habitat Linkage “D.” Avian wildlife movement would not be impacted.

### **2. Gobernadora Sub-basin**

The B-11 circulation system is the same as B-10 in the Gobernadora sub-basin; thus the consistency analysis is the same as provided for the B-10.

### **3. Trampas Sub-basin and Central San Juan Sub-basin**

All of the alternatives propose the same arterial crossing of San Juan Creek and thus would have the same physical impacts. In addition to the arterial crossing of San Juan Creek, Project Alternatives B-10 and B-11 also assume FTCS will be constructed in approximately the Far East alignment. This would require a second crossing of San Juan Creek. Impacts from FTCS would generally be similar to those of the arterial crossing, i.e., temporary construction impacts and permanent impact associated with placement of piers. Project Alternatives B-9, B-10, and B-11 propose changing Ortega Highway from a State Highway to a local recreational access road while the other alternatives likely would retain the current function of Ortega Highway; however, these differences in recommendations for Ortega Highway would not cause new physical impacts, but instead would affect potential arroyo toad recovery actions per the prior discussion of consistency with the NCCP sub-basin recommendations.

### **4. Verdugo Sub-basin**

The B-11 circulation system is the same as B-9 in the Verdugo sub-basin; thus the consistency analysis is the same as provided for the B-9.

## **San Mateo Creek Watershed**

### **1. Cristianitos Sub-basin**

Project Alternative B-11 proposes construction of Cristianitos Road, a north-south road proposed to extend from Avenida Pico through the Cristianitos sub-basin and assumes construction of FTCS generally in the Far East alignment. Cristianitos Road would avoid the headwater area consistent with the recommendation for this area. All but a small portion of the area proposed for VGL enhancement where the creek branches would be avoided; as a two lane collector road rather than an arterial (in the Cristianitos sub-basin), the amount of area removed from VGL enhancement is relatively small in the context of the proposed overall VGL restoration plan and thus would be consistent with recommendation. East of the creek, the collector would be located in the higher areas away from the creek. Cristianitos Road would minimize direct impacts to the alkali wetlands/creek riparian areas in Cristianitos Creek resulting from construction of a culvert. Opportunities for stream stabilization would be preserved. Overall, Cristianitos Road would be consistent with the sub-basin recommendations. FTCS in the Cristianitos sub-basin would conflict with the restoration recommendations for the sub-basin, may impact the alkali wetlands and the headwaters of Cristianitos Creek. FTCS would also impact habitat linkage/wildlife movement corridor N. FTCS would not be consistent with the sub-basin recommendations.

### **2. Gabino and Blind Canyons Sub-basin**

Similar to the Proposed Project, Project Alternative B-11 proposes construction of Cristianitos Road, a north-south collector. The consistency review for the Proposed Project would apply to B-11. However, in addition to construction of Cristianitos Road, B-11 also proposes construction of FTCS in generally the Far East alignment. FTCS would likely result in temporary construction impacts and permanent impacts to Gabino Creek associated with placement of bridge piers in Gabino Creek.

### **3. La Paz Sub-basin**

Project Alternative B-11 does not provide for development within the La Paz sub-basin and therefore would be consistent with the sub-basin recommendations.

### **4. Talega Sub-basin**

B-11 proposes the construction of Cristianitos Road, a north-south road extending from Avenida Pico. Within the Talega sub-basin, Cristianitos Road is proposed as a two-lane collector. Cristianitos Road would not affect dry season and stormwater flows, and thus would not cause any potential conflict with these recommendations. However, because Cristianitos Road would extend from the western edge of Blind Canyon Mesa across Blind Canyon itself in order to access the Northrup Grumman ridge, construction of the road would likely impact some portion of the canyon bottom of Blind Canyon.

### **5. Other Planning Area**

Within the Other Planning Area, B-11 proposes the same construction of a new north-south road as discussed above for B-6; therefore, the B-6 consistency analysis would apply. However in addition to the new north-south road, this alternative also assumes the FTCS would be constructed in generally the Far East alignment. The consistency analysis described above for B-10 and the FTCS would also apply to the B-11 project alternative.

## B-11 Alternative Consistency with the SRP/Science Advisors Tenets of Reserve Design

- **Tenet 1: Conserve target species throughout the planning area**

As described above for the B-4 Alternative, 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 was zero percent consistent with all alternatives and would artificially lower comparative summary scores for the alternatives. For the listed Planning Species, Alternative B-11 has a range of low to very high consistency with the NCCP/HCP Guidelines (see discussion of Planning Species above and consistency analysis in Table M-10). B-11 protects *key locations* for arroyo toad, California gnatcatcher, least Bell’s vireo, and southwestern willow flycatcher (see descriptions in Table M-10). 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 79 percent of locations and 82 percent of coastal sage scrub habitat, including 84 percent of locations and 87 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 the San Diego and Riverside fairy shrimp, only one of the two areas of vernal pools along Radio Tower Road would be protected. For brodiaea only 56 percent of locations and 32 percent of flowering-stalks would be protected. While the *major population/key location* on Chiquadora Ridge would be protected, the other *major population/key location* in Lower Cristianitos/Lower Gabino Canyon would be impacted.

B-11 provides medium to very high protection for the unlisted Planning Species (see discussion of Planning Species above and consistency analysis in Table M-10). *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 Table M-10, medium to very high protection would be provided for *key locations* of all of these species, with overall conservation ranging from 60 percent protection of populations of grasshopper sparrow to 99 percent protection of Coulter’s saltbush and southern tarplant. For the tricolored blackbird, approximately 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 and the area south of a ranch residence south of Ortega Highway.

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, 80 percent of cactus wren locations, 82 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 82 percent of suitable habitat for the three species, would be protected under the B-11 Alternative. For the golden eagle and merlin approximately 63 percent of foraging habitat would be protected and both species likely would persist in the subregion. Under B-11, large blocks of habitat would be protected to provide foraging and movement area for the mountain lion and mule deer.

- **Tenet 2: Larger Reserves are better.**

The B-11 Alternative is comprised of three major habitat blocks: the Eastern block (22,022 acres), the Western block (7,736 acres), and the Arroyo Trabuco block (1,832 acres). These habitat blocks combined total about 31,590 acres and account for about 74 percent of the B-11



Open Space. The Eastern block connects to substantial uninterrupted open space to the east in the Cleveland National Forest and Camp Pendleton.

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

Important habitat linkages and wildlife corridors are described in the Draft NCCP Guidelines. 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 and between the Gobernadora and East Ortega development areas (linkage J).

- **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 three habitat blocks described above under Tenet 2 are presented in Table M-32. As shown in Table M-32, the vast majority of the three habitat blocks that would be protected in the B-11 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 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 M-32, 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 block to one 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 block and the lowest percentage in the Eastern block.

**TABLE M-32  
MAJOR VEGETATION COMMUNITIES WITHIN  
THE B-11 ALTERNATIVE HABITAT BLOCKS**

Vegetation Community/Land Cover Type	Habitat Block Acres <sup>1</sup>				
	Arroyo Trabuco	Western		Eastern	
	Total	Total	RMV	Total	RMV
Coastal Sage Scrub	313	2,736	1,257	10,224	3,502
Chaparral	121	292	131	4,822	2,356
Grassland	514	2,345	959	3,154	1,644
Woodland & Forest	141	90	46	1,062	220
Riparian	613	514	339	2,494	928
Other Habitats/Land Covers	30	1,502 <sup>2</sup>	973	43	29
Developed/Disturbed (% of Total in Block)	100 (5%)	257 (3%)	167 (4%)	223 (1%)	85 (1%)
<b>Total in Block</b>	<b>1,832</b>	<b>7,736</b>	<b>3,872</b>	<b>22,022</b>	<b>8,764</b>

<sup>1</sup> 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.

<sup>2</sup> Agriculture accounts for 1,421 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

- **Tenet 5: Reserves should be biologically diverse.**

Table M-33 shows the amount and percentage of the major vegetation communities protected in the B-11 Open Space, both in the overall B-11 Open Space and broken down by watersheds. Overall, the B-11 protects the large majority of the major vegetation communities. Protection ranges from a low of 65 percent for grassland to a high of 83 percent for woodland and forest and riparian. Other than grassland, the next lowest overall conservation percentage of the major vegetation communities is 82 percent for coastal sage scrub and chaparral.

In contrast to Alternatives B-5, B-8 and B-9 and similar to Alternatives B-4, B-6 and B-10, B-11 provides for substantial development in both the San Juan and San Mateo watersheds, with development in Cristianitos Canyon and on the Blind Canyon mesa/Northrop Grumman ridge. As a result, habitat protection percentages between the two watersheds are relatively balanced, with the exception of chaparral. For example, 84 percent of coastal sage scrub would be protected in the San Juan Watershed, compared to 79 percent in the San Mateo Watershed. Likewise, for grassland protection is 68 percent in the San Juan Watershed and 72 percent in the San Mateo Watershed. Protection of woodland and forest and riparian also is similar between the two watersheds, San Mateo Watershed. Chaparral shows the largest discrepancy between the two watersheds, with 76 percent protection in the San Juan Watershed and 91 percent in the San Mateo Watershed. This discrepancy is in large part due 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 M-33. For example, 58 percent of chaparral in the planning area is in the San Juan Watershed, but only 53 percent of chaparral in the B-11 Open Space is in San Juan, an under-representation of 5 percent. Again, this discrepancy reflects the large amount of chaparral in the East Ortega development planning area. Overall, with the exception of chaparral, the B-11 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 M-33  
OVERALL PROTECTION OF MAJOR VEGETATION COMMUNITIES IN THE  
COMBINED B-11 OPEN SPACE AND ALREADY PROTECTED OPEN SPACE  
WITHIN WATERSHEDS**

Vegetation Community	Planning Area		B-11 Alternative		
	Planning Area Acres <sup>1</sup>	% of Vegetation Community	Acres (% of total)	% of Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	19,724		16,203 (82%)		
San Juan Creek	15,056	76%	12,638 (84%)	78%	+2%
San Mateo Creek	3,772	19%	2,973 (79%)	18%	-1%
Other Watersheds <sup>2</sup>	896	5%	592 (66%)	4%	-1%
Chaparral	7,333		6,009 (82%)		
San Juan Creek	4,219	58%	3,214 (76%)	53%	-5%
San Mateo Creek	2,748	37%	2,506 (91%)	42%	+5%
Other Watersheds	366	5%	289 (79%)	5%	0%
Grassland	14,979		9,796 (65%)		
San Juan Creek	8,215	55%	5,573 (68%)	57%	+2%
San Mateo Creek	3,093	21%	1,995 (64%)	20%	-1%
Other Watersheds	3,671	24%	2,228 (61%)	23%	-1%
Woodland & Forest	1,824		1,511 (83%)		
San Juan Creek	1,537	84%	1,286 (84%)	85%	+1%
San Mateo Creek	257	14%	207 (80%)	14%	0%
Other Watersheds	30	2%	18 (60%)	1%	-1%
Riparian	5,213		4,314 (83%)		
San Juan Creek	3,967	76%	3,285 (83%)	76%	0%
San Mateo Creek	1,024	20%	911 (89%)	21%	+1%
Other Watersheds	222	4%	118 (53%)	3%	-1%

<sup>1</sup> Acreages exclude Existing Use areas.  
<sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Table M-11 compares the representation of the major vegetation communities in the B-11 Alternative with their representation in the planning area as a whole. Coastal sage scrub is over-represented by 3 percent in the B-11 Open Space compared to grassland, which is under-represented by 4 percent. The other major vegetation communities are represented in the B-11 Open Space in essentially the same proportion as they occur in the planning area.

Source: Dudek 2004

**TABLE M-34  
COMPARATIVE PROTECTION OF VEGETATION COMMUNITIES  
UNDER THE COMBINED B-11 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE**

Vegetation Community	Planning Area		B-11 Alternative		
	Planning Area Acres <sup>1</sup>	% of Planning Area	Acres (% of total)	% of B-11 Open Space and Already Protected Open Space	% Deviation from Planning Area Distribution
Coastal Sage Scrub	19,724	40%	16,203 (82%)	43%	+3%
San Juan Creek	15,056	31%	12,638 (84%)	33%	+2%
San Mateo Creek	3,772	8%	2,973 (79%)	8%	0%
Other Watersheds <sup>2</sup>	896	1%	592 (66%)	2%	+1%
Chaparral	7,333	15%	6,009 (82%)	16%	+1%
San Juan Creek	4,219	9%	3,214 (76%)	8%	-1%
San Mateo Creek	2,748	5%	2,506 (91%)	7%	+2%
Other Watersheds	366	1%	289 (79%)	1%	0%
Grassland	14,979	30%	9,796 (65%)	26%	-4%
San Juan Creek	8,215	17%	5,573 (68%)	15%	-2%
San Mateo Creek	3,093	6%	1,995 (64%)	5%	-1%
Other Watersheds	3,671	7%	2,228 (61%)	6%	-1%
Woodland & Forest	1,824	4%	1,511 (83%)	4%	0%
San Juan Creek	1,537	3%	1,286 (84%)	3%	0%
San Mateo Creek	257	1%	207 (80%)	1%	0%
Other Watersheds	30	<1%	18 (60%)	<1%	0%
Riparian	5,213	11%	4,314 (83%)	11%	0%
San Juan Creek	3,870	8%	3,285 (83%)	9%	+1%
San Mateo Creek	1,024	2%	911 (89%)	2%	0%
Other Watersheds	319	<1%	118 (53%)	<1%	0%

<sup>1</sup> Acreages exclude Existing Use areas.

<sup>2</sup> Other Watersheds include the San Clemente and Aliso Hydrological Areas

Table M-11 compares the elevational distribution of the major vegetation communities in the planning area and the B-11 Open Space. As with the other alternatives, the protection percentages increase with elevation for all the major vegetation communities. A comparison of the “% Within Vegetation Community” columns for the planning area and B-11 Open Space shows that the elevational distributions of the vegetation communities in the B-11 Open Space 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 7 percent under 800 feet and over-represented by 6 percent above 800 feet. As with the other alternatives, the protection of riparian vegetation shows relatively little elevational bias, with a slight under-representation of 1 percent under 800 feet and over-representation of 1 percent at 800 to 1,200 feet. The B-11 Open Space has a moderate under-representation of 5 percent of chaparral at 400 to 800 feet primarily due to impacts that would occur in the East Ortega development planning area. Likewise, grassland is under-represented at the lowest elevation range (<400 ft), with 4 percent less in the B-11 Open Space (23 percent) compared to existing conditions (27 percent)

Source: Dudek 2004

**TABLE M-35  
ELEVATIONS OF VEGETATION COMMUNITIES PROTECTED BY THE  
COMBINED B-11 ALTERNATIVE OPEN SPACE AND ALREADY  
PROTECTED OPEN SPACE COMPARED TO PLANNING AREA**

Vegetation Community	Elevation Range (ft.)	Planning Area		B-11 Alternative		
		Planning Area Acres <sup>1</sup>	% Within Vegetation Community	Acres (% of Total)	% Within Vegetation Community	% Deviation from Planning Area
Coastal Sage Scrub	0-400	1,414	7%	864 (61%)	5%	-2%
	401-800	9,825	50%	7,319 (74%)	45%	-5%
	801-1,200	6,562	33%	6,145 (94%)	38%	+5%
	>1,200	1,923	10%	1,875 (97%)	11%	+1%
<b>Total</b>		<b>19,724</b>		<b>16,203</b>		
Chaparral	0-400	166	2%	111 (67%)	2%	0%
	401-800	4,640	63%	3,467 (75%)	58%	-5%
	801-1,200	2,010	27%	1,917 (96%)	32%	+5%
	>1,200	518	7%	514 (99%)	8%	+1%
<b>Total</b>		<b>7,334</b>		<b>6,009</b>		
Grassland	0-400	4,005	27%	2,228 (56%)	23%	-4%
	401-800	8,121	54%	5,378 (66%)	55%	+1%
	801-1,200	2,551	17%	1,903 (75%)	19%	+2%
	>1,200	299	2%	287 (96%)	3%	+1%
<b>Total</b>		<b>14,976</b>		<b>9,976</b>		
Woodland & Forest	0-400	174	10%	113 (65%)	7%	-3%
	401-800	1,005	55%	795 (79%)	53%	-2%
	801-1,200	509	28%	469 (92%)	31%	+3%
	>1,200	135	7%	135 (100%)	9%	+2%
<b>Total</b>		<b>1,823</b>		<b>1,512</b>		
Riparian	0-400	1,289	25%	1,062 (82%)	25%	-%
	401-800	3,088	59%	2,496 (81%)	58%	-1%
	801-1,200	730	14%	649 (89%)	15%	+1%
	>1,200	106	2%	104 (98%)	2%	0%
<b>Total</b>		<b>5,213</b>		<b>4,311</b>		

<sup>1</sup> Acreages exclude Existing Use areas  
Source: Dudek 2004.

