chaparral, and lower montane coniferous forest between approximately 3,900 and 8,100 feet above msl. This species is found in the Transverse and Peninsular ranges and Baja California. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Southern Jewelflower *(Streptanthus campestris*). The southern jewelflower is CNPS List 1B species that typically blooms from May to July. It is a perennial herb that occurs in rocky soils of chaparral, lower montane coniferous forest, and pinyon-juniper woodland from approximately 2,900 to 7,500 feet above msl. This species is known from fewer than twenty occurrences in Riverside, San Bernardino, and San Diego counties, and Baja California. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Pine Green-Gentian (*Swertia neglecta)*. Pine green-gentian is a CNPS List 4 species that typically blooms from May to July. It is a perennial herb that occurs in lower and upper montane coniferous forests, and pinyon-juniper woodlands from approximately 4,500 to 8,100 feet above msl. This species is found in the South Coastal and Transverse ranges within Los Angeles, San Bernardino, and Ventura counties. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Small-Flowered Bluecurls (*Trichostema micranthum*). Small-flowered bluecurls is a CNPS List 4 species that typically blooms from July to September. It is an annual herb that occurs in mesic soils in lower montane coniferous forest and meadows and seeps from 6,500 to 7,500 feet above msl. This species is found in the San Bernardino Mountains and Baja California. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Table 4.3-3: Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status1		Likelihood for Occurrence
	USFWS	CDFG	
Invertebrates			
Euchloe hyantis ssp. *andrewsi* Andrews' marble butterfly	SOC	C	Low; above known elevation range, limited suitable habitat
Amphibians			
Ensatina escholtzii croceater Yellow-blotched salamander	SOC	SSC	Low; limited marginally suitable habitat
Ensatina escholtzii klauberi Large-blotched salamander	SOC	SSC	None; above known elevation range, outside known geographic range
Rana muscosa Mountain yellow-legged frog	FPE	SSC	None; no suitable habitat
Scaphiopus hamondii Western spadefoot toad	SOC	SSC	None; above known elevation range
Taricha torosa torosa Coast range newt	SOC	SSC	None; no suitable habitat, above known elevation range
Reptiles			
Anniella pulchra pulchra Silvery legless lizard	SOC	SSC	Low; above known elevation range

Table 4.3-3 (cont.): Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status1		Likelihood for Occurrence
	USFWS	CDFG	
Charina bottae umbricata Southern rubber boa	SOC	ST	Low; limited suitable habitat
Cnemidophorus tigris multiscutatus Coastal western whiptail	SOC	C	Moderate; suitable habitat
Coleonyx variegatus abbotti San Diego banded gecko	SOC	C	None; above known elevation range, no suitable habitat
Diadophis punctatus modestus San Bernardino ringneck snake	SOC	C	Low; limited suitable habitat
Lampropeltis zonata parvirubra San Bernardino Mountain kingsnake	SOC	C	Moderate; marginally suitable habitat
Lichanura trivirgata roseofusca Coastal rosy boa	SOC	C	None; above known elevation range
Phrynosoma coronatum ssp. *blainvillei* San Diego coast horned lizard	SOC	SSC/P	None; above known elevation, lack of suitable habitat
Sceloporus graciosus vendenbergianus Southern sagebrush lizard	SOC	C	Observed
Salvadora hexalepis virgultea Coast patch-nosed snake	SOC	SSC	None; lack of suitable habitat, above known elevation
Thamnophis hammondii hammondii Two-striped garter snake	C	SSC	None; no suitable habitat
Birds			
Accipiter cooperii Cooper's hawk	C	SSC	Nesting: Moderate Foraging: High
Accipiter gentilis Northern goshawk	SOC	SSC	Nesting: None Foraging: Moderate
Accipiter striatus Sharp-shinned hawk	C	SSC	Nesting: None Foraging: High in winter
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	SOC	SSC	Nesting: None Foraging: None; above known elevation range
Amphispiza belli belli Bell's sage sparrow	SOC	SSC	Nesting: None Foraging: None; above known elevation range
Aquila chrysaetos Golden eagle	C	SSC	Nesting: None Foraging: High
Asio otus Long-eared owl	C	SSC	Nesting: Low Foraging: Moderate
Buteo regalis Ferruginous hawk	SOC	SSC	Nesting: None Foraging: Low in winter
Circus cyaneus Northern harrier	C	SSC	Nesting: None Foraging: Low
Cypseloides niger Black swift	C	SSC	Nesting: None Foraging: Moderate
Dendroica petechia Yellow warbler	C	SSC	Nesting: None Foraging: Moderate
Elanus leucereus White-tailed kite	C	FP	Nesting: Low Foraging: Low

Table 4.3-3 (cont.): Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status1		Likelihood for Occurrence
	USFWS	CDFG	
Empidonax traillii extimus Southwestern willow flycatcher	FE	SE	Nesting: Low Foraging: Moderate; rare migrant
Eremophila alpestris actia California horned lark	C	SSC	Nesting: None Foraging: None; above known elevation range
Falco columbaris Merlin	C	SSC	Nesting: None Foraging: Low
Falco mexicanus Prairie falcon	C	SSC	Nesting: None Foraging: Low
Falco peregrinus anatum American Peregrine falcon	C	FE	Nesting: None Foraging : Low
Haliaeetus leucocephalus Bald eagle		SE	Observed Observed
Lanius ludovicianus Loggerhead shrike	SOC	SSC	Nesting: None Foraging: None; above known elevation range
Piranga flava Hepatic tanager	C	SSC	Nesting: Low Foraging: Low
Progne subis Purple martin	C	SSC	Nesting: Low Foraging: Low; local rarity
Strix occidentalis occidentalis California spotted owl	SOC	SSC	Nesting: Low/None observed during focused surveys Foraging: High/Observed in close proximity to project site
Vireo vicinior Gray vireo	C	SSC	Nesting: None Foraging: Low
Mammals			
Antrozus pallidus Pallid bat	C	SSC	Roosting: Low Foraging: Low
Euderma maculatum Spotted bat	SOC	SSC	Roosting: None Foraging: Moderate
Eumops perotis californicus California mastiff bat	SOC	SSC	Roosting: None Foraging: Low
Glaucomys sabrinus californicus San Bernardino Mountain flying squirrel	SOC	SSC	Breeding: Low Foraging: High
Myotis ciliolabrum Small-footed myotis	SOC	C	Roosting: Low Foraging: High
Myotis evotis Long-eared myotis	SOC	C	Roosting: High Foraging: High
Myotis lucifugus Occult little brown bat	SOC	SSC	Roosting: High Foraging: High
Myotis thysanodes Fringed myotis	SOC	C	Roosting: Low Foraging: Moderate
Myotis volans Long-legged myotis	SOC	C	Roosting: Moderate Foraging: Moderate
Myotis yumanensis Yuma myotis	SOC	C	Roosting: Low Foraging: Moderate

Table 4.3-3 (cont.): Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status1		Likelihood for Occurrence
	USFWS	CDFG	
Onychomys torridus ramona Southern grasshopper mouse	SOC	SSC	None; no suitable habitat
Perognathus alticola alticola White-eared pocket mouse	SOC	SSC	None; presumed extinct locally
Plecotus townsendii townsendii Pacific western big-eared bat	SOC	SSC	Roosting: None Foraging: Moderate

Status Definitions:

USFWS

FE: Species designated as Endangered under the Federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."

FT: Species designated as Threatened under the Federal Endangered Species Act. Threatened = "species likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range."

FPE: Proposed for federal listing as Endangered.

FPT: Proposed for federal listing as Threatened.

C: Candidate for federal listing as Threatened or Endangered.

SOC: Species of Concern

CDFG

SR: Rare = "a species is rare when, although not presently Threatened with extinction, it is in such small numbers throughout its range that it may become Endangered if its present environment worsens."

ST: Threatened = "a species that, although not presently Threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this Act (California Endangered Species Act)."

SE: Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."

SSC: Species of Special Concern.

FP: Fully Protected species are protected by special legislation and cannot be taken at any time.

P: Protected species are also protected by special legislation and can only be taken with a permit issued by the CDFG.

C: Candidate for state listing as Threatened or Endangered.

Special Status Wildlife

Fifty-three (53) special status wildlife species are known to occur within the region, 22 of which have a moderate or high potential to occur within the project site. Focused surveys for the bald eagle, California spotted owl, southwestern willow flycatcher, and southern rubber boa were conducted in the winter, spring, summer and fall of 2002. Additional focused surveys were conducted for the southwestern willow flycatcher and San Bernardino Mountains flying squirrel during spring and summer 2007. A brief description of the special status wildlife species that were determined to have a moderate to high potential to occur on the project site, as well as those species for which focused were conducted, is provided below and summarized in Table 4.3-3. As indicated in Table 4.3-3, two special status wildlife species (bald eagle and southern sagebrush lizard) have been observed on the project site.

Reptiles

Southern Rubber Boa (*Charina bottae umbbricata)*. The southern rubber boa is a Federal Species of Concern and State-listed Threatened species found in the San Bernardino and San Jacinto

mountains at elevations between 4,900 and 7,900 feet above msl. The majority of the localities for this species are in a 10-mile long strip of the San Bernardino Mountains between Twin Peaks in the west to Green Valley in the east. Known locations for this species occur on the north-facing slopes immediately south of Big Bear Lake. This species usually occurs in moist woodlands and coniferous forests with deep, well developed soils. It is a burrower and also commonly makes use of rock out crops for hibernation. Large downed logs and a well-developed litter layer are considered important for cover and for maintaining soil moisture. Surveys for this species were conducted in the spring and summer of 2002. An additional assessment of the project site was conducted during February 2007 by Dr. Glenn R. Stewart, PhD, Professor Eneritus of Zoology and Environmental Sciences, Cal Pol Pomona, a noted authority on the SRB (see Appendix B of this Revised and Recirculated Draft EIR). No southern rubber boas were encountered during surveys. Given the lack of historical records in the immediate vicinity of the project site, the negative results of two independent focused survey techniques, and the assessment results of Dr. Stewart, the southern rubber boa has a low potential to occur on the project site.