- **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-9 proposed circulation system compliance with Draft NCCP Guidelines General Policy 4 (roads and infrastructure to be located outside the Habitat Reserve to the maximum extent feasible) is reviewed in the sub-basin consistency analysis. 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 NCCP 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-11 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. Development under B-11 would not avoid the alluvial side canyons in middle Chiquita or Gobernadora; thus the geomorphology of the creek systems and the surface and groundwater flows essential to perennial flow in Chiquita Creek and Gobernadora Creek would be affected. Within the San Mateo watershed, development would be focused in significant part on areas of clay soils in the Cristianitos sub-basin, on Blind Canyon Mesa and on the Northrup Grumman ridge where potential sources of fine sediments detrimental to aquatic habitats can be eliminated.

From a hydrologic perspective, proposed development areas have been located away from the valley floor above the knickpoint in order to allow for the potential restoration of the Gobernadora stream meander and other measures proposed in the riparian component of the Wetland Habitat Restoration Plan and away from the Sulphur Canyon tributary to the creek system. Implementation of the Invasive Species Control Plan 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.

### **B-11 Alternative Consistency with SAMP Tenets**

#### SAMP Tenet 1: No net loss of acreage and functions of waters of the U.S./State

As reviewed under the Watershed Principles functions, Alternative B-11 would affect the major terrains/hydrology functions of Planning Areas 2 and 3 by development within the alluvial site canyons. The major riparian/wetlands associated with mainstem systems would be protected. With regard to net acreage of waters of the U.S./State, Alternative B-11 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 due to development within the development bubbles.

#### SAMP Tenet 2: Maintain/restore riparian ecosystem integrity

Given its focus on protecting and, where feasible and beneficial, restoring each of the major canyon systems, Alternative B-10 addresses this tenet. Restoration of areas currently generating fine sediments in the Cristianitos sub-basin would be accomplished via development. Regarding the soil stabilization actions required for Upper Gabino, it is not clear whether Alternative B-11 can provide the basis for soils restoration actions important to restoring riparian ecosystem integrity in this, since no development is proposed in upper Gabino.

#### SAMP Tenet 3: Protect headwaters

Each of the headwaters areas not already urbanized is protected. Significant enhancement/restoration is proposed for Upper Cristianitos Creek and Upper Gabino Canyon; however, soils re-configuration proposed for Upper Gabino may be difficult to achieve in economic terms without any development activities to help defray potentially significant costs. The headwaters area of Trampas Creek is proposed for development but this area has been altered in conjunction with existing mining operations.

SAMP Tenet 4: Maintain/protect/restore riparian corridors

All major riparian corridors are protected. Alternative B-11 is consistent with the riparian restoration proposals set forth in the Adaptive Management Program.

SAMP Tenet 5: Maintain/and or/restore floodplain connection

Alternative B-11 maintains all existing areas of floodplain connection. Alternative B-11 is consistent with the Adaptive Management Program proposal to restore 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), Alternative B-11 does not propose any actions that would be contrary to such processes.

SAMP Tenet 6: Maintain and/or restore sediment sources and transport equilibrium

Consistent with the Watershed Planning Principles, B-11 protects all of the significant sources of coarse sediment, except for one side canyon in the Verdugo sub-basin, in order assure the continued generation of such sediments important for riparian/wetlands habitat systems; in some areas, development is focused 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. Alternative B-10 is consistent with the vegetation restoration proposals for areas with clay soils, including Sulphur Canyon and Upper Cristianitos Canyon. As noted above, the extent to which B-11 would provide for the economic basis for the restoration proposed for Upper Gabino Canyon is uncertain.

SAMP Tenet 7: Maintain adequate buffer for the protection of riparian corridors

All major riparian corridors are adequately buffered from development bubbles. Where a golf course is proposed in the Blind Canyon Mesa/Northrup Grumman Ridge development bubble, setbacks from arroyo toad areas are consistent with the prior critical habitat designation for the arroyo toad and would protect toad habitat.

SAMP Tenet 8: Protect riparian areas and associated habitats of listed and sensitive species

As reviewed under consistency with the SRP/Science Advisors Tenet 1, riparian areas associated with listed planning species (including listed species) would be substantially protected. Sensitive species dependent on riparian habitats but not included for protection as an Identified Species have been protected as reviewed in section 4.9.

**B-11 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.*

## **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.*

This Alternative provides setbacks from the mainstem channel in sandy terrains in order to protect the integrity of the mainstem channels and corridors. However, new development under this Alternative does place impervious surfaces in the major tributary side canyons of Chiquita and Gobernadora sub-basins.

**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-11 Alternative does not provide for directing drainage to major tributary side canyons in Chiquita and for utilizing the infiltration characteristics of sandy terrains. With regard to Gobernadora Canyon, the B-11 Alternative addresses existing conditions characterized by excessive surface and subsurface water flows from upstream development with flow duration and discharge strategies under scenarios with and without a flow modulation basin just below Coto de Caza.

**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 B-11 Alternative proposes to remedy existing erosion in the Cristianitos sub-basins in conjunction with golf course/residential development. B-11 proposes no development in upper Gabino; therefore, the ability of the B-11 to address existing erosion problems in this sub-basin has not been resolved due to the question of the adequacy of funding for the Adaptive Management Program.

*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 Adaptive Management Program proposes the restoration of native grasslands in upper Cristianitos Canyon and Upper Gabino Canyon, in part to meet the purposes expressed in this policy. Table M-4 addresses the consistency of the B-11 Alternative with the restoration recommendations of the Adaptive Management Program.

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

Figure 6 of the Watershed Planning Principles depicts the locations of crystalline terrains. Alternative B-11 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-11 Alternative with the sub-basin watershed principles is reviewed in Table M-5. 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-11 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.

## **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)*

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).

*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.*

As reviewed in Chapter 3 of the WQMP:

“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 Canada Chiquita Sub-basin was divided into 18 catchments.”

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; . . . (5) changes in the infiltration of surface/soil water to groundwater [sub-part (4) involving “potential changes in sediment supply” is addressed under Geomorphology/Terrains and Sediment Sources, Storage and Transport]*

Each of the four elements of Principle 3 cited at the introduction to this subsection is addressed by the above components of the WQMP. As noted previously, the WQMP analyses have been prepared for the B-4 and B-9 Alternatives, with qualitative analyses for the other B Alternatives undertaken based on the B-4 and B-9 quantitative analyses. Chapter 7 of the WQMP addresses findings of significance for the “B” Alternatives analyzed qualitatively.

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 is 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.*

To address County Flood Control planning and management considerations, a HEC-1 analysis has been 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 compared with 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 will 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 are 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 will be identified through subsequent levels of entitlement, specifically at the area plan approval stage.

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.*

Chapter 4 of 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 (see discussion below) has been differentiated from localized processes influenced by specific land uses.

Chapter 5 of 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 described in Chapter 4. The cumulative impacts analysis in Chapter 8 of the WQMP 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 Rancho Mission Viejo property planning area and downstream of the planning area.

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

As reviewed previously in the responses to 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 under three climatic scenarios (All Years, Dry Years, and Wet Years) under pre-development conditions and post-development conditions with PDFs.

*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.*

B-11 has considered the role of episodic storm events in transporting sediment, re-organizing channel/floodplain structure, and re-generating riparian plant communities as B-11 avoids mainstem channels and geomorphically-active floodplains surfaces.

## **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-11 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-11 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.*

Alternatives B-11 avoids the crystalline terrains that protect significant sources of coarse sediments in Verdugo, middle Gabino and La Paz sub-basins. Further, each protected source of coarse sediments 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. As noted above, B-11 is not protective of sandy terrains associated with alluvial side canyons in Chiquita and Gobernadora sub-basins; however, B-11 is protective of the sandy terrains associated with the 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, B-10 avoids significant sources of coarse sediment. 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 Table M-5 analyzes the consistency of the B-11 with 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-11.

*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. Chapters 4 and 5 of the WQMP review strategies for the B-4 and B-9 Alternatives directed toward achieving “flow duration matching” under the post-development “water balance” scenarios under average, wet and dry cycle rainfall conditions, which strategies are designed to protect stream geomorphology and avoid generating new sources of erosion.

*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.*

Consistency with this policy has also been reviewed previously B-11 would address the existing sources of fine sediments from upper Cristianitos Creek, but not upper Gabino. B-11 is protective of existing sources of coarse sediment.

### 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.*

As noted above for Principle 1, the B-11 Alternative does not take advantage of the infiltration opportunities associated with sandy soils in Chiquita and Gobernadora.

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-5 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.*

As noted previously, the B-11 Alternative would maintain infiltration and groundwater recharge in the main valleys of Chiquita and Gobernadora sub-basins, but not their wide and sandy tributaries.

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

Those slope wetlands which are avoided by the B-11 or those slope wetlands for which mitigation in the form of avoidance is proposed, the recharge area for the slope wetland is also considered as part of the avoidance.

## 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.*

Chapter 5 of the WQMP analyzes potential development impacts and proposed water quality PDFs addressing pollutant loadings associated with specific terrains including TSS phosphorus and nutrients. Although the modeling assumptions use information from the L.A. 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 in-stream data and the Baseline Conditions Report to assess the modeling results.

*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 [cite]. 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 1-2 year stormwater flows in accordance with County DAMP requirements will receive water quality treatment prior to the discharge of stormwater runoff into native 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.

*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.*

Habitat restoration that benefits downstream areas through increased infiltration of groundwater and reduced soil erosion include:

- coastal sage scrub restoration in the Chiquita sub-basin
- coastal sage scrub/grasslands restoration in Sulphur Canyon
- restoration of the meander above the knickpoint in the Gobernadora sub-basin
- coastal sage scrub and native grasslands restoration in the Cristianitos sub-basin
- coastal sage scrub and native grasslands restoration in upper Gabino

Additionally, arundo removal in San Juan Creek will allow for increased growth of riparian habitat in San Juan Creek with attendant water quality benefits. The potential benefits of these restoration programs are further described in the Adaptive Management Program and associated appendices.

*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.*

Infiltration is discussed under Principles 1 and 2 above. As described above for Principle 3, 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 discussed in Chapter 7 of the WQMP.

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

Although some agricultural uses will continue under the B-11 Alternative, urban land uses will predominate and thus the potential pollutants are more urban in nature and include fine sediment, nutrients, trace metals, pathogens, hydrocarbons, pesticides and trash and debris. Chapter 7 of the WQMP discusses pre-and post-project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

*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, Chapter 2 of the WQMP identifies “pollutants of concern” that are anticipated or potentially could be generated by the 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. Chapter 4 reviews the combined control system elements, including size, required for each sub-basin where development is proposed. Chapter 7 of the WQMP discusses pre-and post-project pollutants loadings relative to the standards set forth in the San Diego Basin Plan and the California Toxics Rule as applicable.

Summary of Issues:

The review of the B-11 Alternative in the subsections above indicate that the major open space issues are as follows:

**1. B-11 Alternative Open Space System**

The Alternative B-11 proposed open space meets broad-scale NCCP and SAMP guidelines. In order to maximize the opportunities to provided needed housing in Orange County with

complimentary supporting employment, the B-11 Alternative proposes more development acreage than the Proposed Project overall (8,621 vs. 7,694) in locations similar to the Proposed Project. The differences between the Proposed Project and the B-11 alternative are follows:

- 1) increased development in Chiquita sub-basin (Planning Area 2) and re-arrangement of development acreage to protect Chiquita Narrows and focus development east of Chiquita Creek;
- 2) reduction in development acreage at the top of the Gobernadora sub-basin (Planning Area 3);
- 3) increase in development acreage in Central San Juan and development in a small portion of the Verdugo sub-basin outside of Verdugo Canyon (Planning Area 4);
- 4) removal of development acres in Cristianitos sub-basin (Planning Area 6);
- 5) addition of golf course use to Cristianitos sub-basin (Planning Area 7) to buffer increased residential uses to the east of the golf course;
- 6) reduction and re-arrangement of development acreage in the Talega sub-basin (Planning Area 8); and
- 7) removal of development acres from upper Gabino (Planning Area 9).

## **2. Long-Term Habitat Management**

Regarding Adaptive Management, Alternative B-11 generally is consistent and helps carry out the comprehensive Invasive Species Control Plan. Alternative B-11 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-11 is consistent with the restoration proposed for Gobernadora Creek as reviewed in the Adaptive Management Program. Valley grasslands restoration and enhancement areas proposed in the NCCP Guidelines for Narrow Canyon within the Chiquita sub-basin and Upper Cristianitos Canyon are protected. However, valley grasslands restoration areas proposed for Blind Canyon Mesa would likely be largely precluded by development. The coastal sage scrub/valley grasslands restoration/enhancement areas in Upper Gabino Canyon would be consistent with the B-11. Alternative B-11 is consistent with the draft Grazing Management Plan and Fire Management Plan.

Upper Gabino contains substantial land areas manifesting ongoing erosion in areas characterized by clay soils – erosion resulting from cattle operations and local roads (some of which serve development located outside the planning area) in the case of Upper Gabino. This issue would need to be addresses by the AMP.

### **Conclusions Regarding Consistency with Subregional Conservation Planning Goals and Objectives**

Alternative B-11 is generally consistent with subregional conservation planning goals and objectives. However, the adequacy of funding for soils stabilization required to address existing erosion in areas generating fine sediments in upper Gabino needs to be confirmed.



**TABLE M-36  
ALTERNATIVE B-5 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Arroyo Toad	100% of breeding locations comprising <i>major</i> and <i>important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved. No development would occur on the San Mateo Creek Watershed, thus all potential upland foraging/estivation habitat would be conserved. In the San Juan Creek Watershed, all breeding habitat and the adjacent floodplain terrace would be conserved. However, development is proposed south of the creek adjacent to the <i>major population/key location</i> without substantial setbacks from the creek. In addition, development in Verdugo Canyon, however, would severely impact a substantial source of coarse sediments essential to maintaining suitable breeding habitat. Development along the south side of San Juan Creek in East Ortega and the Trampas Canyon areas would require maintaining Ortega Highway in its current location, limit use of this area as estivation habitat, and continue existing levels of roadkill.	Same as Planning Area.
Coastal Gnatcatcher	California 559 locations (78%) and 16,713 acres (85%) of suitable habitat would be conserved, including 317 of 404 locations (78%) and 2,552 acres of 3,126 acres of coastal sage scrub (82%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-5 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i> ; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i> ; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i> ; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> ; 34 of 35 locations (97%) of the West San Juan Capistrano <i>important population/ key location</i> ; 28 of 41 locations (68%) of the Arroyo Trabuco <i>important population</i> and 13 of 13 locations (100%) in the Upper Cristianitos Canyon <i>important population</i> . A total of 501 of 644 locations (78%) within <i>major</i> and <i>important populations</i> would be in B-5. (The two <i>important populations</i> in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)	153 locations (63%) and 5,691 acres (74%) of suitable habitat would be conserved on RMV, including 118 of 188 locations (63%) and 850 acres of 1,322 acres of coastal sage scrub (64%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations/key locations</i> on RMV, B-5 would include 1 of 1 location of the East San Juan Capistrano <i>important population/key location</i> and 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> and all 12 locations in the Upper Cristianitos Canyon <i>important population</i> . A total of 137 of 208 locations (66%) within <i>major</i> and <i>important populations</i> in RMV would be conserved under B-5.
Least Bell's Vireo	46 of 54 breeding locations (86%) and approximately 806 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	29 of 30 breeding locations (97%) and approximately 474 acres (90%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single <i>important population</i> on RMV in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.