Coastal Western Whiptail (*Cnemidophorus tigris multiscutatus*). The coastal western whiptail is a Federal Species of Concern. It is a moderately large, slender lizard typically found in open scrub, chaparral, and woodland communities in semi-arid areas or where vegetation is sparse, from below sea level to 7,000 feet above msl. This species is restricted to the western coast of North America from Ventura County south through the northern two-thirds of the Baja California peninsula. The project site provides suitable habitat for this species; however, it is at the maximum elevation for this species and its potential to occur is considered to be moderate.

San Bernardino Mountain Kingsnake (*Lampropeltis zonata parvirubra*). The San Bernardino mountain kingsnake is a Federal Species of Concern that occurs in the San Jacinto, San Bernardino, and San Gabriel mountains. This species typically occurs in open stands of ponderosa pine, Jeffrey pine, Coulter pine, and/or black oak at elevations ranging from 4,500 to 6,500 feet above msl. This species occurs at higher elevations, but is less common. Partially shaded rock outcrops appear to be an important microhabitat element for refugia and basking sites. The project site provides marginally suitable habitat for this species and its potential to occur is considered to be moderate.

Southern Sagebrush Lizard (*Sceloporus graciosus vandenbergianus*). The southern sagebrush lizard is a Federal Species of Concern that occurs in open coniferous forests and shrubland above 3,000 feet above msl. Its known range extends from Mount Pinos south to Baja California. This species inhabits mixed conifer forest, black oak woodlands, montane chaparral, and pinyon-juniper woodlands. This species was observed frequently on the project site.

Birds

Cooper's Hawk (*Accipiter cooperii*). The Cooper's hawk is a State Species of Special Concern. Both resident and migratory populations exist in San Bernardino County. Wintering Cooper's hawks are often seen in wooded urban areas and native woodland communities. Preferred nesting habitats

include riparian forests, mountain canyons, and oak woodlands. Cooper's hawks in the region prey on small birds and rodents that live in woodland and, occasionally, scrub and chaparral communities. Breeding residents have been observed in the vicinity of Big Bear Lake. The project site provides suitable foraging habitat, but a limited amount of nesting habitat for this raptor. Therefore, its overall potential to occur is considered to be high, although the potential for nesting is moderate.

Northern Goshawk (*Accipiter gentilis*). The northern goshawk is a Federal Species of Concern and State Species of Special Concern. Rare in southern California, goshawks have been observed during the breeding season only on Mount Abel, Mount Pinos, and in the San Bernardino and San Jacinto mountains. Breeding has not been documented in the San Bernardino Mountains, although goshawks have been observed near Big Bear Lake. Goshawks occur in a variety of coniferous forest communities, including ponderosa and Jeffrey pine, mixed conifer, white fire and lodgepole pine. Large snags and downed logs are believed to be important habitat elements because they increase the abundance of small- to medium sized birds and mammals composing this species prey base. Limited suitable foraging habitat is present on the project site and the potential for this species is considered moderate for foraging, but no potential for nesting.

Sharp-shinned Hawk (*Accipiter striatus*). The sharp-shinned hawk is a State Species of Special Concern. This raptor is a fairly common winter visitor throughout southern California. It prefers woodland communities, but can also be found in virtually any habitat as it passes through the area during migration. The sharp-shinned hawk is a fairly common winter visitor in the Big Bear Lake vicinity, and its potential to occur for foraging is considered to be high. However, the project site provides no nesting habitat for this raptor.

Golden Eagle (*Aquila chryysaetos*). The golden eagle is a State Species of Special Concern. This raptor is uncommon, but widely distributed throughout foothill, lower montane, and desert montane habitats in southern California. Golden eagles nest primarily on cliffs and hunt for rabbits and other small mammals in open habitats such as grasslands, oak savannas, and open shrublands. No nesting habitat is present on the project site; however, the potential for foraging on the project site is considered high.

Long-eared Owl (*Asio otus*). The long-eared owl is a State Species of Special Concern. It breeds and roosts in riparian forests and woodlands or other dense forest habitats. This owl forages at night in open habitats including marshes, grasslands, and agricultural fields. It occurs throughout North America but is an increasingly rare breeder in southern California. The project site provides moderate suitable foraging habitat and limited nesting habitat, for this species.

Black Swift (*Cypseloides niger).* The black swift is a State Species of Special Concern. It is known to breed in the San Gabriel Mountains, Mill Creek Canyon in the San Bernardino Mountains, and the San Jacinto Mountains. This species occurs in mountain and foothill canyons where it nests in rocky cliffs behind waterfalls. No suitable nesting habitat is present on the project site; however, this

project site could provide suitable foraging habitat and the potential for this species to forage on the project site is considered moderate.

Yellow Warbler (*Dendroica petechia*). The western yellow-warbler is a California Species of Special Concern. This subspecies of yellow warbler that breeds in southern California is the western yellow warbler (*D.p. brewsteri*). This subspecies occurs in coastal areas from northwestern Washington south to western Baja California. In southern California, yellow warblers breed locally in riparian woodlands. The yellow warbler is an abundant migrant and would be expected to occur in spring and fall during migration. No suitable nesting habitat is present on the project site; however, the potential for foraging migrants on the project site is considered moderate.

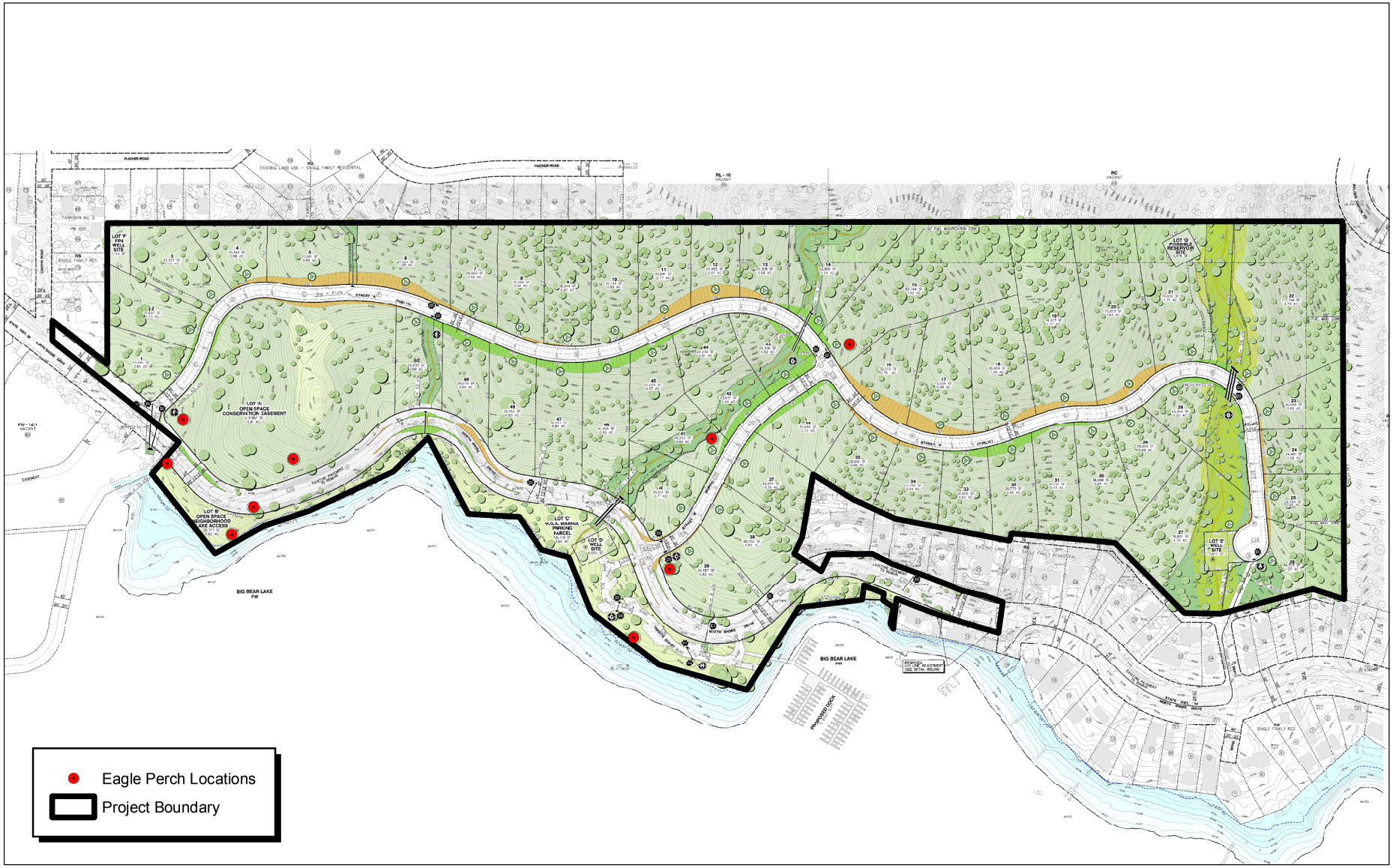
Southwestern Willow Flycatcher (*Empidonax traillii extimus*). The southwestern willow flycatcher is a federally- and State-listed endangered species. This subspecies has declined drastically due to a loss of breeding habitat and nest parasitism by brown-headed cowbirds. This species occurs in riparian habitats along rivers, streams, or other wetlands where dense growths of willows (*Salix* sp.), baccharis (*Baccharis* sp.), arrowweed (*Pluchea* sp.), tamarisk (*Tamarix* sp.), or other plants are present, often with a scattered overstory of cottonwood (*Populus* sp.). The potential for this species to occur on the project site as a foraging migrant is considered to be high, but its potential to nest on the project site is considered low. Surveys for this species were conducted in the spring and summer of 2002 and again in 2007. No breeding or individual southwestern willow flycatchers were detected during the surveys. Willows along the shoreline are patchy and lack the dense growth or willow thicket favored by this species as territorial or breeding habitat. Therefore, breeding southwestern willow flycatchers are not expected to occur on the project site.