**TABLE M-36 (Continued)**  
**ALTERNATIVE B-5 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Southwestern Willow Flycatcher	7 of 7 breeding locations and approximately 806 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	6 of 6 breeding locations and approximately 474 acres (90%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single identified <i>important population</i> in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.
Riverside Fairy Shrimp	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	1 of 2 vernal pool complexes supporting Riverside fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.
San Diego Fairy Shrimp	2 of 3 vernal pool complexes supporting San Diego fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.	1 of 2 vernal pool complexes supporting San Diego fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.
Thread-leaved Brodiaea	7,283 flowering stalks (76%) and 27 locations (79%) would be conserved. All populations in the San Mateo Creek Watershed would be conserved, including the <i>major population/key location</i> in Lower Cristianitos/Lower Gabino canyons and the <i>important populations</i> in Cristianitos Canyon, Middle Gabino and Talega sub-basin. The Arroyo Trabuco <i>important population</i> also would be conserved. The <i>major population/key location</i> on Chiquadora Ridge in the San Juan Creek Watershed would be impacted by the Lower Chiquita development and the Trampas Canyon <i>important population</i> would be impacted by the East Ortega development.	6,979 flowering stalks (76%) and 24 of 30 locations (80%) would be conserved on RMV. All populations in the San Mateo Creek Watershed would be conserved, including the <i>major population/key location</i> in Lower Cristianitos/Lower Gabino canyons and the <i>important populations</i> in Cristianitos Canyon, Middle Gabino and Talega sub-basin. The <i>major population/key location</i> on Chiquadora Ridge in the San Juan Creek Watershed would be impacted by the Lower Chiquita development and the Trampas Canyon <i>important population</i> would be impacted by the East Ortega development.
Cactus Wren	1,097 locations (82%) and 16,702 acres (85%) of suitable habitat would be conserved. All wren locations and suitable habitat in the San Mateo Creek Watershed would be conserved. Habitat connectivity generally would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed. Some constraints may occur to east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park because of development in Sulphur Canyon and the upper portion of Gobernadora and because of the narrowing of the linkage between the Trampas Canyon and East Ortega development areas.	331 locations (63%) and 5,691 acres (74%) of suitable habitat would be conserved on RMV. All wren locations and suitable habitat in the San Mateo Creek Watershed would be conserved. Habitat connectivity generally would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed. Some constraints may occur to east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park because of development in Sulphur Canyon and the upper portion of Gobernadora and because of the narrowing of the linkage between the Trampas Canyon and East Ortega development areas.

**TABLE M-36 (Continued)  
ALTERNATIVE B-5 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Cooper's Hawk	36 historic nest locations (82%) and 5,819 acres (81%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, Verdugo, and Arroyo Trabuco.	18 historic nest locations (78%) and 1,827 acres (73%) of suitable habitat (riparian, woodlands and forest) would be conserved on RMV. No major/important populations identified, but breeding and foraging habitat within the major drainages on RMV would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, and Verdugo.
Golden Eagle	Approximately 12,258 acres (65%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon and in grasslands in the San Mateo Creek Watershed.	Approximately 4,576 acres (60%) of grassland and agricultural foraging habitat would be conserved on RMV. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon and in grasslands in the San Mateo Creek Watershed.
Grasshopper Sparrow	416 locations (57%) and 10,761 acres (72%) of grassland would be conserved. Approximately 31% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 98% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	321 locations (55%) and 3,980 acres (79%) of grassland would be conserved on RMV. Approximately 28% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 96% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 100% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.
Merlin	Approximately 12,258 acres (65%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.	Approximately 4,576 acres (60%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.
Tricolored Blackbird	Potential breeding/foraging areas would be conserved in San Juan Creek, south of a ranch residence south of Ortega Highway, and the "Riverside Cement" colony in Lower Cristianitos and Lower Gabino canyons. Historic nesting areas in the Narrows in Chiquita Canyon and at the mouth of Verdugo Canyon would be largely developed. Development in the grassland habitat in the valley bottom of Lower Gobernadora on RMV property likely would preclude this area from supporting a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> .	Same as Planning Area.
White-tailed Kite	31 historic nest locations (86%) and 5,819 acres (81%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	13 historic nest locations (93%) and 1,827 acres (73%) of riparian and woodland habitats would be conserved on RMV. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.
Yellow Warbler	24 locations (75%) and 4,357 acres (82%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas, Chiquita and Lower Gobernadora canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	14 locations (87%) and 1,552 acres (81%) of riparian habitat would be conserved on RMV. All three of the <i>important populations</i> on RMV would be conserved. Scattered locations in Lower Gobernadora and Chiquita canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.

**TABLE M-36 (Continued)**  
**ALTERNATIVE B-5 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Yellow-breasted Chat	105 locations (81%) and 4,357 acres (82%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	61 locations (82%) and 1,552 acres (81%) of riparian habitat would be conserved on RMV. All four of the <i>important populations</i> on RMV would be conserved. Scattered locations in Middle Chiquita, Verdugo, Lower Gabino and La Paz canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.
Western Spadefoot Toad	16 locations (73%) and all of three <i>important populations</i> (Chiquita Ridge, Upper Cristianitos, Lower Gabino Creek) would be conserved. Portions of the two other <i>important populations</i> along San Juan Creek and Radio Tower Road would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	11 locations (73%) and all of two <i>important populations</i> (Upper Cristianitos, Lower Gabino Creek) would be conserved on RMV. Portions of the two other <i>important populations</i> along San Juan Creek and Radio Tower Road would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.
Orange-throated Whiptail	106 locations (62%) and 24,571 acres (85%) of coastal sage scrub, chaparral and woodland would be conserved. 49 of 59 locations (83%) in the Chiquita Canyon/Wagon Wheel Canyon <i>important population/key location</i> would be conserved. 7 of 18 locations (39%) in the Chiquadora Ridge <i>important population/key location</i> and 9 of 47 locations (19%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.	83 locations (56%) and 8,957 acres (74%) of coastal sage scrub, chaparral and woodland would be conserved on RMV. 43 of 53 locations (81%) in the Chiquita Canyon/Wagon Wheel Canyon <i>important population/key location</i> would be conserved. 7 of 18 locations (39%) in the Chiquadora Ridge <i>important population/key location</i> and 9 of 47 locations (19%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.
San Diego Horned Lizard	41 locations (82%) and 23,109 acres (85%) of coastal sage scrub and chaparral would be conserved. The <i>important population/key location</i> in Upper Cristianitos would be 100% conserved. The large majority (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved.	34 locations (79%) and 8,682 acres (76%) of coastal sage scrub and chaparral would be conserved on RMV. The <i>important population/key location</i> in Upper Cristianitos would be 100% conserved. The large majority (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved.
Southwestern Pond Turtle	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome's Lake in Upper Gabin. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas.	Same as Planning Area.

**TABLE M-36 (Continued)  
ALTERNATIVE B-5 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Mountain Lion	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the eastern portion of the Verdugo sub-basin would be undeveloped, providing a link to Caspers Wilderness Park and the CNF. Other areas of B-5 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, and San Juan Creek, although the relatively long interface between the creek and development north and south of the creek may affect lion movement through this area. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the eastern portion of the Verdugo sub-basin would be undeveloped, providing a link to Caspers Wilderness Park and the CNF. Other areas of B-5 on RMV providing for mountain lion movement would be Chiquita Ridge and San Juan Creek, although the relatively long interface between the creek and development north and south of the creek may affect lion movement through this area. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.
Mule Deer	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the eastern portion of the Verdugo sub-basin would be undeveloped, providing a link to Caspers Wilderness Park and the CNF. Other areas of B-5 providing for mule deer "live-in"/movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, and San Juan Creek. Development in Lower Sulphur Canyon and Gobernadora may affect direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the eastern portion of the Verdugo sub-basin would be undeveloped, providing a link to Caspers Wilderness Park and the CNF. Other areas of B-5 on RMV providing for mule deer "live-in"/movement habitat would be Chiquita Ridge and San Juan Creek. Development in Lower Sulphur Canyon and Gobernadora may affect direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.
Chaparral Beargrass	The Talega sub-basin <i>important population/key location</i> would be conserved.	Same as Planning Area.
Coulter's Saltbush	2,165 individuals (70%) and 27 locations (77%) would be conserved. Approximately 1,119 individuals (67%) and 15 locations (58%) in the <i>major population/key location</i> in Middle Chiquita Canyon would be conserved. <i>Important populations</i> located in Lower Chiquita, upper Cristianitos and Upper Gabino canyons would be conserved. Approximately 331 individuals (48%) and 4 locations (57%) in the <i>important population/key location</i> north of the treatment plant in Chiquita Canyon would be conserved.	Same as Planning Area.
Intermediate Mariposa Lily	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
Many-stemmed Dudleya	38,028 individuals (66%) and 189 locations (56%) would be conserved. Of the <i>major populations/key locations</i> , 95% of the individuals and 97% of locations of the Cristianitos Canyon population, 49% of individuals and 61% of locations of the Chiquadora Ridge population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 4% of individuals and 3% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 42% of individuals and 45% of locations of the Chiquita Ridge population/locations, 84% of individuals and 54% of locations in the Upper Gobernadora population, and less than 1% of the individuals and 2% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	27,923 individuals (59%) and 135 locations (46%) would be conserved on RMV. Of the <i>major populations/key locations</i> , 91% of the individuals and 94% of locations of the Cristianitos Canyon population, 49% of individuals and 61% of locations of the Chiquadora Ridge population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 4% of individuals and 3% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 42% of individuals and 45% of locations of the Chiquita Ridge population/locations, 84% of individuals and 54% of locations in the Upper Gobernadora population, and less than 1% of the individuals and 2% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.

**TABLE M-36 (Continued)  
ALTERNATIVE B-5 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Mud Nama	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	One of 3 populations totaling 350 individuals (3%) along Radio Tower Road would be conserved on RMV. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring Checkerbloom	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be impacted, as would the small population in the slope wetland in Gobernadora.	Same as Planning Area.
Southern Tarplant	93,000+ individuals (64%) and 28 locations (67%) would be conserved. Approximately 71,150 individuals (59%) and 24 locations (54%) of the <i>major population/key location</i> in Middle Chiquita and 1,249 individuals (33%) and 2 locations (40%) in the <i>important population/key location</i> north of the treatment plant would be conserved. The <i>major populations/key locations</i> in Lower Chiquita Canyon (the Tesoro mitigation site) and Gobernadora (GERA) would be conserved.	Same as Planning Area.
Source: Dudek 2004		

**TABLE M-37  
ALTERNATIVE B-6 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Arroyo Toad	100% of breeding locations comprising <i>major</i> and <i>important</i> populations in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved. In the San Juan Creek Watershed, all breeding habitat and the adjacent floodplain terrace would be conserved. However, development is proposed south of the creek adjacent to the <i>major population/key location</i> without substantial setbacks from the creek. Development along the south side of San Juan Creek in East Ortega and the Trampas Canyon areas would require maintaining Ortega Highway in its current location, limit use of this area as estivation habitat, and continue existing levels of roadkill.	Same as Planning Area.
Coastal California Gnatcatcher	616 locations (86%) and 16,957 acres (85%) of suitable habitat would be conserved, including 381 of 404 locations (94%) and 2,999 acres of 3,126 acres of coastal sage scrub (96%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-6 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i> ; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i> ; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i> ; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> ; 34 of 35 locations (97%) of the West San Juan Capistrano <i>important population/key location</i> ; 28 of 41 locations (68%) of the Arroyo Trabuco <i>important population</i> and 13 of 13 locations (100%) in the Upper Cristianitos Canyon <i>important population</i> . A total of 565 of 644 locations (88%) within <i>major</i> and <i>important populations</i> would be in B-6. (The two <i>important populations</i> in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)	211 locations (87%) and 5,946 acres (77%) of suitable habitat would be conserved on RMV, including 183 of 188 locations (97%) and 1,298 acres of 1,322 acres of coastal sage scrub (98%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations/key locations</i> on RMV, B-6 would include 1 of 1 location of the East San Juan Capistrano population, 6 of 7 locations (86%) of the Trampas Canyon population and all 12 locations in the Upper Cristianitos Canyon population. A total of 203 locations (97%) within <i>major</i> and <i>important populations</i> would be conserved on RMV in B-6.
Least Bell's Vireo	46 of 54 breeding locations (86%) and approximately 800 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both <i>important populations</i> in the planning area – in GERA and Arroyo Trabuco – would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	29 of 30 breeding locations (97%) and approximately 468 acres (74%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single <i>important population</i> on RMV in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.

**TABLE M-37 (Continued)  
ALTERNATIVE B-6 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Southwestern Willow Flycatcher	7 of 7 breeding locations and approximately 800 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	6 of 6 breeding locations and approximately 468 acres (74%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.
Riverside Fairy Shrimp	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	1 of 2 vernal pool complexes supporting Riverside fairy shrimp would be conserved on RMV ; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.
San Diego Fairy Shrimp	2 of 3 vernal pool complexes supporting San Diego fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.	1 of 2 vernal pool complexes supporting San Diego fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.
Thread-leaved Brodiaea	3,145 flowering stalks (33%) and 23 locations (68%) would be conserved. The Chiquadora Ridge <i>major population/key location</i> supporting more than 2,000 individuals would be conserved. 10 of 13 locations (77%) numbering 285 flowering stalks (71%) in the Cristianitos Canyon <i>important population</i> , 288 flowering stalks (100%) in the Middle Gabino <i>important population</i> , and all 4 locations totaling 288 flowering stalks in the Talega <i>important population</i> would be conserved. The Arroyo Trabuco <i>important population</i> also would be conserved. The LowerCristianitos/Lower Gabino <i>major location/key location</i> totaling 6,100 flowering stalks would be wholly impacted.	2,841 flowering stalks (30%) and 20 of 30 locations (67%) would be conserved on RMV. The Chiquadora Ridge <i>major population/key location</i> supporting more than 2,000 individuals would be conserved. 10 of 13 locations (77%) numbering 285 flowering stalks (71%) in the Cristianitos Canyon <i>important population</i> , 288 flowering stalks (100%) in the Middle Gabino <i>important population</i> , and all 4 locations totaling 288 flowering stalks in the Talega <i>important population</i> would be conserved. The LowerCristianitos/Lower Gabino <i>major location/key location</i> totaling 6,100 flowering stalks would be wholly impacted.
Cactus Wren	1,151 locations (86%) and 16,957 acres (85%) of suitable habitat would be conserved. Habitat connectivity generally would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed. Some constraints may occur to east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park because of development in Sulphur Canyon and the upper portion of Gobernadora and because of the narrowing of the linkage between the Trampas Canyon and East Ortega development areas.	385 locations (74%) and 5,946 acres (77%) of suitable habitat would be conserved on RMV. Habitat connectivity generally would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed. Some constraints may occur to east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park because of development in Sulphur Canyon and the upper portion of Gobernadora and because of the narrowing of the linkage between the Trampas Canyon and East Ortega development areas.



**TABLE M-37 (Continued)**  
**ALTERNATIVE B-6 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Cooper's Hawk	38 historic nest locations (86%) and 5,852 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, Verdugo, and Arroyo Trabuco.	20 historic nest locations (87%) and 1,861 acres (74%) of suitable habitat (riparian, woodlands and forest) would be conserved on RMV. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, and Verdugo.
Golden Eagle	Approximately 12,581 acres (67%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Chiquita Canyon, Blind Canyon and remaining grasslands in Upper Cristianitos and Upper Gabino canyons.	Approximately 4,901 acres (65%) of grassland and agricultural foraging habitat would be conserved on RMV. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Chiquita Canyon, Blind Canyon and remaining grasslands in Upper Cristianitos and Upper Gabino canyons.
Grasshopper Sparrow	581 locations (80%) and 9,976 acres (67%) of grassland would be conserved. Approximately 84% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 74% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	487 locations (83%) and 3,196 acres (63%) of grassland would be conserved on RMV. Approximately 87% of the <i>major population/ key location</i> in the Chiquita sub-basin/ Chiquadora Ridge area, 96% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 74% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.
Merlin	Approximately 12,581 acres (67%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat throughout Chiquita Canyon would be conserved, as would potential foraging habitat in the Radio Tower Road mesa area. Substantial portions of potential foraging habitat in Cristianitos and Upper Gabino Canyons would be developed.	Approximately 4,901 acres (65%) of grassland and agricultural foraging habitat would be conserved on RMV. Key foraging habitat throughout Chiquita Canyon would be conserved, as would potential foraging habitat in the Radio Tower Road mesa area. Substantial portions of potential foraging habitat in Cristianitos and Upper Gabino Canyons would be developed.
Tricolored Blackbird	Potential breeding/foraging areas in San Juan Creek, south of a ranch residence south of Ortega Highway, and the historic nesting area in the Narrows in Chiquita Canyon would be conserved. Development in the grassland habitat in the valley bottom of Lower Gobernadora on RMV property likely would preclude this area from supporting a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Historic breeding areas at the mouth of Verdugo Canyon and the "Riverside Cement" colony in Lower Cristianitos and Lower Gabino canyons would be largely developed.	Same as Planning Area.
White-tailed Kite	31 historic nest locations (86%) and 5,852 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	13 historic nest locations (93%) and 1,861 acres (74%) of riparian and woodland habitats would be conserved on RMV. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.
Yellow Warbler	25 locations (78%) and 4,378 acres (84%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas, Chiquita and Lower Gobernadora canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	15 locations (94%) and 1,575 acres (82%) of riparian habitat would be conserved on RMV. All three of the <i>important populations</i> would be conserved. Scattered locations in Lower Gobernadora and Chiquita canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.

**TABLE M-37 (Continued)**  
**ALTERNATIVE B-6 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Yellow-breasted Chat	108 locations (84%) and 4,378 acres (84%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.	65 locations (88%) and 1,575 acres (82%) of riparian habitat would be conserved on RMV. All four of the <i>important populations</i> on RMV would be conserved. Scattered locations in Middle Chiquita, Verdugo, Lower Gabino and La Paz canyons also would be conserved. However, upstream development in the valley floor would preclude implementation of the Gobernadora Creek/Sulphur Canyon restoration component and would contribute to additional infiltration into the groundwater system resulting from excessive surface and subsurface flows, thus limiting the ability to adaptively manage the habitat in GERA.
Western Spadefoot Toad	16 locations (76%) and all of three <i>important populations</i> (Chiquita Ridge, Upper Cristianitos, Lower Gabino Creek) would be conserved. Portions of the two other <i>important populations</i> along San Juan Creek and Radio Tower Road would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	11 locations (73%) and all of two <i>important populations</i> (Upper Cristianitos, Lower Gabino Creek) would be conserved. Portions of the two other <i>important populations</i> along San Juan Creek and Radio Tower Road would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.
Orange-throated Whiptail	121 locations (70%) and 24,842 acres (86%) of coastal sage scrub, chaparral and woodland would be conserved. All 59 locations in the Chiquita Canyon/Wagon Wheel Canyon <i>important population/key location</i> would be conserved. 7 of 18 locations (39%) of the Chiquadora Ridge <i>important population/key location</i> and 9 of 47 locations (19%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.	98 locations (67%) and 9,228 acres (76%) of coastal sage scrub, chaparral and woodland would be conserved. All 53 locations in the Chiquita Canyon/Wagon Wheel Canyon <i>important population/key location</i> would be conserved. 7 of 18 locations (39%) of the Chiquadora Ridge <i>important population/key location</i> and 9 of 47 locations (19%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.
San Diego Horned Lizard	48 locations (96%) and 23,369 acres (86%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.	41 locations (95%) and 8,942 acres (78%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.
Southwestern Pond Turtle	5 of 8 locations would be conserved, including the <i>important population/key location</i> riparian and aquatic habitats along San Juan Creek, and the stockpond and other wetlands in Upper Cristianitos. Locations in San Juan Creek and the adjacent floodplain providing nesting/ estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas. An <i>important population/ key location</i> in Upper Gabino at Jerome's Lake would be impacted.	Same as Planning Area.

**TABLE M-37 (Continued)  
ALTERNATIVE B-6 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Mountain Lion	<p>Limited development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Middle Gabino canyons would be conserved. Development in Upper Gabino Canyon may affect the mountain lion's use of this area. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing an uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-6 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, and San Juan Creek, although the relatively long interface between the creek and development north and south of the creek may affect lion movement through this area. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.</p>	<p>Limited development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Middle Gabino canyons would be conserved. Development in Upper Gabino Canyon may affect the mountain lion's use of this area. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing an uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-6 on RMV providing for mountain lion movement would be Chiquita Ridge and Canyon, and San Juan Creek, although the relatively long interface between the creek and development north and south of the creek may affect lion movement through this area. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.</p>
Mule Deer	<p>Limited development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Middle Gabino canyons would be conserved. Development in Upper Gabino Canyon may somewhat affect the mule deer's use of the area and bring them into greater contact with humans (e.g., vehicle collisions), but this impact would not be significant because of the deer's tolerance for human presence. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing an uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-6 providing for mule deer movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, and San Juan Creek. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.</p>	<p>Limited development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Middle Gabino canyons would be conserved on RMV. Development in Upper Gabino Canyon may somewhat affect the mule deer's use of the area and bring them into greater contact with humans (e.g., vehicle collisions), but this impact would not be significant because of the deer's tolerance for human presence. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing an uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-6 on RMV providing for mule deer movement would be Chiquita Ridge and Canyon, and San Juan Creek. Development in Lower Sulphur Canyon and Gobernadora may preclude direct east-west movement between Caspers Wilderness Park and Thomas F. Riley Wilderness Park.</p>
Chaparral Beargrass	<p>The Talega sub-basin <i>important population/key location</i> would be conserved.</p>	<p>Same as Planning Area.</p>
Coulter's Saltbush	<p>2,986 individuals (97%) and 30 locations (86%) would be conserved. 100% of the <i>major population/key location</i> and <i>important population/key location</i> in Middle Chiquita Canyon would be conserved, as would the <i>important populations</i> in Lower Chiquita and Upper Cristianitos canyons. The only impacted population would be the <i>important population</i> located in Upper Gabino Canyon.</p>	<p>Same as Planning Area.</p>
Intermediate Mariposa Lily	<p>Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.</p>	<p>Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.</p>

**TABLE M-37 (Continued)  
ALTERNATIVE B-6 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Many-stemmed Dudleya	40,013 individuals (70%) and 228 locations (67%) would be conserved. Of the <i>major populations/key locations</i> , 73% of individuals and 83% of locations of the Chiquadora Ridge population, 95% of individuals and 83% of locations of the Upper Gabino/La Paz Canyon population, 71% of individuals and 79% of locations of the Cristianitos Canyon population, and 4% of individuals and 3% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 100% of the Lower Chiquita Canyon population/locations, and 84% of the individuals and 54% of the locations in the Upper Gobernadora population would be conserved. In the East Talega <i>important population</i> , 100% of the population/locations would be conserved.	29,908 individuals (63%) and 176 locations (61%) would be conserved on RMV. Of the <i>major populations/key locations</i> , 73% of individuals and 83% of locations of the Chiquadora Ridge population, 95% of individuals and 83% of locations of the Upper Gabino/La Paz Canyon population, 71% of individuals and 79% of locations of the Cristianitos Canyon population, and 4% of individuals and 3% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/ locations, 100% of the Lower Chiquita Canyon population/locations, and 84% of the individuals and 54% of the locations in the Upper Gobernadora population would be conserved. In the East Talega <i>important population</i> , 100% of the population/locations would be conserved.
Mud Nama	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	1 of 3 populations totaling 350 individuals (3%) along Radio Tower Road would be conserved on RMV. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring Checkerbloom	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	Same as Planning Area.
Southern Tarplant	145,000+ individuals (100%) and 42 locations (100%) would be conserved.	Same as Planning Area.
Source: Dudek 2004		

**TABLE M-38  
ALTERNATIVE B-8 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Arroyo Toad	100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. No development would occur in the San Mateo Creek Watershed. Along San Juan Creek, development would be offset an average of about 300 feet north of the floodplain.	Same as Planning Area.
Coastal California Gnatcatcher	627 locations (87%) and 17,811 acres (90%) of suitable habitat would be conserved, including 384 of 404 locations (95%) and 3,020 acres of 3,126 acres of coastal sage scrub (97%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-8 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i> ; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i> ; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i> ; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> ; 34 of 35 locations (97%) of the West San Juan Capistrano <i>important population/ key location</i> ; 28 of 41 locations (68%) of the Arroyo Trabuco <i>important population</i> and 13 of 13 locations (100%) in the Upper Cristianitos Canyon <i>important population</i> . A total of 568 of 644 locations (88%) within <i>major and important populations</i> would be in B-8. (The two <i>important populations</i> in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)	222 locations (91%) and 6,799 acres (89%) of suitable habitat would be conserved on RMV, including 186 of 188 locations (99%) and 1,320 acres of 1,322 acres of coastal sage scrub (99+%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-8 would include 1 of 1 location of the East San Juan Capistrano population, 6 of 7 locations (86%) of the Trampas Canyon population, and all 12 locations in the Upper Cristianitos Canyon population. A total of 205 locations (98%) within <i>major and important populations</i> would be conserved on RMV in B-8.
Least Bell's Vireo	47 of 54 breeding locations (87%) and approximately 821 acres (74%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both important populations in the planning area – in GERA and Arroyo Trabuco – would be conserved.	30 of 30 breeding locations (100%) and approximately 488 acres (93%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single <i>important population</i> on RMV in GERA would be conserved.
Southwestern Willow Flycatcher	7 of 7 breeding locations and approximately 821 acres (74%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved.	6 of 6 breeding locations and approximately 488 acres (93%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single identified <i>important population</i> in GERA would be conserved.
Riverside Fairy Shrimp	The vernal pool complexes supporting Riverside fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	The vernal pool complexes supporting Riverside fairy shrimp along Radio Tower Road, including their contributing hydrological sources, would be conserved on RMV. The easternmost pools on Radio Tower Road would be avoided through project design.
San Diego Fairy Shrimp	The vernal pool complexes supporting San Diego fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design.	The vernal pool complexes supporting San Diego fairy shrimp along Radio Tower Road, including their contributing hydrological sources, would be conserved on RMV. The easternmost pools on Radio Tower Road would be avoided through project design.

**TABLE M-38 (Continued)  
ALTERNATIVE B-8 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Thread-leaved Brodiaea	9,618 flowering stalks (100%) and 34 locations (100%) would be conserved. The two <i>major populations/ key locations</i> located on Chiquadora Ridge and in southern Cristianitos/Gabino canyons would be conserved. <i>Important populations</i> in Cristianitos Canyon, Middle Gabino, Trampas Canyon, Talega sub-basin, and Arroyo Trabuco also would be conserved.	9,314 flowering stalks (100%) and 30 locations (100%) would be conserved on RMV. The two <i>major populations/ key locations</i> located on Chiquadora Ridge and in southern Cristianitos/Gabino canyons would be conserved. <i>Important populations</i> in Cristianitos Canyon, Middle Gabino, Trampas Canyon, and the Talega sub-basin also would be conserved.
Cactus Wren	1,231 locations (92%) and 17,811 acres (90%) of suitable habitat would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	465 locations (89%) and 6,799 acres (89%) of suitable habitat would be conserved on RMV. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.
Cooper's Hawk	40 historic nest locations (91%) and 6,142 acres (87%) of suitable habitat (riparian, woodlands and forest) would be conserved. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, Verdugo, and Arroyo Trabuco.	22 historic nest locations (96%) and 2,150 acres (86%) of suitable habitat (riparian, woodlands and forest) would be conserved on RMV. No major/important populations identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Gobernadora, and Verdugo.
Golden Eagle	Approximately 13,824 acres (74%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Chiquita Canyon, and throughout the San Mateo Creek Watershed.	Approximately 6,143 acres (81%) of grassland and agricultural foraging habitat would be conserved on RMV. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Chiquita Canyon, and throughout the San Mateo Creek Watershed.
Grasshopper Sparrow	639 locations (88%) and 10,987 acres (73%) of grassland would be conserved. Approximately 90% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 99% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	544 locations (92%) and 4,206 acres (83%) of grassland would be conserved on RMV. Approximately 93% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 96% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 100% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.
Merlin	Approximately 13,824 acres (74%) of grassland and agricultural foraging habitat would be conserved. All identified and potential key foraging habitat throughout the planning area would conserved, including Chiquita Canyon, Radio Tower Road, Cristianitos Canyon and Upper Gabino Canyon.	Approximately 6,143 acres (81%) of grassland and agricultural foraging habitat would be conserved on RMV. All identified and potential key foraging habitat throughout RMV would conserved, including Chiquita Canyon, Radio Tower Road, Cristianitos Canyon and Upper Gabino Canyon.

**TABLE M-38 (Continued)**  
**ALTERNATIVE B-8 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Tricolored Blackbird	The majority of historic breeding locations and adjacent uplands would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved in the Narrows area of Chiquita Canyon, San Juan Creek (including the mouth of Verdugo Canyon), south of a ranch residence south of Ortega Highway, and the "Riverside Cement" colony in Lower Cristianitos and Lower Gabino canyons.	Same as Planning Area.
White-tailed Kite	31 historic nest locations (86%) and 6,142 acres (87%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	13 historic nest locations (93%) and 2,150 acres (86%) of riparian and woodland habitats would be conserved on RMV. In particular, nesting and foraging habitat would be conserved in GERA, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.
Yellow Warbler	26 locations (81%) and 4,521 acres (87%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas, Chiquita and Lower Gobernadora canyons also would be conserved.	16 locations (100%) and 1,716 acres (89%) of riparian habitat would be conserved on RMV. All three of the <i>important populations</i> on RMV would be conserved. Scattered locations in Lower Gobernadora and Chiquita canyons also would be conserved.
Yellow-breasted Chat	111 locations (86%) and 4,521 acres (87%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	67 locations (90%) and 1,716 acres (89%) of riparian habitat would be conserved on RMV. All four of the <i>important populations</i> on RMV would be conserved. Scattered locations in Middle Chiquita, Verdugo, Lower Gabino and La Paz canyons also would be conserved.
Western Spadefoot Toad	19 locations (86%) and all of four <i>important populations</i> (Chiquita Ridge, Radio Tower Road, Upper Cristianitos, Lower Gabino Creek) would be conserved. A portion of the fifth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	14 locations (93%) and all of three <i>important populations</i> (Radio Tower Road, Upper Cristianitos, Lower Gabino Creek) would be conserved. A portion of the fourth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.
Orange-throated Whiptail	139 locations (81%) and 26,176 acres (91%) of coastal sage scrub, chaparral and woodland would be conserved. All 59 locations in the Chiquita Canyon/Wagon Wheel Canyon and all 18 locations in the Chiquadora Ridge <i>important populations/key locations</i> would be conserved. 16 of 47 locations (34%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.	116 locations (79%) and 10,560 acres (88%) of coastal sage scrub, chaparral and woodland would be conserved on RMV. All 53 locations in the Chiquita Canyon/Wagon Wheel Canyon and all 18 locations in the Chiquadora Ridge <i>important populations/key locations</i> would be conserved. 16 of 47 locations (34%) of the Gobernadora/San Juan Creek <i>important population/key location</i> would be conserved.
San Diego Horned Lizard	50 locations (100%) and 24,555 acres (91%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.	43 locations (100%) and 10,126 acres (88%) of coastal sage scrub and chaparral would be conserved on RMV. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.