Bald Eagle (*Haliaeetus leucocephalus*). The bald eagle is a State-listed endangered species. This raptor typically overwinters in small numbers in southern California near lakes and reservoirs where they feed on fish, coots, and waterfowl. The largest known wintering population in southern California is at Big Bear Lake in the San Bernardino Mountains, where twenty to thirty eagles typically congregate from November to March. This species is known to be present on the project site in winter and could potentially nest on the project site. Surveys and records searches were conducted for the project site in the winter of 2002 and 2007 to determine bald eagle use of perch trees and favored roosting locations (refer to Appendix B of this Revised and Recirculated Draft EIR). The surveys found that the site is used extensively by bald eagles. Bald eagle perch and roost locations were recorded and individual trees were marked with numbered tags. Tree perch locations are shown on Exhibit 4.3-2. The records search confirmed extensive use of the project site by bald eagles and found that the most commonly recorded use of a single tree was also on the project site. In 2007 two bald eagle nests with potentially two pair of bald eagles were located in the Big Bear Lake area (Forest Service, June 25, 2007). One of the nests was located near Grout Bay, which is just west of the project site.

California Spotted Owl (*Strix occidentalis occidentalis*). The California spotted owl is a Federal Species of Concern and State Species of Special Concern. This species occurs in all of the major mountain ranges in southern California, although some ranges support very few pairs. It is found at elevations ranging from below 1,000 feet to 8,500 feet above msl in mature forests typically with a dense, multi-layered canopy. Its prey base consists of woodrats (i.e., *Neotoma* spp.) and other rodents. Surveys were conducted for this species on the project site in the spring and summer of 2002 (refer to Appendix B). Although one male spotted owl was detected approximately one mile to the northwest of the project site, no nesting pairs or individuals were observed on the project site. The San Bernardino National Forest has been conducting focused spotted owl surveys for the past several years and is monitoring the known breeding owls and territories which are located several miles north of the project site in the dense conifer forest. Therefore, no nesting pairs presently occur on the project site; however, individuals have a high potential to forage on the project site

Mammals

Spotted bat (*Euderma maculatum).* The spotted bat is a Federal Species of Concern that occurs throughout much of the western United States, occupying a variety of habitats from arid deserts and grasslands through mixed conifer forests Because of the low frequency of their echolocation calls large open habitat is predicted to be preferred. Spotted bats roost in the small cracks found in cliffs and stony outcrops. They feed almost entirely on moths. The project site does not provide roosting habitat but it does provide potentially suitable foraging habitat for this species.



Source: Hicks & Hartwick, Inc. (July, 2009), Bon Terra Consulting (July, 2003), Tim Krantz (2008), Scott White & MBA.

NORTH

350 175 0 350

Feet

Michael Brandman Associates

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Exhibit 4.3-2
Eagle Perch Locations Map

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San Bernardino Mountain Flying Squirrel (*Glaucomys sabrinus californicus*). The San Bernardino Mountain flying squirrel is a Federal Species of Concern and State Species of Special Concern. It occurs in the San Bernardino Mountains between 5,200 and 8,500 feet above msl. This species prefers mid- to upper-elevation, dense, mature coniferous forest habitats, particularly those containing white fir. They use cavities in large trees, snags, and logs for cover. The project site provides suitable foraging habitat for this species and the potential for occurrence is considered high. The northeastern portion of the project site provides potential nesting habitat as the forest in this area more dense with some portions having a closed canopy. This species was trapped in 1998 by the Forest Service approximately 0.5 mile north of the northern boundary of the project site. A focused survey was conducted on the project site in 2007 and resulted in negative findings.

Small-footed Myotis (*Myotis ciliolabrum*). The small-footed myotis is a Federal Species of Concern that occurs throughout much of the western United States, occupying a variety of habitats. This species feeds among trees or over brush, and roosts in cavities of cliffs, trees, or rocks and within caves or mine shafts. The project site provide potentially suitable roosting and foraging habitat for this species and the potential for occurrence is considered to be low for roosting and high for foraging.

Long-eared Myotis (*Myotis evotis*). The long-eared myotis is a Federal Species of Concern that is restricted to high-elevation habitats. It is known to occur in Coon Creek in the San Bernardino National Forest. This species can occur in a variety of habitats, but are usually associated with coniferous forests where they roost under exfoliating tree bark. The project site provides potentially suitable roosting and foraging habitat for this species and the potential for occurrence is considered to be high for foraging and roosting.

Occult Little Brown Bat (*Myotis lucifugus*). The occult little brown bat is a Federal Species of Concern and State Species of Special Concern that is restricted to high-elevation habitats. This species occurs in pine forests at elevations ranging from 6,000 to 9,000 feet above msl. It roosts in buildings, trees, and cliffs and feeds over water or open sites. The project site provides suitable roosting and foraging habitat and the potential for this species to occur is considered to be high for foraging and roosting.

Fringed Myotis (*Myotis thysanodes*). The fringed myotis is a Federal Species of Concern that is restricted to high-elevation habitats. This species has been observed on Arrastre Creek on the San Bernardino National Forest. It occurs in a wide variety of habitats but is most commonly found in dry pine or mixed conifer forests and pinyon-juniper woodlands where it will roost in caves, buildings, mine shafts, rock crevices in cliff faces, trees, and bridges. Hibernation has only been documented in buildings and mines. The project site provides marginally suitable roosting and foraging habitat for this species and potential for occurrence is considered to be moderate for foraging and low for roosting.

Long-legged Myotis (*Myotis volans*). The long-legged myotis is a Federal Species of Concern that is restricted to high-elevation habitats. This species has been observed on Arrastre Creek on the San Bernardino National Forest. It is primarily a bat of coniferous forests but also occurs seasonally in riparian and desert habitats. It uses abandoned buildings, cliff crevices, exfoliating tree bark, and hollows within snags as summer day roosts; caves and mine tunnels for hibernation. The project site provides marginally suitable foraging and roosting habitat for this species and its potential to occur on the project site is considered to be moderate for foraging and roosting.

Yuma Myotis (*Myotis yumanensis*). The Yuma myotis is a Federal Species of Concern and a relatively small bat that occurs statewide. This species is closely associated with water and wooded canyon bottoms throughout its range. Caves and old buildings are preferred roosting habitats, with roosts numbering up to 2,000 individuals. The project site provides potentially suitable foraging habitat for this species and the potential for this species to forage on the project site is considered to be moderate; however, this species is not expected to roost on the project site.

Pacific Western Big-eared Bat (*Plecotus townsendii pallescens*). The Pacific western big-eared bat occurs throughout California and is a Federal Species of Concern and State Species of Special Concern. In the southern portion of the state, the subspecies, *P.t. pallescens*, occupies a variety of communities, including oak woodlands, arid deserts, grasslands, and high-elevation forests and meadows. Known roosting sites in California include mines, caves, and buildings. The project site would provide foraging habitat for this species and it has a moderate potential to forage on the project site; however, no suitable roosting habitat is present.

Critical Habitat

The site is not located within any critical habitat designated areas for federally listed species.

Wildlife Movement

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (e.g., foraging for food or water, defending territories, searching for mates, accessing breeding areas, or securing cover). A number of terms have been used in various wildlife movement studies, such as "travel route," "wildlife corridor," and "wildlife crossing" to refer to areas in which wildlife move from one area to another.

To clarify the meaning of these terms and to facilitate the discussion on wildlife movement in this analysis, these terms are briefly defined as follows:

- *Travel Route*: a landscape feature such as a ridgeline, drainage, canyon, or riparian strip within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites).

- *Wildlife Corridor*: a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another.
- *Wildlife Crossing:* a small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement.

As defined above, the project site does not contain wildlife crossings or corridors. Nonetheless, the project site could be used as a travel route connecting forest habitat to the north with Big Bear Lake. However, direct connection to open space areas north and east of the project site are obstructed by SR-38. The importance of this travel route may be diminished by the vehicle traffic hazard associated with crossing SR-38 as well as the availability of similar habitat immediately adjacent to the east of the project site.

Migratory Bird Treaty Act

The Migratory Bird Treat Act (MBTA) established in 1918 the federal prohibition, unless permitted by regulations, to pursue, hunt, take, capture, or kill any migratory bird species or any part, nest, or egg of any such migratory bird species covered by the act. Impacts to any bird (or its nest) listed by the MBTA are considered punishable by fines and/or imprisonment. Additionally, impacts to nesting MBTA-listed species are considered a significant impact by California Environmental Quality Act (CEQA) per guideline section.

There are a large number of bird species that were observed to use the project site for nesting. Due to the difficulty locating nests of cavity-nesting and other species of birds, a preconstruction nesting bird survey is not feasible. Therefore, the project should time tree removal to occur outside of the nesting period for birds, generally February through July.

Jurisdictional Waters

A Delineation of Jurisdictional Waters was prepared during the preparation of the 2005 Final EIR in order to delineate U.S. Army Corps of Engineers (USACE) and California Department of Fish and Game (CDFG) jurisdictional authority for unnamed drainages located within the project site.

Prior to visiting the site, RBF conducted a review of U.S. Geological Survey (USGS) topographic maps (Quadrangle *Fawnskin, California*, dated 1996) and aerial photographs to identify areas that *may* fall under an agency's jurisdiction. USACE jurisdictional wetlands are delineated using the methods outlined in the USACE Wetland Delineation Manual (1987) based on hydrologic and edaphic features of the site, and on the vegetation composition of the site. Non-wetland waters of the United States (U.S.) are delineated based on the limits of the ordinary high water mark (OHWM) as determined by erosion, the deposition of vegetation or debris, and changes in the vegetation. Generally, CDFG takes jurisdiction to the bank of the stream/channels or to the limit of the adjacent

riparian vegetation, whichever is greater. Analysis of the project site consists of field surveys and verification of current conditions conducted in March 2002.

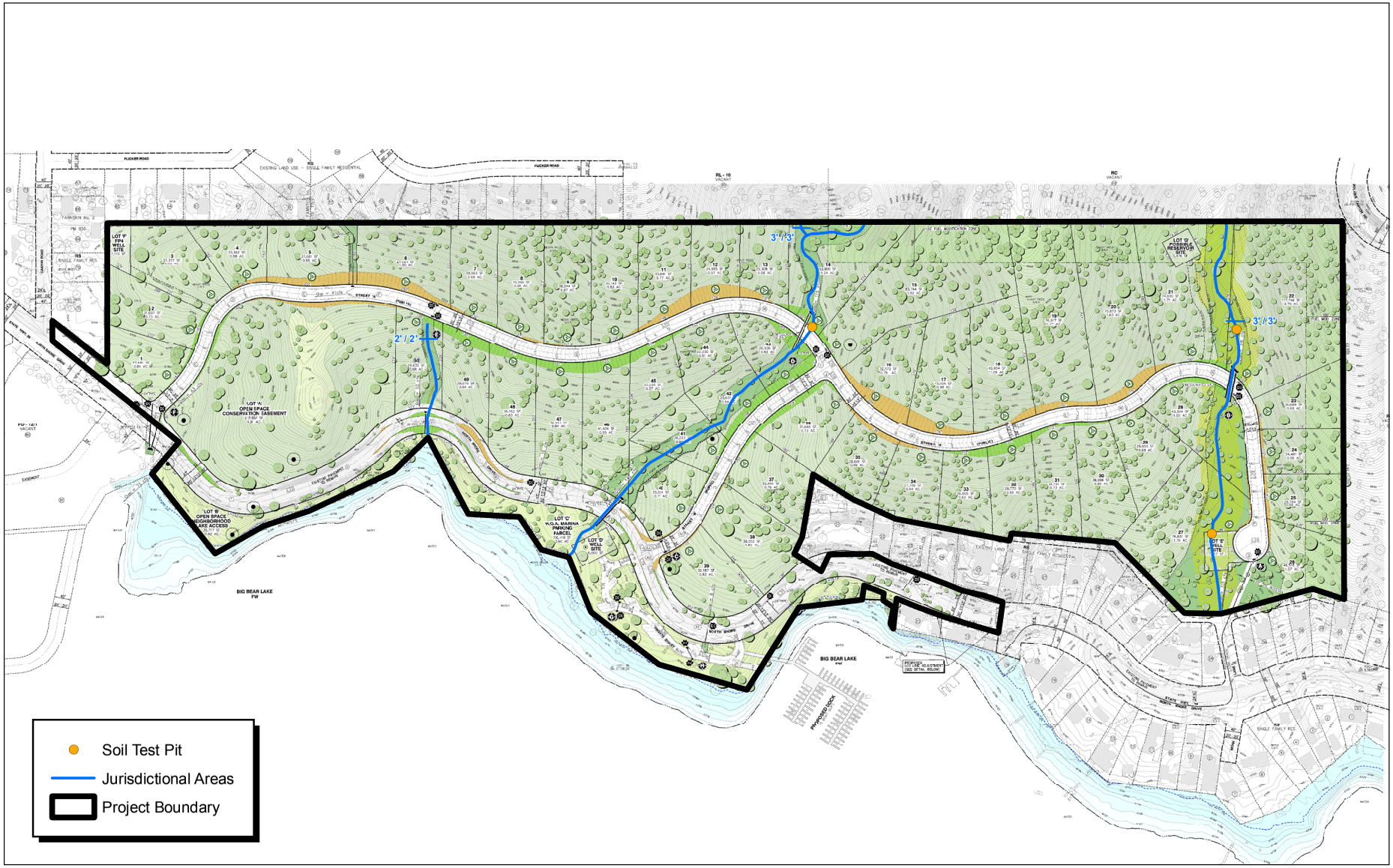
Vegetation within the drainages of the project site consisted of upland habitat, dominated by Jeffrey pines. Soils within the drainage were documented to be silty-sand (large grain). Soil samples taken on-site were generally dry and lacked characteristics of hydric soils (i.e., odor, streaking, mottling). No flow within the on-site drainages was observed during the March 15, 2002, field visit. However, evidence of an OHWM was observed within the drainages, primarily indicated by sediment deposits. It should also be noted that Big Bear Lake adjoins the project site to the south. Based on discussions with the Big Bear Municipal Water District, the current water level of Big Bear Lake (as of May 27, 2009) is 6,738.1-feet above msl. The OHWM is reported to be 6,743.2 feet above msl.

Based on the results of the field observations and data collection, 0.15 acre of USACE jurisdictional waters of the U.S. were identified within the project site. In addition to on-site ephemeral drainages, USACE considers Big Bear Lake jurisdictional. USACE's jurisdictional limits are delineated at the high water line, which is reported to be at 6,743.2-foot elevation (and below).

4.3.2 - Regulatory Setting

This regulatory framework identifies the federal, state, and local statutes, ordinances, or policies that govern the conservation and protection of biological resources and must be considered during the decision-making process for projects that have the potential to affect biological resources. In this context, biological resources are defined to include the following:

- Any species identified as a federal candidate for listing, a sensitive species, or as having special status in local or regional plans, policies or regulations, by the CDFG or USFWS;
- Habitat designated as State Sensitive Habitats by the CDFG Natural Heritage Program;
- Wetlands or other "waters of the U.S." afforded protection pursuant to Section 404 of the Clean Water Act (CWA);
- Riparian or wetland habitats afforded protection pursuant to Section 1600 of the State Fish and Game Code (Code);
- Native resident or migratory wildlife corridors;
- Native wildlife nursery sites;
- Occupied nesting habitat for birds afforded protection pursuant to the MBTA; and
- Plant and wildlife habitats afforded protection pursuant to Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs).



Source: Hicks & Hartwick, Inc. (July, 2009), Bon Terra Consulting (July, 2003), Tim Krantz (2008), Scott White & MBA.

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Michael Brandman Associates

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Exhibit 4.3-3
Jurisdictional Map

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Federal

Federal Endangered Species Act

The purposes of this Act are to provide a means to conserve the ecosystems that endangered and threatened species depend on and to provide a program for conservation and recovery of these species. FESA defines species as "endangered" and "threatened" and provides regulatory protection for any species so designated. Section 9 of the FESA prohibits the take of species listed by the USFWS as threatened or endangered. As defined in the FESA, take means "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." In recognition that take cannot always be avoided, Section 10(a) of the FESA includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Section 10(a)(1)(B) permits (incidental take permits) may be issued if taking is incidental and does not jeopardize the survival and recovery of the species in the wild.

Section 7(a)(2) of the FESA requires all federal agencies, including the USFWS, to evaluate the proposed project with respect to any species proposed for listing or already listed as endangered or threatened and their critical habitat, if any is proposed or designated. Federal agencies must undertake programs for the conservation of endangered and threatened species, and are prohibited from authorizing, funding, or carrying out any action that will jeopardize a listed species or destroy or modify its "critical habitat." As defined in the FESA, "individuals, organizations, states, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a Federal permit, license, or other authorization, or involve federal funding."

Migratory Bird Treaty Act

The MBTA makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union. As with the FESA, the MBTA authorizes the Secretary of the Interior to issue permits for incidental take.

Section 404 of the Federal Clean Water Act

Section 404 of the Federal Clean Water Act (CWA), which is administered by the USACE, regulates the discharge of dredge and fill material into waters of the United States. USACE has established a series of nationwide permits that authorize certain activities in waters of the U.S., provided that a proposed activity can demonstrate compliance with standard conditions. Normally, USACE requires an individual permit for an activity that will affect an area equal to or in excess of 0.5 acre of waters of the U.S. Projects that result in impacts to less than 0.5 acre of waters of the U.S. can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. However, USACE has discretionary authority to require an Environmental Impact Statement (EIS) for projects that result in impacts to an area 0.5 acre and above. Use of any nationwide permit is contingent on the activities having no impacts to endangered species.

State

Section 2080 and 2081 of the State Fish and Game Code

Section 2080 of the Code states that no person shall import into this state (California), export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission (State Fish and Game Commission) determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act, or the California Desert Native Plants Act. Under Section 2081 of the Code, the CDFG may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if: 1) the take is incidental to an otherwise lawful activity; 2) impacts of the authorized take are minimized and fully mitigated; 3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species; and 4) the applicant ensures adequate funding to implement the measures required by CDFG. CDFG shall make this determination based on the best scientific and other information that is reasonably available and shall include consideration of the species' capability to survive and reproduce.

Section 3503 of the State Fish and Game Code

Section 3503 of the Code states, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto."

Section 1600 of the State Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California are subject to the regulatory authority of the CDFG pursuant to Sections 1600 through 1602 of the Code, requiring preparation of a Streambed Alteration Agreement. Under the Code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Included are watercourses with surface or subsurface flows that support or have supported riparian vegetation. CDFG also has jurisdiction within altered or artificial waterways based on the value of those waterways to fish and wildlife, and also has jurisdiction over dry washes that carry water ephemerally during storm events.

Native Plant Protection Act

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The definition of "rare and endangered" differs from those contained in the CESA. However, the list of native plants afforded protection pursuant to this act includes those listed as rare and endangered under the CESA. The Native Plant Protection Act provides limitations on take as follows: "...no person will import into this State, or take, possess, or sell within this State" any rare or endangered native plant, except in compliance with provisions of the act. Individual land owners are required to notify the CDFG at least 10 days in advance of changing land uses to allow the CDFG to salvage any rare or endangered native plant material.

Natural Community Conservation Planning Program

The NCCP Program, initiated by Governor Pete Wilson in 1991 and managed by the CDFG, is designed to conserve multiple species and their habitats, while also providing for the compatible use of private land. Through local planning, the NCCP planning process protects wildlife and habitat before the landscape becomes so fragmented or degraded by development that listings are required under the FESA. Instead of saving small, disconnected units of habitat for just one species at a time, agencies, local jurisdictions, and other interested parties have an opportunity, through the NCCP, to work cooperatively to develop plans that consider broad landscapes, or "ecosystems," and the needs of many species. Partners enroll in the programs and, by mutual consent, habitat areas with high conservation values are set aside and may not be developed. Partners also agree to study, monitor, and develop management plans for these "reserve" areas. The program provides a process for fostering economic growth by allowing approved development in enrolled areas with lower conservation values.