**TABLE M-38 (Continued)  
ALTERNATIVE B-8 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Southwestern Pond Turtle	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome's Lake in Upper Gabino. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. All conserved sites would have buffers of at least 328 ft from adjacent development and southern exposures to provide nesting and overwintering sites. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal.	Same as Planning Area.
Mountain Lion	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing and uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-8 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, and San Juan Creek.	No development is proposed in the RMV portion of the San Mateo Creek Watershed. A large "live-in" block of habitat including the Talega, La Paz, Cristianitos and Gabino and Blind Canyons sub-basins would be conserved. In the San Juan Creek Watershed, the Verdugo sub-basin would be conserved, providing and uninterrupted link to Caspers Wilderness Park and the CNF. Other areas of B-8 on RMV providing for mountain lion movement would be Chiquita Ridge and Canyon and San Juan Creek.
Mule Deer	No development is proposed in the RMV portion of the San Mateo Creek Watershed, resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The Verdugo sub-basin would be conserved, providing an uninterrupted link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of B-8 providing for mule deer "live-in" and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge and Canyon, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the RMV portion of the San Mateo Creek Watershed, resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The Verdugo sub-basin would be conserved, providing an uninterrupted link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of B-8 on RMV providing for mule deer "live-in" and/or movement habitat would be Chiquita Ridge and Canyon, Sulphur Canyon, San Juan Creek, and Trampas Canyon.
Chaparral Beargrass	The Talega sub-basin <i>important population/key location</i> would be conserved.	Same as Planning Area.
Coulter's Saltbush	3,086 individuals (100%) and 35 locations (100%) would be conserved.	Same as Planning Area.
Intermediate Mariposa Lily	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
Many-stemmed Dudleya	51,092 individuals (89%) and 275 locations (81%) would be conserved. Of the <i>major populations/key locations</i> , 100% of individuals/locations of the Chiquadora Ridge population, the Upper Gabino/La Paz Canyon population, and the Cristianitos Canyon population would be conserved. 4% of individuals and 8% of locations of the Gobernadora <i>major population/key location</i> would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 100% of the Lower Chiquita Canyon population/locations, and 89% of the individuals and 78% of the locations in the Upper Gobernadora population would be conserved. In the East Talega <i>important population</i> , 100% of the population/locations would be conserved.	40,987 individuals (87%) and 223 locations (78%) would be conserved on RMV. Of the <i>major populations/key locations</i> , 100% of individuals/locations of the Chiquadora Ridge population, the Upper Gabino/La Paz Canyon population, and the Cristianitos Canyon population would be conserved. 4% of individuals and 8% of locations of the Gobernadora <i>major population/key location</i> would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 100% of the Lower Chiquita Canyon population/locations, and 89% of the individuals and 78% of the locations in the Upper Gobernadora population would be conserved. In the East Talega <i>important population</i> , 100% of the population/locations would be conserved.



**TABLE M-38 (Continued)  
ALTERNATIVE B-8 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Mud Nama	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	1 of 3 populations totaling 350 individuals (3%) along Radio Tower Road would be conserved on RMV. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring Checkerbloom	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	Same as Planning Area.
Southern Tarplant	145,000+ individuals (100%) and 42 locations (100%) would be conserved.	Same as Planning Area.
Source: Dudek 2004		

**TABLE M-39  
ALTERNATIVE B-9 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Arroyo Toad	100% of breeding locations comprising <i>major and important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. In the San Mateo Creek Watershed the minimum elevation differential between development and breeding locations would be 80 ft. Along San Juan Creek, development would be offset by at least 300 feet south of the floodplain and an average of about 300 feet north of the floodplain.	Same as Planning Area.
Coastal California Gnatcatcher	602 locations (84%) and 16,663 acres (84%) of suitable habitat (coastal sage scrub) would be conserved, including 366 of 404 locations (90%) and 2,826 acres of 3,126 acres of coastal sage scrub (90%) within the <i>major population</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> the B-9 Habitat Reserve would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i> ; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i> ; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i> ; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> ; all 13 locations of Upper Cristianitos <i>important population/key location</i> , 34 of 35 locations (97%) of the West San Juan Capistrano <i>important population/key location</i> ; and 28 of 41 locations (68%) of the Arroyo Trabuco <i>important population</i> . In total, 550 of 644 locations (85%) within <i>major and important populations</i> would be in the B-9 Habitat Reserve (the two <i>important populations</i> in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program).	197 locations (81%) and 5,621 acres (73%) of suitable habitat (coastal sage scrub) would be conserved on RMV, including 168 of 188 locations (89%) and 1,124 acres of 1,322 acres of coastal sage scrub (85%) within the <i>major population</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations/key locations</i> on RMV, the B-9 Habitat Reserve would include 1 of 1 location of the East San Juan Capistrano population, 6 of 7 locations (86%) of the Trampas Canyon population and all 12 locations in the Upper Cristianitos population. In total, 187 locations (89%) within <i>major and important populations</i> would be in the B-9 Habitat Reserve.
Least Bell's Vireo	47 of 54 breeding locations (87%) and approximately 814 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both <i>important populations</i> in the planning area – in GERA and Arroyo Trabuco – would be conserved.	30 of 30 breeding locations (100%) and approximately 482 acres (92%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single <i>important population</i> on RMV in GERA would be conserved.
Southwestern Willow Flycatcher	7 of 7 breeding locations (100%) and approximately 814 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved.	6 of 6 breeding locations (100%) and approximately 482 acres (92%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved.
Riverside Fairy Shrimp	The vernal pool complexes supporting Riverside fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	The vernal pool complexes supporting Riverside fairy shrimp along Radio Tower Road on RMV, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design.

**TABLE M-39 (Continued)**  
**ALTERNATIVE B-9 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
San Diego Fairy Shrimp	The vernal pool complexes supporting San Diego fairy shrimp on Chiquita Ridge and along Radio Tower Road, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design.	The vernal pool complexes supporting San Diego fairy shrimp along Radio Tower Road on RMV, including their contributing hydrological sources, would be conserved. The easternmost pools on Radio Tower Road would be avoided through project design.
Thread-leaved Brodiaea	9,300 flowering stalks (97%) and 27 of 34 locations (79%) would be conserved. The <i>major population/ key location</i> located in southern Cristianitos/Gabino canyons would be 100% conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. All 13 locations totaling about 400 flowering stalks in the <i>important population</i> Cristianitos would be conserved as would the Trampas Canyon, Middle Gabino, and Arroyo Trabuco <i>important populations</i> . In the Talega <i>important population</i> 4 locations totaling about 288 flowering stalks would be in the Habitat Reserve or non-reserve open space.	9,066 flowering stalks (97%) and 24 of 30 locations (80%) would be conserved on RMV. The <i>major population/ key location</i> located in southern Cristianitos/Gabino canyons would be 100% conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. All 13 locations totaling about 400 flowering stalks in the <i>important population</i> Cristianitos would be conserved as would the Trampas and Middle Gabino <i>important populations</i> . In the Talega <i>important population</i> 4 locations totaling about 288 flowering stalks would be in the Habitat Reserve or non-reserve open space.
Cactus Wren	1,128 locations (85%) and 16,633 acres (84%) of suitable habitat (coastal sage scrub) would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	362 locations (69%) and 5,621 acres (73%) of suitable habitat (coastal sage scrub) would be conserved on RMV. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.
Cooper's Hawk	36 historic nest locations (82%) and 5,853 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No <i>major/important populations</i> were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, Verdugo, and Arroyo Trabuco.	18 historic nest locations (78%) and 1,862 acres (74%) of suitable habitat (riparian, woodlands and forest) would be conserved on RMV. No <i>major/important populations</i> were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, and Verdugo.
Golden Eagle	Approximately 12,579 acres (67%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Middle and Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.	Approximately 4,900 acres (65%) of grassland and agricultural foraging habitat would be conserved on RMV. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Middle and Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.
Grasshopper Sparrow	563 locations (77%) and 10,267 acres (69%) of grassland habitat would be conserved. Approximately 76% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 82% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	469 locations (80%) and 3,487 acres (69%) of grassland habitat would be conserved on RMV. Approximately 78% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 96% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 82% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.

**TABLE M-39 (Continued)**  
**ALTERNATIVE B-9 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Merlin	Approximately 12,580 acres (67%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Middle and Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon, Cristianitos Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower Chiquita would be developed.	Approximately 4,900 acres (65%) of grassland and agricultural foraging habitat would be conserved on RMV. Key foraging habitat in Middle and Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon, Cristianitos Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower Chiquita would be developed.
Tricolored Blackbird	The majority of historic breeding locations and adjacent uplands would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved in the Narrows area of Chiquita Canyon, San Juan Creek (including the mouth of Verdugo Canyon), south of a ranch residence south of Ortega Highway, and the "Riverside Cement" colony in Lower Cristianitos and Lower Gabino canyons.	Same as Planning Area.
White-tailed Kite	30 historic nest locations (83%) and 5,853 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	12 historic nest locations (86%) and 1,862 acres (74%) of riparian and woodland habitats would be conserved on RMV. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.
Yellow Warbler	26 locations (81%) and 4,360 acres (84%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas, Chiquita and Lower Gobernadora canyons also would be conserved.	16 locations (100%) and 1,555 acres (81%) of riparian habitat would be conserved on RMV. All three of the <i>important populations</i> on RMV would be conserved. Scattered locations in Lower Gobernadora and Chiquita canyons also would be conserved.
Yellow-breasted Chat	109 locations (85%) and 4,360 acres (84%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	66 locations (89%) and 1,555 acres (81%) of riparian habitat would be conserved on RMV. All four of the <i>important populations</i> on RMV would be conserved. Scattered locations in Middle Chiquita, Verdugo, Lower Gabino and La Paz canyons also would be conserved.
Western Spadefoot Toad	19 locations (86%) and all of four <i>important populations</i> (Chiquita Ridge, Radio Tower Road, Upper Cristianitos, Lower Gabino Creek) would be conserved. A portion of the fifth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	14 locations (93%) and all of three <i>important populations</i> (Radio Tower Road, Upper Cristianitos, Lower Gabino Creek) would be conserved. A portion of the fourth <i>important population</i> along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.
Orange-throated Whiptail	133 locations (77%) and 24,244 acres (84%) of coastal sage scrub, chaparral and woodland would be conserved. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and all 59 locations in the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 14 of 47 locations (30%) would be conserved.	110 locations (75%) and 8,629 acres (72%) of coastal sage scrub, chaparral and woodland would be conserved on RMV. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and all 53 locations in the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved on RMV. In the Gobernadora/San Juan Creek <i>important population/key location</i> 14 of 47 locations (30%) would be conserved.
San Diego Horned Lizard	43 locations (86%) and 22,751 acres (84%) of coastal sage scrub and chaparral would be conserved. Both <i>important populations/ key locations</i> would be 100% conserved.	36 locations (84%) and 8,322 acres (73%) of coastal sage scrub and chaparral would be conserved on RMV. Both <i>important populations/ key locations</i> would be 100% conserved.

**TABLE M-39 (Continued)  
ALTERNATIVE B-9 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Southwestern Pond Turtle	6 of 8 locations would be conserved, including <i>important populations/key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, Jerome's Lake in Upper Gabino, and the location west of Airplane Canyon. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. All conserved sites would have buffers of at least 328 ft from adjacent development and southern exposures to provide nesting and overwintering sites. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal.	Same as Planning Area.
Mountain Lion	No development is proposed in the Gabino, La Paz, Cristianitos, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the B-9 Habitat Reserve providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, and San Juan Creek.	No development is proposed in the Gabino, La Paz, Cristianitos, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas on RMV under B-9 providing for mountain lion movement would be Chiquita Ridge, Sulphur Canyon, and San Juan Creek.
Mule Deer	No development is proposed in the Gabino, La Paz, Cristianitos, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the B-9 Habitat Reserve providing for mule deer "live-in" and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the Gabino, La Paz, Cristianitos, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas on RMV under B-9 providing for mule deer "live-in" and/or movement habitat would be Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.
Chaparral Beargrass	The Talega sub-basin <i>important population/key location</i> would be conserved.	Same as Planning Area.
Coulter's Saltbush	3,086 individuals (100%) and 35 locations (100%) would be conserved.	Same as Planning Area.
Intermediate Mariposa Lily	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.
Many-stemmed Dudleya	44,700 individuals (78%) and 231 locations (68%) would be conserved. Of the <i>major populations/key locations</i> , 99% of individuals and 91% of locations of the Chiquadora Ridge population, 99% of individuals and 96% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 3% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 20% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	34,630 individuals (73%) and 179 locations (61%) would be conserved on RMV. Of the <i>major populations/key locations</i> , 99% of individuals and 91% of locations of the Chiquadora Ridge population, 80% of individuals and 84% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 3% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 20% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.

**TABLE M-39 (Continued)  
ALTERNATIVE B-9 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Mud Nama	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	1 of 3 populations totaling 350 individuals (3%) along Radio Tower Road would be conserved on RMV. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring Checkerbloom	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	Same as Planning Area.
Southern Tarplant	145,000+ individuals (100%) and 42 locations (100%) would be conserved.	Same as Planning Area.
<i>Source: Dudek 2004</i>		

**TABLE M-40  
ALTERNATIVE B-10 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Arroyo Toad	100% of breeding locations comprising <i>major</i> and <i>important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. In the San Mateo Creek Watershed the minimum elevation differential between development and breeding locations would be 80 ft. Along San Juan Creek, development would be offset by at least 300 feet south of the floodplain and an average of about 300 feet north of the floodplain.	Same as Planning Area.
Coastal California Gnatcatcher	593 locations (82%) and 16,610 acres (84%) of suitable habitat would be conserved, including 354 of 404 locations (88%) and 2,760 acres of 3,126 acres of coastal sage scrub (88%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-4 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i> ; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i> ; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i> ; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> ; 34 of 35 locations (97%) of the West San Juan Capistrano <i>important population/ key location</i> ; 28 of 41 locations (68%) of the Arroyo Trabuco <i>important population</i> , and all 13 locations in the Upper Cristianitos <i>important population</i> . Approximately, 538 of 644 locations (83%) within <i>major</i> and <i>important populations</i> would be in B-10. (The two <i>important populations</i> in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)	188 locations (77%) and 5,598 acres (73%) of suitable habitat would be conserved on RMV, including 156 of 188 locations (83%) and 1,060 acres of 1,322 acres of coastal sage scrub (80%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations/key locations</i> B-10 would include 1 of 1 location of the East San Juan Capistrano population, 6 of 7 locations (86%) of the Trampas Canyon population and all 12 locations in the Upper Cristianitos population. 175 locations (84%) within <i>major</i> and <i>important populations</i> would be in RMV in the B-10 Habitat Reserve.
Least Bell's Vireo	47 of 54 breeding locations (87%) and approximately 808 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both <i>important populations</i> in the planning area – in GERA and Arroyo Trabuco – would be conserved.	29 of 30 breeding locations (97%) and approximately 476 acres (91%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single <i>important population</i> on RMV in GERA would be conserved.
Southwestern Willow Flycatcher	7 of 7 breeding locations and approximately 808 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved.	6 of 6 breeding locations and approximately 476 acres (91%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single identified <i>important population</i> in GERA would be conserved.
Riverside Fairy Shrimp	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	1 of 2 vernal pool complexes supporting Riverside fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.
San Diego Fairy Shrimp	2 of 3 vernal pool complexes supporting San Diego fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.	1 of 2 vernal pool complexes supporting San Diego fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.

**TABLE M-40 (Continued)**  
**ALTERNATIVE B-10 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Thread-leaved Brodiaea	9,343 (97%) flowering stalks and 28 of 34 locations (82%) would be conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. 11 locations totaling about 210 flowering stalks in the Cristianitos <i>important population</i> would be conserved, as would 100% of the Middle Gabino, Trampas Canyon, East Talega and Arroyo Trabuco <i>important populations</i> .	9,039 flowering stalks (97%) and 24 of 30 locations (80%) would be conserved on RMV. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/ key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. 11 locations totaling about 210 flowering stalks in the Cristianitos <i>important population</i> would be conserved, as would 100% of the Middle Gabino, Trampas Canyon, and East Talega <i>important populations</i> .
Cactus Wren	1,110 locations (83%) and 16,610 acres (84%) of suitable habitat (coastal sage scrub) would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	343 locations (66%) and 5,598 acres (73%) of suitable habitat (coastal sage scrub) would be conserved on RMV. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.
Cooper's Hawk	36 historic nest locations (82%) and 5,861 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No <i>major/important populations</i> were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, Verdugo, and Arroyo Trabuco.	18 historic nest locations (78%) and 1,869 acres (75%) of suitable habitat (riparian, woodlands and forest) would be conserved on RMV. No <i>major/important populations</i> were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, and Verdugo.
Golden Eagle	Approximately 12,134 acres (65%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.	Approximately 4,461 acres (59%) of grassland and agricultural foraging habitat would be conserved on RMV. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.
Grasshopper Sparrow	480 locations (66%) and 10,031 acres (67%) of grassland would be conserved. Approximately 58% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 71% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	385 locations (66%) and 3,256 acres (65%) of grassland would be conserved on RMV. Approximately 58% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 96% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 82% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.
Merlin	Approximately 12,134 acres (65%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.	Approximately 4,461 acres (59%) of grassland and agricultural foraging habitat would be conserved on RMV. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.



**TABLE M-40 (Continued)  
ALTERNATIVE B-10 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Tricolored Blackbird	Approximately 50% of the historic nesting colony areas would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved south of a ranch residence south of Ortega Highway. Potential breeding/foraging areas that would be affected by development include the Narrows area of Chiquita Canyon and at the mouth of Verdugo Canyon.	Same as Planning Area.
White-tailed Kite	30 historic nest locations (83%) and 5,861 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	12 historic nest locations (86%) and 1,896 acres (75%) of riparian and woodland habitats would be conserved on RMV. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.
Yellow Warbler	27 locations (82%) and 4,348 acres (83%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas, Chiquita and Lower Gobernadora canyons also would be conserved.	17 locations (100%) and 1,543 acres (80%) of riparian habitat would be conserved on RMV. All three of the <i>important populations</i> on RMV would be conserved. Scattered locations in Lower Gobernadora and Chiquita canyons also would be conserved.
Yellow-breasted Chat	109 locations (85%) and 4,348 acres (83%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	66 locations (88%) and 1,543 acres (80%) of riparian habitat would be conserved on RMV. All four of the <i>important populations</i> on RMV would be conserved. Scattered locations in upper San Juan Creek and Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.
Western Spadefoot Toad	17 locations (77%) and all of three <i>important populations</i> (Chiquita Ridge, Upper Cristianitos, Lower Gabino Creek) would be conserved. Portions of two other <i>important populations</i> along Radio Tower Road and San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	11 locations (73%) and all of two <i>important populations</i> (Upper Cristianitos, Lower Gabino Creek) would be conserved on RMV. Portions of two other <i>important populations</i> along Radio Tower Road and San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.
Orange-throated Whiptail	129 locations (75%) and 24,255 acres (84%) of coastal sage scrub, chaparral and woodland would be conserved. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and 55 of 59 locations (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 12 of 47 locations (25%) would be conserved.	106 locations (72%) and 8,638 acres (72%) of coastal sage scrub, chaparral and woodland would be conserved on RMV. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and 49 of 53 locations (92%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 12 of 47 locations (25%) would be conserved.
San Diego Horned Lizard	44 locations (86%) and 22,742 acres (84%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.	36 locations (84%) and 8,312 acres (72%) of coastal sage scrub and chaparral would be conserved. The <i>important populations/key locations</i> in Upper Cristianitos and on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be 100% conserved.

**TABLE M-40 (Continued)**  
**ALTERNATIVE B-10 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Southwestern Pond Turtle	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome's Lake in Upper Gabino. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas.	Same as Planning Area.
Mountain Lion	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the B-19 Habitat Reserve providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, and San Juan Creek.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of RMV under B-10 providing for mountain lion movement would be Chiquita Ridge, Sulphur Canyon, and San Juan Creek.
Mule Deer	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of the B-10 Habitat Reserve providing for mule deer "live-in" and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of RMV under the B-10 providing for mule deer "live-in" and/or movement habitat would be Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.
Chaparral Beargrass	The Talega sub-basin <i>important population/key location</i> would be conserved.	Same as Planning Area.
Coulter's Saltbush	3,077 individuals (99%) and 33 locations (94%) would be conserved. Only a few individuals in the Middle Chiquita Canyon <i>major population/key location</i> and one other non-key location would be impacted.	Same as Planning Area.
Intermediate Mariposa Lily	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.

**TABLE M-40 (Continued)**  
**ALTERNATIVE B-10 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Many-stemmed Dudleya	41,538 individuals (69%) and 236 locations (69%) would be conserved. Of the <i>major populations/key locations</i> , 99% of individuals and 92% of locations of the Chiquadora Ridge population, 88% of individuals and 90% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 4% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 22% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	31,433 individuals (67%) and 183 locations (61%) would be conserved on RMV. Of the <i>major populations/key locations</i> , 99% of individuals and 92% of locations of the Chiquadora Ridge population, 83% of individuals and 84% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 4% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 22% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.
Mud Nama	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	1 of 3 populations totaling 350 individuals (3%) on RMV along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring Checkerbloom	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	Same as Planning Area.
Southern Tarplant	121,000+ individuals (83%) and 36 locations (85%) would be conserved. Approximately 96,113 individuals (81%) and 27 locations (77%) of the <i>major population/key location</i> in Middle Chiquita and 3,122 individuals (83%) and 3 locations (60%) in the <i>important population/key location</i> north of the treatment plant would be conserved. The <i>major populations/key locations</i> in Lower Chiquita Canyon (the Tesoro mitigation site) and Gobernadora (GERA) would be conserved.	Same as Planning Area.
Source: Dudek 2004		

**TABLE M-41  
ALTERNATIVE B-11 PROTECTION OF PLANNING SPECIES WITHIN  
PLANNING AREA AND RANCHO MISSION VIEJO**

<b>Planning Species</b>	<b>Planning Area</b>	<b>RMV</b>
Arroyo Toad	100% of breeding locations comprising <i>major</i> and <i>important populations</i> in <i>key locations</i> in San Juan Creek, Bell Canyon, lower Gabino Creek, lower Cristianitos Creek and Talega Creek would be conserved, as well as the majority of adjacent upland habitats. In the San Mateo Creek Watershed the minimum elevation differential between development and breeding locations would be 80 ft. Along San Juan Creek, development would be offset by at least 300 feet south of the floodplain and an average of about 300 feet north of the floodplain.	Same as Planning Area.
Coastal California Gnatcatcher	572 locations (79%) and 16,203 acres (82%) of suitable habitat would be conserved, including 338 of 404 locations (84%) and 2,716 acres of 3,126 acres of coastal sage scrub (87%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-11 would include: 7 of 8 locations (87%) of the Avenida Pico <i>important population/key location</i> ; 14 of 15 locations (93%) of the East Caspers Wilderness Park <i>important population</i> (one location is mapped in the Nichols Institute property); all 52 locations of the East Coto de Caza/Starr Ranch <i>important population/key location</i> ; 10 of 28 locations (39%) of the East San Juan Capistrano <i>important population/key location</i> (17 locations are mapped on the Whispering Hills development project area); 20 of 21 locations (95%) of the North San Clemente <i>important population/key location</i> ; 6 of 7 locations (86%) of the Trampas Canyon <i>important population/key location</i> ; 34 of 35 locations (97%) of the West San Juan Capistrano <i>important population/ key location</i> ; and 28 of 41 locations (68%) of the Arroyo Trabuco <i>important population</i> , and all 13 locations in the Upper Cristianitos <i>important population</i> . Approximately 515 of 644 locations (80%) within <i>major</i> and <i>important populations</i> would be in B-11. (The two <i>important populations</i> in the Foothill-Trabuco Specific Plan Area are in Existing Use areas and are considered conserved as no Incidental Take is authorized by this program.)	167 locations (69%) and 5,192 acres (68%) of suitable habitat would be conserved on RMV, including 140 of 188 locations (74%) and 1,016 acres of 1,322 acres of coastal sage scrub (77%) within the <i>major population/key location</i> in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin. For <i>important populations</i> B-11 would include 1 of 1 location of the East San Juan Capistrano population, 6 of 7 locations (86%) of the Trampas Canyon populations and all 12 locations in the Upper Cristianitos population. 159 location (76%) within <i>major</i> and <i>important populations</i> would be in B-11.
Least Bell's Vireo	47 of 54 breeding locations (87%) and approximately 805 acres (72%) of southern willow scrub/arroyo willow riparian forest would be conserved. Both <i>important populations</i> in the planning area – in GERA and Arroyo Trabuco – would be conserved.	29 of 30 breeding locations (97%) and approximately 473 acres (90%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single <i>important population</i> on RMV in GERA would be conserved.
Southwestern Willow Flycatcher	7 of 7 breeding locations and approximately 805 acres (73%) of southern willow scrub/arroyo willow riparian forest would be conserved. The single identified <i>important population</i> in GERA would be conserved.	6 of 6 breeding locations and approximately 473 acres (90%) of southern willow scrub/arroyo willow riparian forest would be conserved on RMV. The single identified <i>important population</i> in GERA would be conserved.
Riverside Fairy Shrimp	2 of 3 vernal pool complexes supporting Riverside fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development. Vernal pools supporting the species on Saddleback Meadows are in the Foothill-Trabuco Specific Plan Area (FTSP) which is designated as Existing Use and would be dealt with in the permitting for that project.	1 of 2 vernal pool complexes supporting Riverside fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.

**TABLE M-41 (Continued)**  
**ALTERNATIVE B-11 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
San Diego Fairy Shrimp	2 of 3 vernal pool complexes supporting San Diego fairy shrimp would be conserved; the Chiquita Ridge complex and western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.	1 of 2 vernal pool complexes supporting San Diego fairy shrimp would be conserved on RMV; the western complex along Radio Tower Road. The eastern complex along Radio Tower Road would be impacted by the Trampas Canyon development.
Thread-leaved Brodiaea	3,110 (32%) flowering stalks and 19 of 34 locations (56%) would be conserved. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. 6,100 flowering stalks (100%) in the Lower Cristianitos/Lower Gabino <i>major population/key location</i> would be impacted, as would 5 locations totaling 315 flowering stalks in the Cristianitos <i>important population</i> . <i>Important populations</i> in Trampas Canyon, Middle Gabino, East Talega and Arroyo Trabuco would be 100% conserved.	2,806 (30%) flowering stalks and 15 of 30 locations (50%) would be conserved on RMV. The location supporting 2,000 flowering stalks in the Chiquadora Ridge <i>major population/key location</i> would be conserved, and 4 smaller populations totaling about 85 flowering stalks would be developed. 6,100 flowering stalks (100%) in the Lower Cristianitos/Lower Gabino <i>major population/key location</i> would be impacted, as would 5 locations totaling 315 flowering stalks in the Cristianitos <i>important population</i> . <i>Important populations</i> in Trampas Canyon, Middle Gabino, and East Talega would be 100% conserved.
Cactus Wren	1,073 locations (80%) and 16,203 acres (82%) of suitable habitat (coastal sage scrub) would be conserved. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.	306 locations (58%) and 5,192 acres (68%) of suitable habitat (coastal sage scrub) would be conserved on RMV. Habitat connectivity would be maintained, including: north-south connections along Chiquita and Chiquadora ridges; east-west connectivity between Arroyo Trabuco and Caspers Wilderness Park; along the San Juan Creek floodplain; north-south connections through the Trampas sub-basin and southern portion of Chiquita sub-basins, leading to the Donna O'Neill Land Conservancy and Cristianitos Canyon; and throughout the remainder of the San Mateo Creek Watershed.
Cooper's Hawk	36 historic nest locations (82%) and 5,826 acres (83%) of suitable habitat (riparian, woodlands and forest) would be conserved. No <i>major/important populations</i> were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, Verdugo, and Arroyo Trabuco.	18 historic nest locations (78%) and 1,835 acres (73%) of suitable habitat (riparian, woodlands and forest) would be conserved on RMV. No <i>major/important populations</i> were identified, but breeding and foraging habitat within the major drainages would be conserved, including Talega, Cristianitos, Gabino, La Paz, San Juan, Chiquita, Gobernadora, and Verdugo.
Golden Eagle	Approximately 11,803 acres (63%) of grassland and agricultural foraging habitat would be conserved. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.	Approximately 4,130 acres (54%) of grassland and agricultural foraging habitat would be conserved on RMV. Golden eagles, which nest in the CNF, would be expected to continue to occasionally forage, as they do currently, in Upper Chiquita Canyon, Upper Gabino Canyon and Cristianitos Canyon.
Grasshopper Sparrow	441 locations (60%) and 9,796 acres (65%) of grassland would be conserved. Approximately 51% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 84% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 62% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.	346 locations (59%) and 3,021 acres (60%) of grassland would be conserved on RMV. Approximately 51% of the <i>major population/key location</i> in the Chiquita sub-basin/Chiquadora Ridge area, 96% of the <i>important population/key location</i> on the Radio Tower Road mesa, and 60% of the <i>important population/key location</i> in Cristianitos and Lower Gabino would be conserved.