Carbonate Plant Critical Habitat/San Bernardino Mountains Carbonate Habitat Management Strategy

On January 23, 2003, the USFWS designated critical habitat for five federally-listed plants on 13,180 acres of land in the San Bernardino Mountains. The five plants are Cushenbury milk-vetch (*Astragalus albens*), Cushenbury buckwheat (*Eriogonum ovalifolium var. vineum*), San Bernardino Mountains bladderpod (*Lesqueralla kingii ssp. bernardina)*, Cushenbery oxytheca (*Oxytheca parishii var. goodmaniana*), and Parish's daisy (*Erigeron parishii*). Critical habitat for these species covers 11,980 acres between the western edge of White Mountain and the eastern edge of Rattlesnake Canyon, 685 acres northeast of Big Bear Lake, and 515 acres of San Bernardino National Forest lands on Sugarlump Ridge south of Bear Valley. The project site is not located in any areas designated as critical habitat for these five carbonate plants. In addition, a Carbonate Habitat Management Strategy is currently being developed to address the long-term conservation of carbonate habitat in the San Bernardino Mountains. The strategy identifies potential and occupied carbonate habitat and actions to conserve carbonate plants. Plant surveys on the project site have not identified any carbonate habitat on the project site that may be subject to conservation measures outlined in the Carbonate Habitat Management Strategy.

County

County of San Bernardino General Plan

The County of San Bernardino General Plan contains goals and policies/actions designed to preserve biological resources that apply to development within the County's jurisdiction. The general plan contains a list of Rare, Endangered and Threatened species that occur in San Bernardino County, adverse effects on which result in a mandatory finding of significant effect pursuant to State CEQA Guidelines, Section 15065 if individuals are adversely affected by County land use map changes and discretionary land use approvals, thereby requiring the preparation of an EIR. Listed plant species identified within the General Plan with potential to occur on the Project site include Parish's

checkerbloom and bird's foot checkerbloom. Listed wildlife species identified within the General Plan with potential to occur on the Project site include the southern rubber boa and bald eagle. The survey results and documentation contained in Appendix B have been prepared as supporting documentation for this Revised and Recirculated Draft EIR, which satisfies the requirements of the County of San Bernardino General Plan.

County of San Bernardino Biotic Resources Overlay District

The project site lies within a County of San Bernardino Biotic Resources (BR) Overlay District. The purpose of the BR Overlay District is to "implement General Plan policies regarding the protection and conservation of beneficial rare and endangered plants and animal resources and their habitats which have been identified within unincorporated areas of the county" (Article 2, 85.030201). The County General Plan implements the intent of the BR Overlay District by requiring all proposed land uses with a minimum of 25 percent of the total proposed development area within the BR Overlay District to prepare a biological technical report identifying impacts to biological resources and mitigation measures designed to reduce or eliminate Project related impacts. The documentation included in Appendix B is intended to satisfy the requirements of the BR Overlay District.

Plant Protection and Management Ordinance – County of San Bernardino Development Code

The County of San Bernardino requires under Chapter 8, Division 9 of the County Development Code (Plant Protection and Management) that development on all private and public lands within the unincorporated areas of San Bernardino County is subject to specific requirements. Removal of any native plant from unincorporated areas of San Bernardino requires the approval of a removal permit. Additionally, the following sections of the ordinance would apply to native plants on the project site:

89.0110(b) The provisions of this Division shall not authorize the removal of perch trees within identified American bald eagle habitat.

89.0115(c) The reviewing authority may require certification from an appropriate tree expert or native plant expert that such tree removals are appropriate, supportive of a healthy environment and are in compliance with the provisions of this chapter.

89.0205 Any coniferous tree or portion thereof, including stumps, shall be treated in accordance with one of the methods specified in Sections 89.0205 and 89.0210 within fifteen (15) days after such a tree or portion of such a tree has been cut.

4.3.3 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on biological resources were derived from Appendix G of the CEQA Guidelines. A significant impact would occur if a proposed project:

a) Has a substantial adverse effect, through either direct or indirect modification of potentially suitable or occupied habitat, or direct take, to any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;

b) Has an adverse effect on existing riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS;

c) Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d) Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native, resident, or migratory wildlife corridors or impedes the use of native wildlife nursery sites;

e) Conflicts with regional policies or other local policies or ordinances protecting biological resources; and

f) Conflicts with approved local, regional, or state habitat conservation plans.

4.3.4 - Project Impact Analysis

Sensitive Plant Communities and Plants

Pebble Plains. A total of 0.69 acre of pebble plain habitat occurs on-site; however, all of this habitat would be permanently preserved in an Open Space/Conservation easement consisting of a 4.91-acre easement (Lot A) at the westerly end of the project site. The 0.69 acre site is near to the center of the easement area, which would be buffered from future development of adjacent residential lots. Approximately 1,511 acres of pebble plain are known to exist in the San Bernardino Mountains (Krantz, 2008), 60 percent (906 acres) of which occurs on public lands. Development of the Proposed Alternative Project would not result in the removal of any of the pebble plain that occurs on the project site.

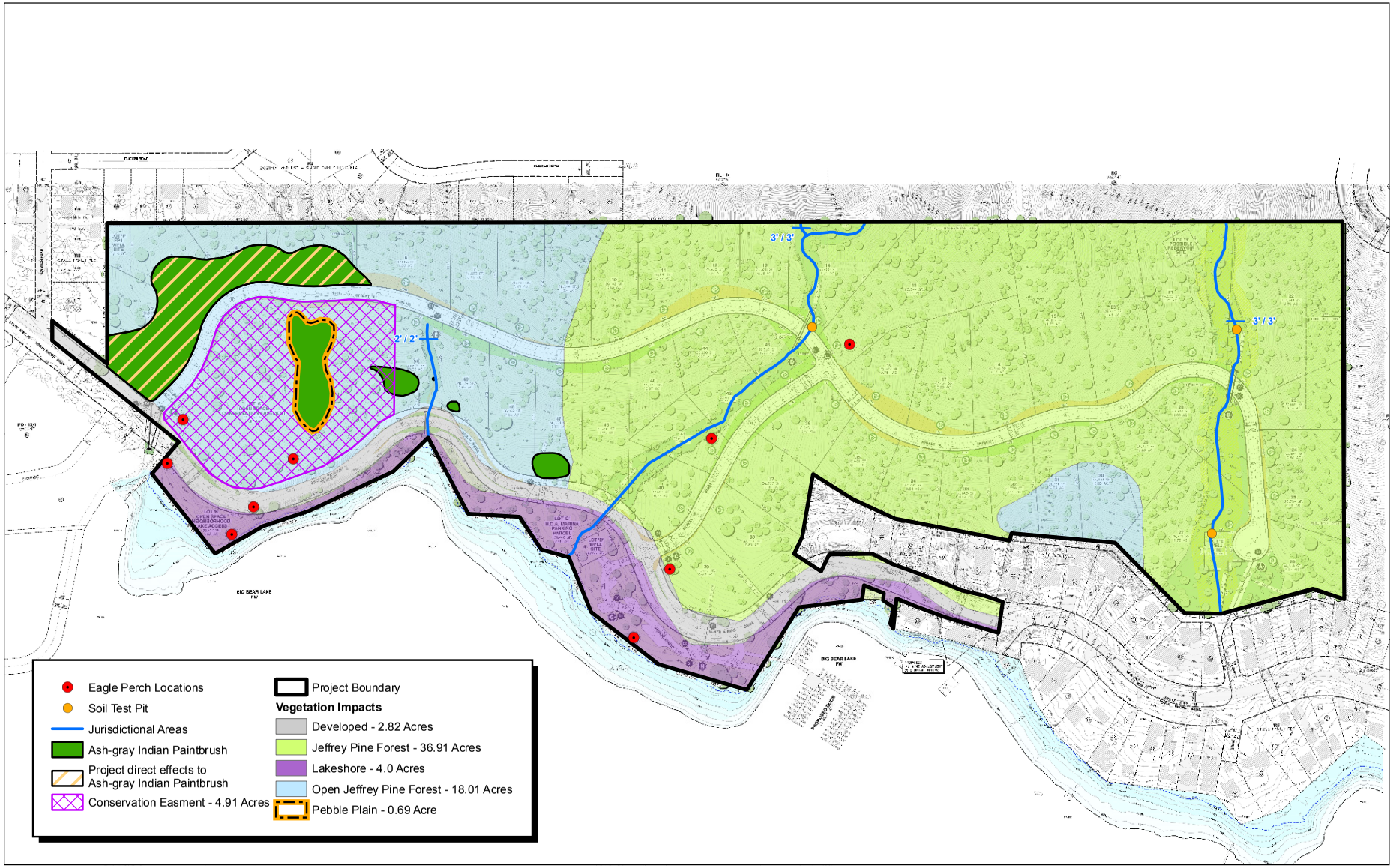
Special Status Plant Species Known to Occur on the Project Site

One Federally-listed Threatened and CNPS List 1B species, ash-gray Indian paintbrush; and five CNPS List 1B species, Parish's rock cress, Big Bear Valley woollypod, silver-haired ivesia, purple monkeyflower, and Bear Valley phlox, were observed on the project site during the 2002, 2007, and 2008 botanical surveys. The surveys identified an herbaceous layer of Wright's matting buckwheat (in the western half of the project site) and found inclusions of ash-gray Indian paintbrush and Parish's rock cress throughout an approximate 18.01-acre area of open Jeffrey pine forest. Silver haired ivesia was found to be concentrated entirely within the project site's mapped pebble plain habitat. Bear Valley woollypod was found in patches scattered throughout Jeffrey pine forest habitat on the project site. Purple monkeyflower was found to be widely distributed on the large pebble plain in the conservation area, with a small portion of the population extending down the draw to the east

into the southern half of proposed Lot 50. Finally Bear Valley phlox was found to be distributed in the open black oak woodland and under Jeffrey pines.