**TABLE M-41 (Continued)**  
**ALTERNATIVE B-11 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Merlin	Approximately 11,803 acres (63%) of grassland and agricultural foraging habitat would be conserved. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.	Approximately 4,130 acres (54%) of grassland and agricultural foraging habitat would be conserved on RMV. Key foraging habitat in Upper Chiquita Canyon would be conserved. Potential foraging habitat in Upper Gabino Canyon and in the Radio Tower Road mesa area also would be conserved. Key foraging habitat in Lower and Middle Chiquita and Cristianitos canyons would be developed.
Tricolored Blackbird	Approximately 50% of the historic nesting colony areas would be conserved. In particular, grassland habitat in the valley bottom of Lower Gobernadora on RMV property would be conserved to support a breeding population. In combination with the existing breeding ponds in south Coto de Caza, this area supports an <i>important population/key location</i> . Potential breeding/foraging areas also would be conserved south of a ranch residence south of Ortega Highway. Potential breeding/foraging areas that would be affected by development include the Narrows area of Chiquita Canyon, the "Riverside Cement" colony in Lower Cristianitos and Lower Gabino canyons, and at the mouth of Verdugo Canyon.	Same as Planning Area.
White-tailed Kite	30 historic nest locations (83%) and 5,826 acres (83%) of riparian and woodland habitats would be conserved. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.	12 historic nest locations (86%) and 1,835 acres (73%) of riparian and woodland habitats would be conserved on RMV. In particular, nesting and foraging habitat would be conserved in GERA, Middle Chiquita Canyon, Central San Juan Creek, Lower Cristianitos Creek, Middle and Lower Gabino Canyon, La Paz Canyon, and Talega Canyon.
Yellow Warbler	27 locations (82%) and 4,314 acres (83%) of riparian habitat would be conserved. All four of the <i>important populations</i> would be conserved. Scattered locations in Bell, Lucas and Lower Gobernadora canyons also would be conserved.	17 locations (100%) and 1,510 acres (79%) of riparian habitat would be conserved on RMV. All three of the <i>important populations</i> on RMV would be conserved. Scattered locations in Lower Gobernadora and Chiquita canyons also would be conserved.
Yellow-breasted Chat	110 locations (85%) and 4,314 acres (83%) of riparian habitat would be conserved. All five of the <i>important populations</i> would be conserved. Scattered locations in upper San Juan Creek, Middle Chiquita, Bell, Verdugo, Lower Gabino and La Paz canyons also would be conserved.	67 locations (89%) and 1,510 acres (79%) of riparian habitat would be conserved. All four of the <i>important populations</i> on RMV would be conserved. Scattered locations in San Juan Creek, Middle Chiquita, Verdugo, Lower Gabino and La Paz canyons also would be conserved.
Western Spadefoot Toad	17 locations (77%) and all of three <i>important populations</i> (Chiquita Ridge, Upper Cristianitos, Lower Gabino Creek). Portions of <i>important populations</i> in Trampas Canyon and along San Juan Creek would be conserved. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.	11 locations (73%) and all of two <i>important populations</i> (Upper Cristianitos, Lower Gabino Creek). Portions of <i>important populations</i> in Trampas Canyon and along San Juan Creek would be conserved on RMV. All conserved breeding locations would have at least a 650-ft upland buffer zone from proposed development to support all life stages.
Orange-throated Whiptail	129 locations (75%) and 23,724 acres (82%) of coastal sage scrub, chaparral and woodland would be conserved. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and 55 of 59 (91%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 12 of 47 locations (25%) would be conserved.	104 locations (71%) and 8,108 acres (67%) of coastal sage scrub, chaparral and woodland would be conserved on RMV. All 18 locations in the <i>important population/key location</i> on Chiquadora Ridge and 50 of 53 locations (94%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. In the Gobernadora/San Juan Creek <i>important population/key location</i> 12 of 47 locations (25%) would be conserved.

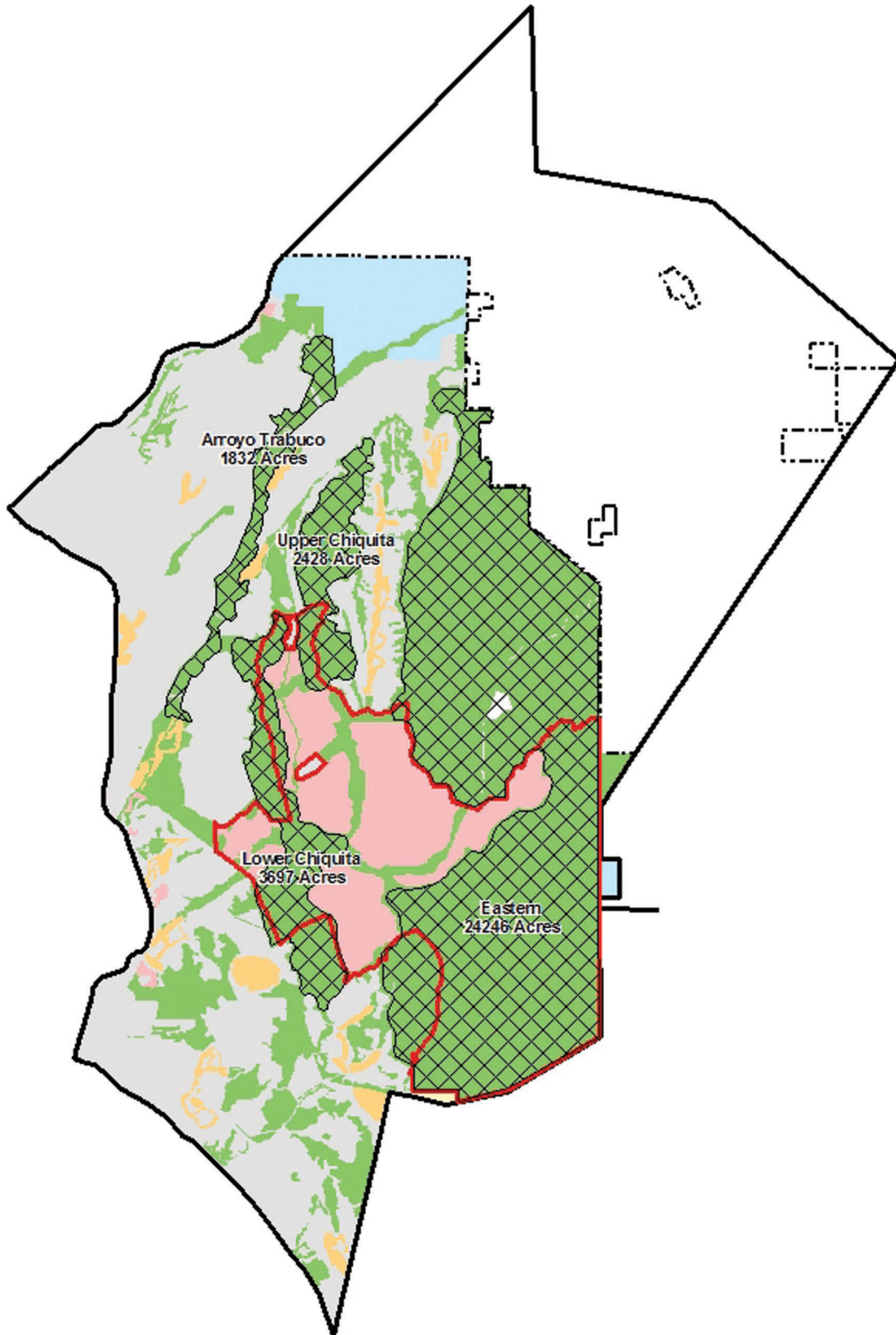
**TABLE M-41 (Continued)**  
**ALTERNATIVE B-11 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
San Diego Horned Lizard	44 locations (86%) and 22,212 acres (82%) of coastal sage scrub and chaparral would be conserved. The large majority (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. The <i>important population/key location</i> in Upper Cristianitos would be 100% conserved.	36 locations (83%) and 7,783 acres (68%) of coastal sage scrub and chaparral would be conserved on RMV. The large majority (93%) of the <i>important population/key location</i> on the Chiquita Canyon/Wagon Wheel Canyon ridgeline would be conserved. The <i>important population/key location</i> in Upper Cristianitos would be 100% conserved.
Southwestern Pond Turtle	6 of 8 locations would be conserved, including <i>important population/ key locations</i> in riparian and aquatic habitats along San Juan Creek, the stockpond and other wetlands in Upper Cristianitos, and Jerome's Lake in Upper Gabino. Locations in San Juan Creek and the adjacent floodplain providing nesting/estivation habitat would also be conserved. Habitat connectivity between the San Juan Creek and San Mateo Creek watersheds would be maintained to allow dispersal, although the habitat linkage would narrow to approximately 1,000 ft in width at the gap between the Trampas Canyon and East Ortega development areas.	Same as Planning Area.
Mountain Lion	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of B-11 providing for mountain lion movement would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, and San Juan Creek.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of RMV under the B-11 providing for mountain lion movement would be Chiquita Ridge, Sulphur Canyon, and San Juan Creek.
Mule Deer	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of B-11 providing for mule deer "live-in" and/or movement habitat would be Arroyo Trabuco, the Foothill-Trabuco Specific Plan area, Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.	No development is proposed in the Gabino, La Paz, and eastern portion of the Talega sub-basins resulting in protection of a large "live-in" habitat block in the San Mateo Creek Watershed. The upper portion of the Verdugo sub-basin within the planning area would be undeveloped, providing a link from Camp Pendleton through to Caspers Wilderness Park and the CNF. Other areas of RMV under B-11 providing mule deer "live-in" and/or movement habitat would be Chiquita Ridge, Sulphur Canyon, San Juan Creek, and Trampas Canyon.
Chaparral Beargrass	The Talega sub-basin <i>important population/key location</i> would be conserved.	Same as Planning Area.
Coulter's Saltbush	3080 individuals (99%) and 34 locations (97%) would be conserved. Only 6 individuals in the non-key location would be impacted.	Same as Planning Area.
Intermediate Mariposa Lily	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.	Although this species was listed as an NCCP/HCP Planning Species, it is not treated as a Planning Species within the study area due to the hybridization of this species within the study area.

**TABLE M-41 (Continued)**  
**ALTERNATIVE B-11 PROTECTION OF PLANNING SPECIES WITHIN**  
**PLANNING AREA AND RANCHO MISSION VIEJO**

Planning Species	Planning Area	RMV
Many-stemmed Dudleya	38,968 individuals (68%) and 225 locations (66%) would be conserved. Of the <i>major populations/key locations</i> , 99% of individuals and 92% of locations of the Chiquadora Ridge population, 77% of individuals and 83% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 4% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 22% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.	28,863 individuals (61%) and 172 locations (58%) would be conserved on RMV. Of the <i>major populations/key locations</i> , 99% of individuals and 92% of locations of the Chiquadora Ridge population, 63% of individuals and 70% of locations of the Cristianitos population, 100% of individuals and locations of the Upper Gabino/La Paz Canyon population, and 4% of individuals and 5% of locations of the Gobernadora population would be conserved. Of the <i>important populations/key locations</i> , 100% of the Chiquita Ridge population/locations, 89% of the individuals and 87% of the locations in the Upper Gobernadora population, and 10% of the individuals and 22% of the locations of the Lower Chiquita Canyon population would be conserved. In the East Talega <i>important population</i> , 100% of individuals and locations would be conserved.
Mud Nama	2 of 4 populations totaling 850 individuals (8%) on Chiquita Ridge and along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.	1 of 3 populations totaling 350 individuals (3%) on RMV along Radio Tower Road would be conserved. The two largest populations of 7,500 and 2,000 individuals each are located in the eastern portion of the Trampas Canyon development area.
Salt Spring Checkerbloom	The two <i>important populations</i> in the slope wetlands in Lower Chiquita Canyon would be conserved. The small population in the slope wetland in Gobernadora would be impacted.	Same as Planning Area.
Southern Tarplant	144,900+ individuals (99%) and 41 locations (98%) would be conserved. 100% of individuals and locations of the <i>major populations/key location</i> in Middle Chiquita, Lower Chiquita Canyon (the Tesoro mitigation site) and Gobernadora (GERA) would be conserved, as would the <i>important population/key location</i> north of the treatment plant.	Same as Planning Area.
Source: Dudek 2004		