The 2008 survey concluded that a total of 7.7 acres of occupied ash-gray paintbrush habitat are present within the project site: a 0.11-acre area in the southernmost portions of proposed Lots 47 and 48, consisting of approximately 50 plants; a small 0.01-acre inclusion located at the rear of Lot 49; a single point with three plants located at the vernal spring on the rear portion of Lot 50; and a 0.11-acre on Lot 50; 4.91 acres within Lot A and the primary pebble plain habitat within the project site; 2.07 acres within Lots 1 – 5; and 0.5 acre within Road A, for a total of 7.7 acres of occupied habitat. While previous surveys indicated that development would result in the removal of 13.81 acres of open Jeffrey pine forest known to support ash-gray Indian paint brush, surveys conducted during drought-years may have over calculated the estimate of ash-gray Indian paintbrush or based the assumption on presence on the basis of Wright's matting buckwheat distribution (without regard to association with the ash-grey Indian paintbrush (Krantz 2008). The 2008 survey therefore concluded that the amount of occupied habitat of ash-gray Indian paintbrush to be approximately 7.71 acres instead of the 13.81 acres that had been estimated in the 2002 and 2007 surveys. The Applicant, nonetheless, proposes a 4.91-acre conservation easement within which is located 4.91 acres of occupied ash-gray Indian paint brush habitat surrounding a 0.69-acre pebble plain.

4.91 acres of occupied ash-gray Indian paint brush habitat in open Jeffrey pine surrounding the 0.69 acre of Pebble Plain habitat will be permanently preserved under a 4.91-acre conservation easement (refer to Exhibit 4.3-4). In addition, by protecting the most exemplary and best quality pebble plain habitat on-site, all six of the special status species observed on-site will also be protected. Based on the recommendations made by Krantz (2008), a 10-acre off-site mitigation site will be purchased as compensation for direct and indirect impacts to ash-gray Indian paintbrush outside the 4.91-acre conservation area. These 10 acres of pebble plain are private land located at the northern terminus of Dixie Lee Lane in the Sugarloaf area of Big Bear Valley. The 10 acres are fenced, high quality pebble plain that is one of the best remaining examples of pebble plain habitat in private ownership and will allow for mitigation for remaining impacts to the ash-gray Indian paintbrush present within Lots 1 – 5 (refer to Exhibit 4.3-4) to occur at a 3:1 ratio.



Source: Hicks & Hartwick, Inc. (July, 2009), Bon Terra Consulting (July 2003), Tim Krantz (2008), Scott White & MBA.

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Michael Brandman Associates

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Exhibit 4.3-4
Proposed Alternative Project Impacts Map

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Special Status Plant Species Potentially Occurring on the Project Site

Botanical surveys during 2002 and 2007 were limited in calculation capability on the project site and throughout southern California due to prolonged drought. Many plant species in the project region are either annual (i.e., complete their life cycles in a single year and then die) or perennial herbs (i.e., die back to the ground level each year and persist as underground bulbs or rootcrowns). In poor rainfall years, annual and perennial herbs may not have been visible, though they may have existed on a site as an inactive seed, bulb, or rootcrown. Most of the special status plants of the Big Bear area are perennial herbs, making a conclusive determination of "presence" or "absence" based on field surveys difficult during low rainfall years. However, previous reports of presence and determination of habitat quality may have plausibility in estimating the probability that a special status plant species might occur on the project site.

As a result of the drought conditions under which previous surveys had been conducted, Dr. Timothy Krantz performed a Supplemental Focused Rare Plant Survey within the project site in 2008, which was a year of normal precipitation. The Krantz survey (2008; see Appendix B) was able to confirm the presence and distribution of the plants in a normal rainfall year.

Special status plants known to occur on the project site are described above; special-status plants that could potentially occur on the project site, but that have not been identified on the project site during focused surveys conducted in 2002, 2007, or 2008, include six listed threatened or endangered species (bird's foot checkerbloom, San Bernardino bluegrass, California dandelion, Big Bear Valley sandwort, southern mountain buckwheat, and slender-petalled thelypodium); one CNPS List 1B and state-listed Rare species and Candidate for federal listing as Threatened or Endangered (Parish's checkerbloom); and 26 CNPS List 1B or 2 species as follows:

- Rock sandwort;
- Big Bear Valley milk vetch;
- Palmer's mariposa lily;
- San Bernardino Mountain owl's clover;
- Male fern;
- San Bernardino Mountains dudleya;
- Leafy buckwheat;
- San Bernardino Mountain gilia;
- Shaggy-haired alum root;
- Parish's alumroot;
- Short-sepaled lewisia;
- Lemon lily;
- Baldwin Lake linanthus;
- San Bernardino Mountain monkeyflower;
- Purple monkeyflower;
- Baja navarretia;
- Parish's yampah;
- Bear Valley phlox;
- Bear Valley pyrrocoma;
- San Bernardino butterweed;
- Prairie wedge grass;
- Southern jewelflower; and
- Grey-leaved violet.

Special Status Wildlife Species

The Proposed Alternative Project would result in the loss of potential habitat for several special status wildlife species potentially present on the project site. For those species expected to occur, potential impacts were evaluated for the habitat that the species is expected to occupy.

Reptiles

Implementation of the Proposed Alternative Project may result in impacts on special status reptile species. One federal Species of Concern, the southern sagebrush lizard, has been observed on the project site. Four additional species that are federal Species of Concern and/or State Species of Special Concern have potential to occur on the project site. These species are the silvery legless lizard, coastal western whiptail, San Bernardino ringneck snake, and San Bernardino Mountain kingsnake. The loss of potential habitat for these species would be considered less than significant due to the limited amount of habitat loss relative to the availability of habitat for these species in the region.

Intensive surveys for the State-listed Threatened southern rubber boa were conducted on the project site in the spring and summer of 2002 and an additional assessment was conducted by Dr. Glenn Stewart, PhD, Professor Eneritus of Zoology and Environmental Sciences, Cal Poly Pomona, in February 2007. Given the negative results of two independent focused survey techniques, the results of Dr. Stewart's assessment, and the lack of historical records in the immediate vicinity of the project site, the survey report concluded that this species has a low potential to occur on the project site.

Birds

Project implementation may result in impacts on special status bird species. Nineteen sensitive bird species (Federal Species of Concern, State Endangered Species and State Species of Special Concern) have potential to occur on the project site and are discussed below.

Bald Eagle. The bald eagle was taken off the federal list of threatened species, but remains on the State endangered species list. Small wintering populations of bald eagle often occur in scattered montane locations in the region. Big Bear Lake supports the largest wintering population of bald eagle in southern California and may include as many as 30 individuals in peak years. The bald eagle was observed using several trees on the project site for perch and roost locations. A records search also demonstrated that some of the most utilized perch and roost trees on the north shore of the lake are located on the project site. Given the limited distribution of wintering populations of bald eagles in southern California, removal of these trees and/or construction of uses in proximity to trees such that there would be a loss of perching or roosting habitat value for wintering bald eagles would be considered a significant impact. In addition, two pair of bald eagles were documented nesting at Big Bear during Spring/Summer 2007. As the bald eagle has recently nested at Big Bear, ongoing surveys of the project site during breeding season is recommended to verify the continued absence of nesting bald eagles on the project site.

Cooper's Hawk, Northern Goshawk, Sharp-shinned Hawk, Golden Eagle, Long-eared Owl, Ferruginous Hawk, Northern Harrier, White-tailed Kite, Merlin, American Peregrine Falcon, Osprey, Prairie Falcon, and California Spotted Owl. Proposed Alternative Project implementation would reduce the amount of foraging habitat for these species. This impact would contribute to the cumulative loss of foraging habitat for these raptor species. However, the loss of potential foraging habitat for these species would be considered adverse, but less than significant due to the limited amount of habitat loss relative to the availability of foraging habitat for these species in the San Bernardino Mountains and National Forest.

The Cooper's hawk, long-eared owl, white-tailed kite, and California spotted owl also have potential to nest on the project site. If an active raptor nest (common or special status species) were found on the project site, the loss of the nest would be considered a violation of the California Fish and Game Code Sections 3503, 3503.5, and 3513. The loss of any active raptor nest occurring on the project site would be considered significant.

Black Swift, Yellow Warbler, Hepatic Tanager, Purple Martin, and Gray Vireo. Proposed Alternative Project implementation would reduce the amount of foraging habitat for these species. In addition, the hepatic tanager and purple martin have potential to nest on the project site and implementation of the Proposed Alternative Project may impact active nests. The loss of potential habitat for these species would be considered adverse, but less than significant due to the limited amount of habitat loss relative to the availability of habitat for these species in the San Bernardino Mountains and National Forest.

Mammals

Project implementation may result in impacts on special status mammal species. No federally- and/or State-listed species have potential to occur on the project site. However, 11 Federal Species of Concern and/or State Species of Special Concern have potential to occur on the project site and are discussed below.

Pallid Bat, Spotted Bat, Small-Footed Myotis, Long-Eared Myotis, Occult Little Brown Bat, Fringed Myotis, Long-Legged Myotis, Yuma Myotis, and Pacific Western Big-Eared Bat. The project site provides suitable foraging habitat for these bat species. Proposed Alternative Project implementation would reduce the amount of foraging habitat for these species. The pallid bat, small-footed myotis, long-eared myotis, Occult little brown bat, fringed myotis, long-legged myotis, and Yuma myotis, also have potential to roost on the project site. This impact would contribute to the cumulative loss of foraging and roosting habitat for these bat species. However, the loss of potential habitat for these species would be considered adverse, but less than significant, due to the limited amount of habitat loss relative to the availability of foraging and roosting habitat for these species in the San Bernardino Mountains and National Forest.

San Bernardino Mountain Flying Squirrel. Although focused surveys for the flying squirrel were negative, the project site provides suitable foraging and breeding habitat for this species. Proposed Alternative Project implementation would impact habitat for this species. However, the loss of potential habitat would be considered adverse, but less than significant, due to the limited amount of habitat loss relative to the availability of habitat for this species in the San Bernardino Mountains and National Forest.

Direct Impacts

Flora and Vegetation Type Impacts

A total of 61.87 acres of native and non-native vegetation types, including developed areas, would be impacted by the Proposed Alternative Project.

Jeffrey Pine Forest

A total of 50.72 acres of Jeffrey pine forest, including 13.81 acres of open Jeffrey pine forest, would be impacted by Proposed Alternative Project implementation. Approximately 58,526 acres of Jeffrey pine forest occurs in the San Bernardino National Forest and 141,604 acres in the Cleveland, San Bernardino, Angeles and Los Padres National Forests collectively. Approximately 4.2 acres of open Jeffrey pine forest will be permanently preserved by a conservation easement. Impacts on this vegetation type would be considered less than significant since this vegetation type is common throughout the San Bernardino Mountains and other mountain ranges in the region.

Lake Shoreline

A total of 4.0 acres of ruderal lake shoreline would be impacted by Proposed Alternative Project implementation. Man-made lakes are essentially distinct ecosystems, with an aquatic fauna and flora that bears little resemblance to what naturally occurs in the streams that formed them. Impacts on this vegetation type would be considered less than significant since Big Bear Lake is a man-made reservoir created by the construction of Bear Valley Dam.

Pebble Plains

A total of 0.69 acre of pebble plain habitat would be preserved in an open space conservation easement under the Proposed Alternative Project. An additional 10 acres of pebble plain habitat will be preserved through purchase on an off-site mitigation area. Conservation efforts to protect the pebble plain habitat are discussed above, under Special Status Biological Resources Impacts.

Developed

A total of 2.82 acres of disturbed vegetation in developed areas (SR-38) would be impacted by Proposed Alternative Project implementation. Impacts on this vegetation type would not be considered significant since this vegetation type is considered to have a low biological value.

Indirect Impacts

Wildlife Impacts

The loss of habitat, loss of wildlife, wildlife displacement, and habitat fragmentation that would result from construction of the Proposed Alternative Project would not be considered significant because these impacts would not substantially diminish habitat for wildlife in the region nor reduce any specific wildlife populations in the region to below self-sustaining numbers.

Indirect Impacts

Indirect impacts are those related to disturbance by construction (such as noise, dust, and urban pollutants) and long-term use of the project site and its effect on the adjacent habitat areas. The indirect impact discussion below includes a general assessment of the potential indirect affects (noise, dust and urban pollutants, lighting, human activity, and non-native species introduction), of the construction and operation of the Proposed Alternative Project. Particular focus is placed on the indirect effects on the natural open space area from the Proposed Alternative Project, collectively referred to as edge effects.

Edge effects occur where development, including roads, takes place adjacent to natural open space areas. Edge effects threaten the ecological integrity, recreational experience, aesthetic quality, public investment, and safety operations of preserved or undeveloped natural areas located adjacent to developed areas. When development is configured in a manner that creates a high ratio of development edge to natural open space, there is an increase in the potential impacts caused by human use (indirect impacts). These indirect effects that address both the short-term construction and long-term use of the project site are outlined below.

Noise Impacts

Noise levels on the project site would increase over present levels during and upon completion of construction of the Proposed Alternative Project. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Upon completion of construction, noise levels on the project site would increase as a result of increased human activity associated with residential uses. Both short and long-term noise impacts

could potentially disrupt the foraging and roosting potential of the site for the bald eagle. Any interruption of the foraging and/or roosting behavior of the bald eagle would be considered a significant impact.

Both short- and long-term residential noise impacts on the bald eagle would be considered an unavoidable significant impact of the Proposed Alternative Project.

Increased Dust and Urban Pollutants

Grading activities would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs, and herbs in the natural open space areas adjacent to the project site. The respiratory function of the plants in these areas would be impaired when dust accumulation is excessive. These impacts are considered adverse, though less than significant.

Night Lighting

Lighting of the residential units would inadvertently result in an indirect effect on the behavioral patterns of nocturnal and crepuscular (i.e., active at dawn and dusk) wildlife that are present along the boundaries of the natural areas of the project site. Of particular concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and on owls, which are specialized night foragers. In addition, the increase in night lighting could discourage nesting and roosting along the lake shore. Most notably, lighting associated with the Proposed Alternative Project could disrupt roosting behavior of the bald eagle on the project site. This increased lighting, in conjunction with the increased noise and habitat loss, would be considered potentially significant.

Human Activity

The increase in human activity (i.e., noise, foot traffic) would increase the disturbance of natural open space adjacent to the project site. Human disturbance could disrupt normal foraging and breeding behavior of wildlife remaining in adjacent areas, diminishing the value of these open space habitat areas. Most notably, residential activity associated with the Proposed Alternative Project could disrupt foraging and roosting behavior of the bald eagle on the project site.

Non-Native Species Introduction

The native habitat types within the natural open space areas adjacent to the project site would be subject to greater pressure from non-native plant species within the developed portions of the project site. Areas that have undergone disturbance generally contain a high number of non-native grasses and forbs that can successfully out-compete the native plants in the region. This will be especially true after initial project grading of the project site. Should non-native plants establish themselves in these areas prior to the establishment of native plant species or non-native/non-invasive plant species in the landscape areas, the non-natives may become invasive in the natural open space areas. Left uncontrolled, these “weeds” may begin encroaching into the adjacent natural areas. These impacts could become significant if uncontrolled.

Jurisdictional Waters

Waters of the U.S. (Non-Wetland) Determination

Based on the results of the field observations and data collection, RBF identified 0.15 acre of USACE jurisdictional "waters of the U.S." within the proposed project site. The drainages are ephemeral; Big Bear Lake, although not included in the acreage calculation, is also considered jurisdictional by USACE. Utilizing the most current development plans, it was determined that the proposed improvements would impact up to 0.04 acres of waters of the U.S. under USACE jurisdiction. A boat launch ramp will be constructed on the existing land without fill or drainage occurring in the Marina and, therefore, would not impact waters of the U.S.

California Department of Fish and Game (1602) Jurisdiction

Based on the results of the field observations and data collection, RBF identified 0.15 acre of CDFG jurisdictional streambed. Utilizing the most current development plans, it was determined that the proposed improvements would impact up to 0.04 acre of CDFG jurisdiction waters of the State.

Wildlife Movement

The development of the project site would not impact wildlife corridors, by definition, but may affect local travel routes. Construction of the residential areas would result in reduced connectivity between Big Bear Lake as a water source to the contiguous open spaces on and to the north of the project site. Additionally, construction of the Proposed Alternative Project would result in increased traffic on the project site by residents that would further impede movement of terrestrial wildlife currently crossing the site and SR-38. Although this impact is considered locally adverse, it is not considered significant because the impact does not substantially affect a regionally important wildlife movement corridor.

Regional and Local Policies/Plans

County of San Bernardino General Plan

The project site is located in unincorporated San Bernardino County and is subject to the provisions and policies of the County of San Bernardino General Plan. The General Plan contains a list of species considered Rare, Threatened, or Endangered by the County. Projects potentially impacting County-listed species must prepare an EIR to determine the significance of impacts on these species. Two plant species identified within the General Plan, Parish's checkerbloom and bird's foot checkerbloom, have the potential to occur on the project site. Krantz's 2008 Focused Survey, during a normal precipitation year, concluded that neither of the two plant species were identified on site and they are not considered likely to occur on site.

County of San Bernardino Biotic Resources Overlay District

The intent of the BR Overlay District is to require the preparation of a biological technical report for projects within the BR Overlay District identifying impacts to biological resources and mitigation measures designed to reduce or eliminate Proposed Alternative Project-related impacts. The

biological technical reports prepared as part of this Revised and Recirculated Draft EIR are intended to satisfy the requirements of the BR Overlay District.

Plant Protection and Management Ordinance – County of San Bernardino Development Code

Title 8, Division 9 of the San Bernardino County Development Code contains policies and requirements applicable to the project site, including Section 89.0110(a), 89.0115(c), and 89.0205. Section 89.0110(b) states that the provisions of this Division shall not authorize the removal of perch trees within identified American bald eagle habitat.

Section 89.0115(c) requires that the County "may require certification from an appropriate tree expert or native plant expert that such tree removals are appropriate, supportive of a healthy environment and are in compliance with the provisions of this chapter." The Forester's Report and the Botanical Survey Letter Report are intended to satisfy the requirements of this section (refer to Appendix B of this Revised and Recirculated Draft EIR). The County shall make a determination based on the evidence presented herein and in the Forester's Report as to the significance of the Proposed Alternative Project impacts to native plants and compliance with the provisions of Division 9 of the County Development Code.

The intent of Section 89.0205 is to treat coniferous tree species such that they don't present a risk of fire, and spread tree insect pests and infection. Compliance with this Section would be enforced by the County standard conditions and requirements during construction of the Proposed Alternative Project.

Migratory Bird Treaty Act

Implementation of the Proposed Alternative Project may impact the nests of species covered by the MBTA, including the Cooper's hawk, purple martin, and hepatic tanager.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act will continue to protect the bald eagle following delisting under the Federal Endangered Species Act. Originally passed in 1940 to protect bald eagles, the Eagle Act was amended in 1962 to protect golden eagles as well, by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, would, kill capture, trap, collect, molest or disturb (16 U.S.C. 668(c); 50 CFR 22.3).

4.3.5 - Mitigation Measures

The mitigation measures associated with the Proposed Alternative Project are described below.

Special Status Biological Resources

Special Status Plants and Plant Communities

BR-1a Prior to the initiation of clearing or grading activities on the project site, the off-site 10-acre Dixie Lee Lane Pebble Plain Habitat shall be established as a conservation easement and a non-wasting endowment will be established for the monitoring and management of the preservation of the 10-acre site by the management entity (e.g., San Bernardino Mountains Land Trust (SBMLT) or other land stewardship entity) in perpetuity.

BR-1b Prior to the initiation of clearing or grading activities on the project site, the 4.91-acre on-site conservation easement shall be established, the management entity will be approved by the CDFG, and a non-wasting endowment will be established for the monitoring and management of the preservation of the proposed conservation easement by the management entity in perpetuity.