**B-5 Alternative Habitat Blocks**

**Exhibit M-1**

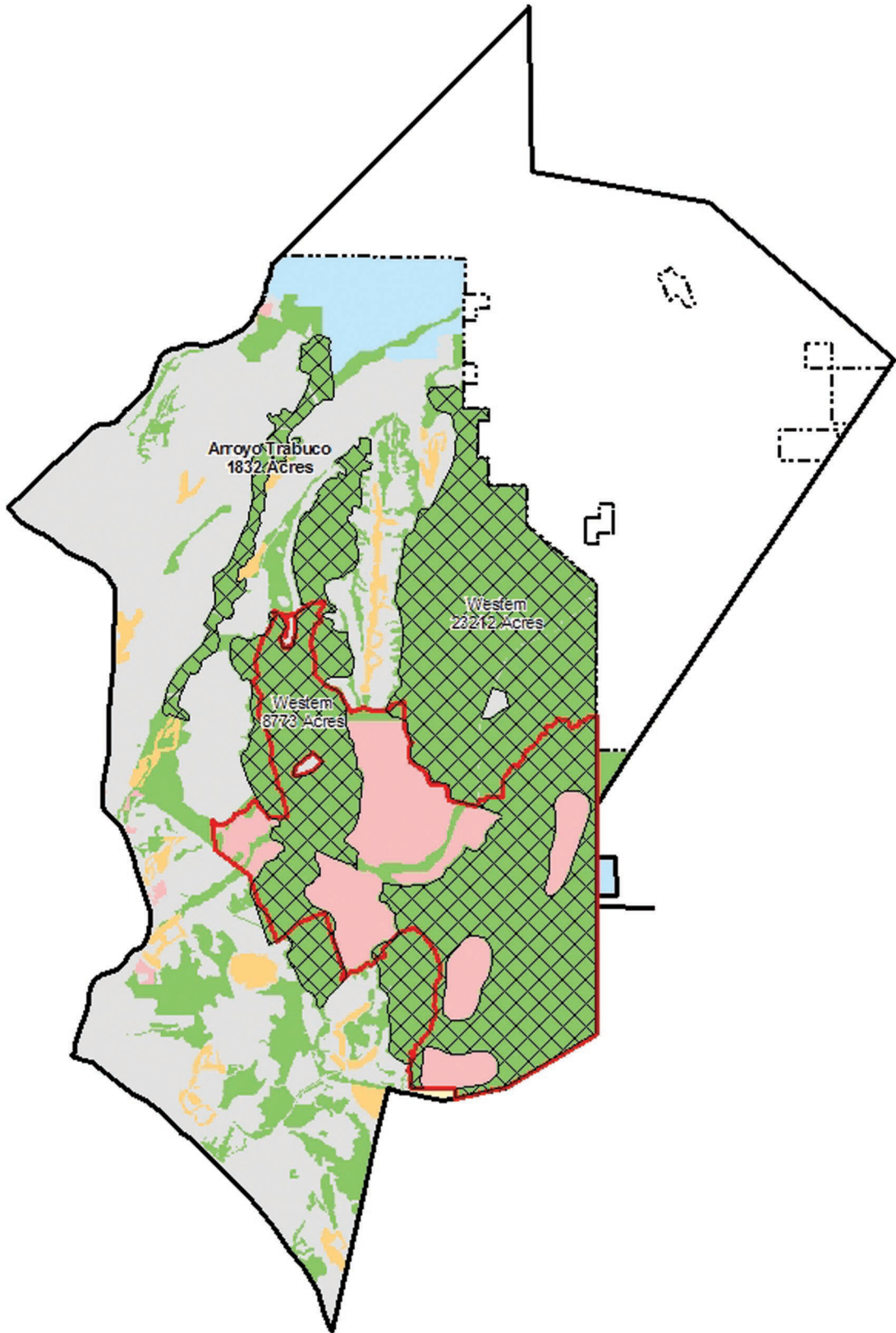
*The Ranch Plan*



Source: Dudek 2004



R:/Projects/RMV/J008/ExM-1\_B5blocks\_060904.pdf



**B-6 Alternative Habitat Blocks**

**Exhibit M-2**

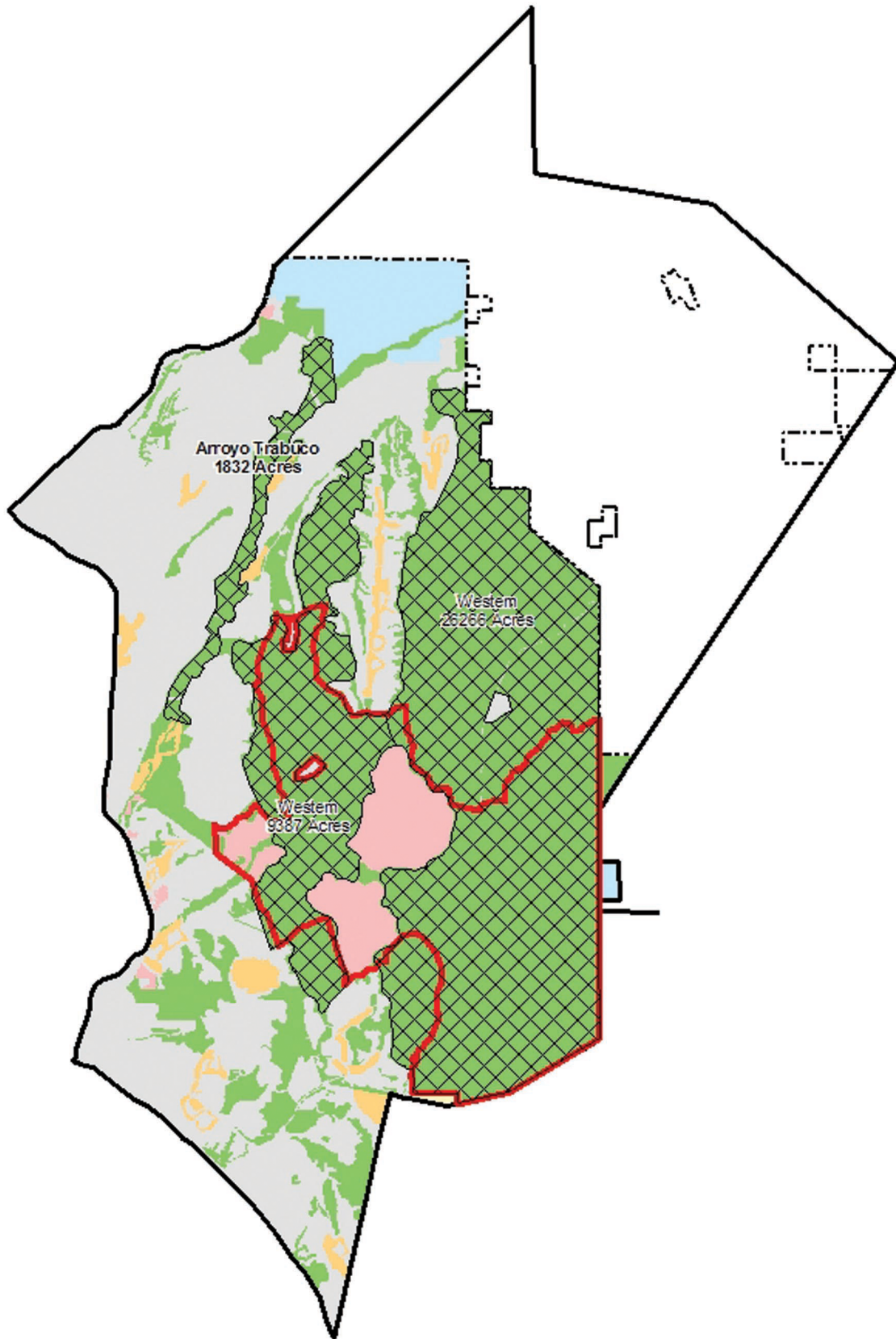
*The Ranch Plan*



Source: Dudek 2004



R:/Projects/RMV/J008/ExM-2\_B6blocks\_060904.pdf



**B-8 Alternative Habitat Blocks**

**Exhibit M-3**

*The Ranch Plan*

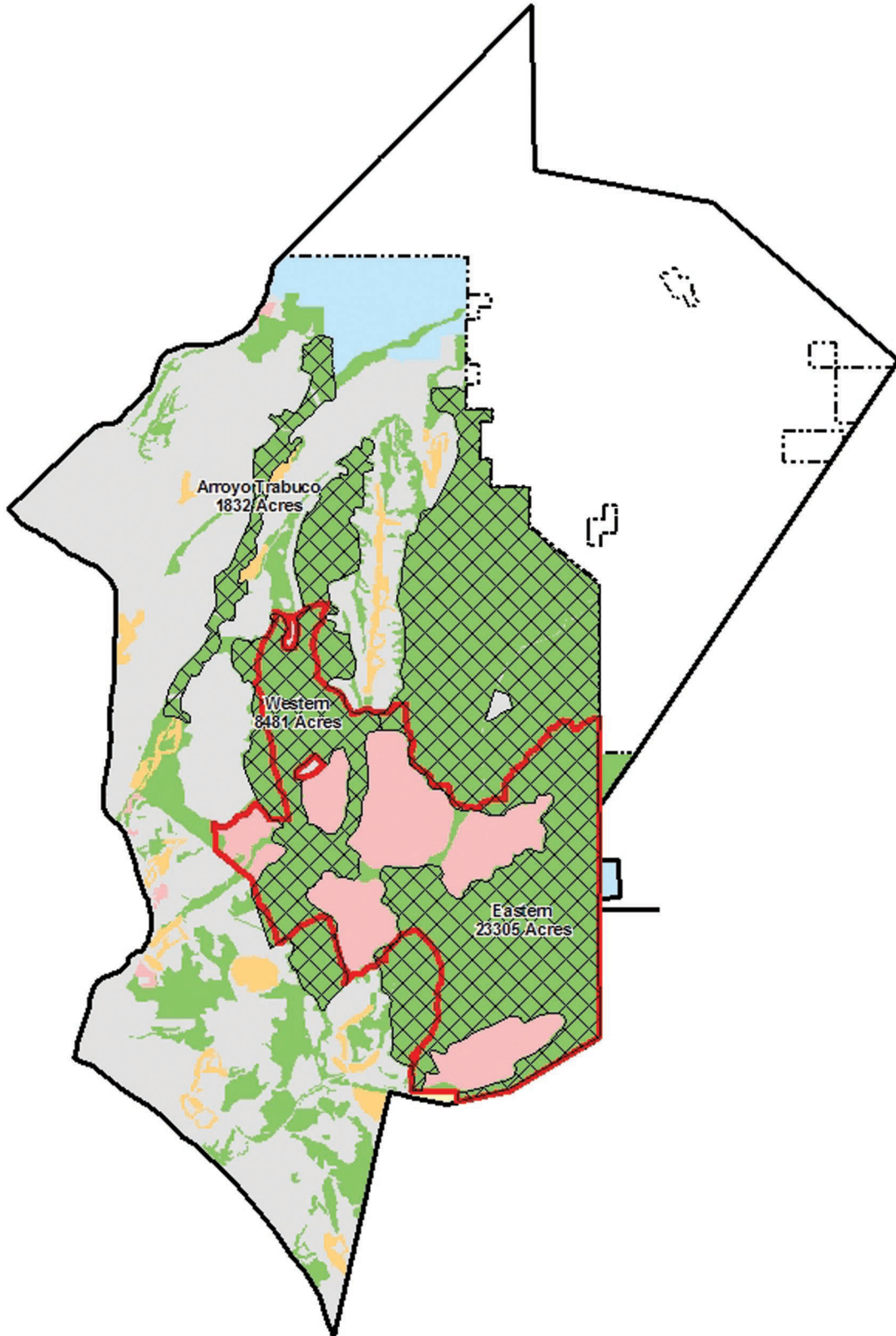


Source: Dudek 2004



R:/Projects/RMV/J008/ExM-3\_B8blocks\_060904.pdf





**B-9 Alternative Habitat Blocks**

**Exhibit M-4**

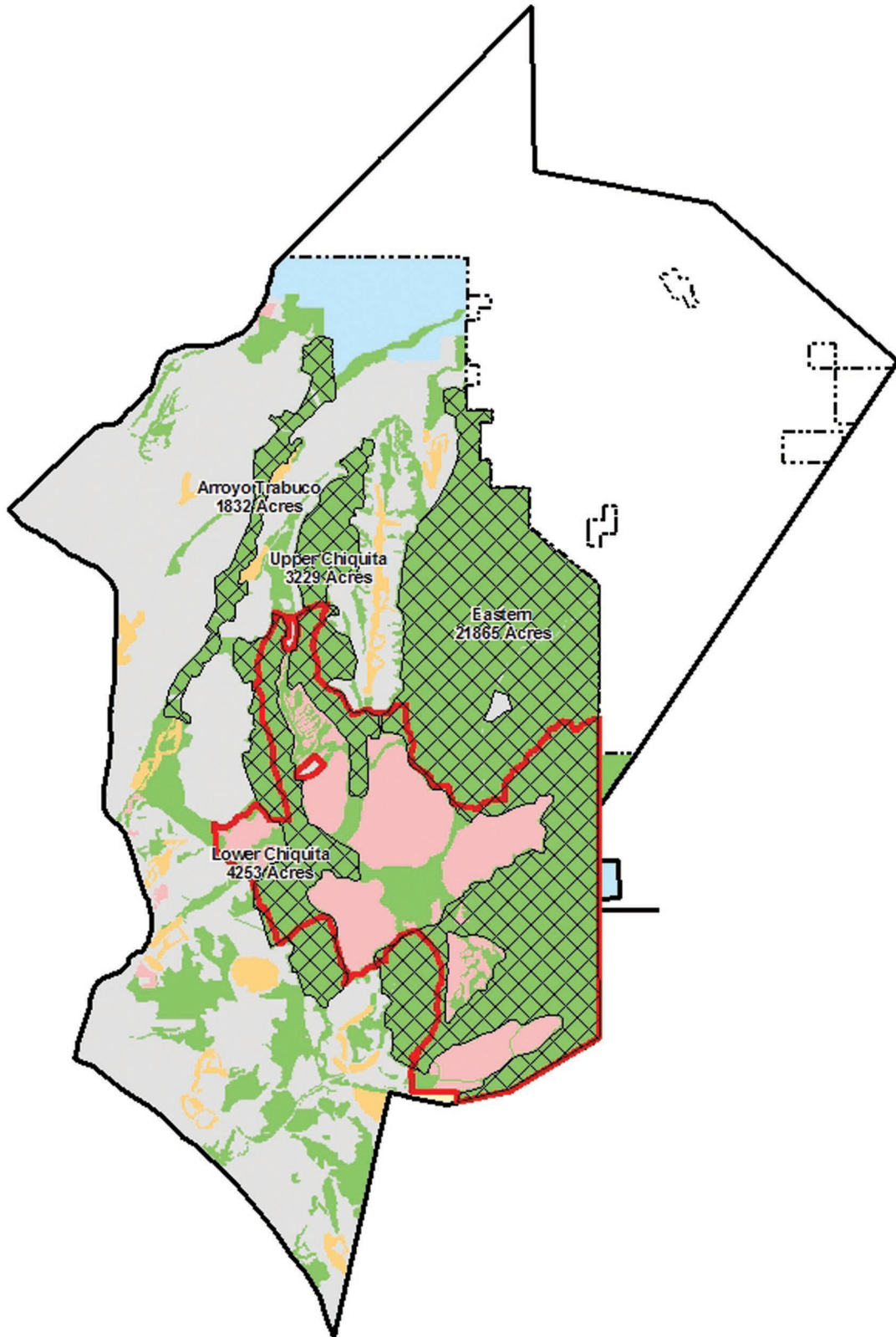
*The Ranch Plan*



Source: Dudek 2004



R:/Projects/RMV/J008/ExM-4\_B9blocks\_060904.pdf



**B-10 Alternative Habitat Blocks**

**Exhibit M-5**

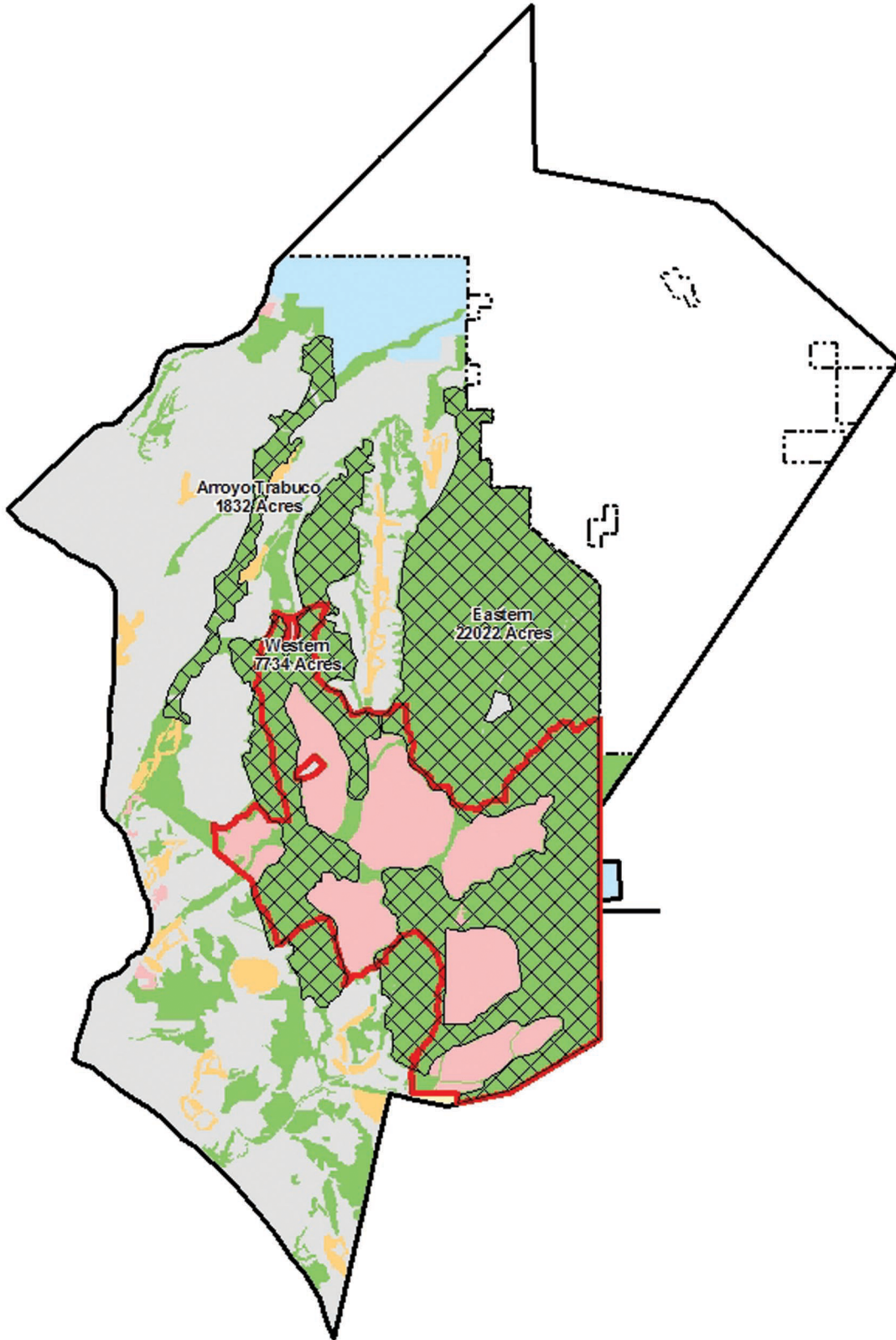
*The Ranch Plan*



Source: Dudek 2004



R:/Projects/RMV/J008/ExM-5\_B10blocks\_060904.pdf



## B-11 Alternative Habitat Blocks

Exhibit M-6

*The Ranch Plan*



Source: Dudek 2004

**Bonterra**  
CONSULTING

R:/Projects/RMV/J008/ExM-6\_B11blocks\_060904.pdf