BR-1c Construction to the rear portions of Lots 47, 48, 49, and 50 shall be restricted by means of building envelopes or building setback lines to prevent construction in the occupied ash-gray paintbrush habitat, wherever feasible.

BR-1d Long-term conservation areas will be actively managed to prevent edge-effects from existing and proposed adjacent land uses. A habitat management plan (HMP) will be developed for the on-site Conservation Easement area. The HMP shall address management of the rare plant preserve with respect to the following indirect impacts:

- Removal and control of invasive non-native plants;
- Trampling or soil damage caused by foot traffic, vehicles, bicycles, or other recreation;
- Alteration of surface hydrological conditions caused by irrigation on adjacent lots, road runoff, or water diversions installed for erosion control;
- Vegetation clearing, especially for fuel modification to reduce fire hazards to adjacent homes.

The HMP shall be administrered by the SBMLT or other land stewardship entity. Funding for implementation of habitat management measures shall be derived from interest earned from the habitat management endowment.

Special Status Wildlife

BR-2 Trees and downed logs shall remain in place, to the extent that clearing is not required by the development process, and a 50-foot setback (measured on each side of the centerline) must be maintained along the deepest ravine at the eastern edge of the property. This measure will serve to preserve habitat for such species as southern rubber boa.

BR-3 The project proponent shall have a biologist qualified with San Bernardino flying squirrel (SBFS) as a monitor during tree removal.

Minimize the number of trees, snags, and downed wood removed for project implementation. Compensating the removal of snags containing cavities; this would be achieved by constructing and erecting two nest boxes and one aggregate box per snag removed. Appendix B of this Revised and Recirculated Draft EIR provides the specifications of the nest and aggregate boxes (Flying Squirrels 2007). These boxes should be located on the adjacent U.S. Forest Service (USFS) land (with their permission) and the locations marked with a global positioning system. The locations of the boxes shall be provided to the USFS so that their biologists could monitor the boxes for occupation by SBFS.

Provide new homeowners with a flyer that would provide information on the biology of SBFS and how they are susceptible to depredation by cats. The flyer would also outline steps that homeowners could take to reduce their urban edge effects.

BR-4 Trees identified in Exhibits 3 and 4 of the Bald Eagle Survey Report (Appendix B of this Revised and Recirculated Draft EIR) as eagle perch locations shall be preserved in place upon project completion. If any of the designated perch trees should become hazardous and need to be taken down, replacement will be at a 5:1 ratio with the creation of artificial perch trees along shoreline designated open space. Any development that may occur within the project site and in the individual lots must avoid impacts to trees larger than 24 inches diameter breast height (dbh) and their root structures to the maximum extent feasible. If any additional non-perch trees on-site larger than 24 inches dbh are removed, then a replacement ratio of 2:1 shall be required and replacement trees shall be 24-inch box trees or larger. All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees. These restrictions on development of the individual lots must be clearly presented and explained to any potential prospective developers and/or homeowners prior to assumption of title and close of escrow. This measure shall be identified as a Note on the Composite Development Plan.

BR-5 Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed to identify all large trees (i.e., greater than 20 inches in diameter at 4.5 feet from the ground) within 600 feet from the high water line. Trees identified on the project site as having a diameter in excess of 20 inches at 4.5 feet from the ground within 600 feet of the shoreline shall be documented and tagged. Any development that may occur within the project site and in the individual lots shall avoid impacts to tagged trees and their root structures. If such trees cannot be avoided, their removal shall be coordinated with the County of San Bernardino to minimize impacts to the extent feasible. All construction or landscaping improvements, including irrigation, will be prohibited on or around the

exposed root structures or within the dripline of these trees. These restrictions on development of individual lots must be clearly presented and explained to any potential prospective developers and/or homeowners prior to assumption of title and close of escrow. This measure shall be identified as a Note on the Composite Development Plan.

BR-6 Seven days prior to the onset of construction activities, a qualified biologist shall survey within the limits of project disturbance for the presence of any active raptor nests. Any nest found during survey efforts shall be mapped on the construction plans. If no active nests are found, no further mitigation would be required. Results of the surveys shall be provided to the CDFG.

If nesting activity is present at any raptor nest site, the active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California Fish and Game Code. Nesting activity for raptors in the region of the project site normally occurs from February 1 to June 30. To protect any nest site, the following restrictions on construction are required between February 1 and June 30 (or until nests are no longer active as determined by a qualified biologist): (1) clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying shall not be allowed within 200 feet of any occupied nest. Any encroachment into the 300/200-foot buffer area around the known nest shall only be allowed if it is determined by a qualified biologist that the proposed activity shall not disturb the nest occupants. Construction during the nesting season can occur only at the sites if a qualified biologist has determined that fledglings have left the nest.

BR-7 Vegetation removal, clearing, and grading on the project site should be performed outside of the breeding and nesting season (between February 1 and June 30), when feasible, to minimize the effects of these activities on breeding activities of migratory birds and other species. If clearing occurs during breeding season, a 30-day clearance survey for nesting birds shall be conducted. Any nest found during survey efforts shall be mapped on the construction plans. If no active nests are found, no further mitigation would be required. Results of the surveys shall be provided to the CDFG. If nesting activity is present at any nest site, the active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California Fish and Game Code.

BR-8 The use of the boat dock for motorized boating shall be prohibited between the dates of December 1 and April 1. No motorized boats shall be allowed to launch or moor in the vicinity of the boat dock at any time during this period. This restriction shall be clearly displayed on signage at the entrance to the parking lot and on the boat dock visible from both land and water. This requirement shall also be published in the Homeowner's Association Conditions, Covenants & Restrictions (CC&Rs).

Sensitive Natural Communities/Habitats

Wildlife Impacts/Indirect Impacts

BR-9 Street lamps on the project site shall not exceed 20 feet in height, shall be fully shielded to focus light onto the street surface and shall avoid any lighting spillover onto adjacent open space or properties. Furthermore, street lights shall utilize low color temperature lighting (e.g., red or orange).

BR-10 Outdoor lighting for proposed homes on the individual tentative tracts shall not exceed 1,000 lumens. Furthermore, residential outdoor lighting shall not exceed 20 feet in height and must be shielded and focused downward to avoid lighting spillover onto adjacent open space or properties. These restrictions on outdoor lighting of the individual tentative tracts must be clearly presented and explained to any potential prospective developers and/or homeowners prior to assumption of title and close of escrow. This requirement shall also be published in the Homeowner's Association CC&Rs.

BR-11 To limit the amount of human disturbance on adjacent natural open space areas, signs shall be posted along the northern and eastern perimeter of the project site where the property boundary abuts USFS open space with the following statement: "Sensitive plant and wildlife habitat. Please use designated trails and keep pets on a leash at all times."

In addition, a requirement stating that residents shall keep out of adjacent open space areas to the north with the exception of designated trails will be published in the Homeowner Association CC&Rs and a map of designated hiking trails will be provided to all residents.

BR-12 Prior to recordation of the final map, a landscaping plan for the entire tract shall be prepared (inclusive of a plant palette) with an emphasis on native trees and plant species, and shall be submitted to the County of San Bernardino for review and approval by a qualified biologist. The review shall determine that invasive, non-native plant species are not to be used in the proposed landscaping. The biologist will suggest appropriate native plant substitutes or non-invasive, non-native plants. A note shall be placed on the Composite Development Plan indicating that all proposed landscaping (including landscaping on individual lots) shall conform to the overall approved tract map landscaping plan. A requirement shall be included stating that residents shall include a restriction of the use of tree and plant species to only trees/plants approved per the overall tract map landscaping plan, the Homeowner Association CC&Rs shall also restrict (individual lot owners) to use only tree and plant species approved per the overall tract map landscaping plan.

Jurisdictional Delineation

Per the direction of the CDFG, all unavoidable impacts to State and Federal jurisdictional lakes, streams, and associated habitat shall be compensated for with the creation and/or restoration of in-kind habitat on-site and/or off-site at a minimum 3:1 replacement-to-impact ratio. Additional

requirements may be required through the permitting process depending on the quality of habitat impacted, project design and other factors.

Wildlife Movement

No mitigation measures are recommended.

Regional and Local Policies/Plans

No mitigation measures are recommended.

Cumulative

No mitigation measures are recommended.

4.3.6 - Level of Significance After Mitigation

As part of the analysis of impacts to biological resources found on the project site, MBA contracted with Scott White Biological Consulting to conduct an inventory of sensitive plant communities and plant species occurring on-site. The Vegetation and Special Status Plants report prepared by Mr. White determined that both Pebble Plain and open Jeffrey Pine Forest habitats occur on-site and that these sensitive plant communities supported one federally listed plant species (ash-gray paintbrush) and four special status species. The report also characterized the plant community found along the shoreline as wet meadows. Small patches of wet meadow habitats were mixed with ruderal shoreline vegetation and were considered too small in size to actually map or to determine an acreage calculation. Recommendations were made to avoid the sensitive habitats, where feasible, and to mitigate off-site at 3:1 for direct impacts and 1:1 for indirect impacts if impacts couldn't be avoided. The report further indicated that there were numerous private land owners possessing off-site Pebble Plain and open Jeffrey Pine Forest habitats that could be purchased for mitigation.

In an effort to more adequately define impacts and to locate off-site properties for mitigation, Timothy Krantz, Ph.D., a noted authority on sensitive plant communities, with emphasis on Pebble Plain, open Jeffrey Pine Forest, and Wet Meadow habitats occurring within the Big Bear area, conducted a Focused Rare Plant Survey in 2008. 2008 was a year of normal precipitation. Dr. Krantz's Report reached the following conclusions:

- Although there are some scattered occurrences of indicator plant species, wet meadow habitat no longer occurs along the shoreline portion of the project site. This sensitive habitat has been replaced with mostly ruderal species and should be characterized as ruderal shoreline habitat.

- The 0.69 acre of Pebble Plain habitat can be successfully avoided and potential indirect impacts fully mitigated as part of the project design, through the creation of a 4.91-acre conservation easement (Lot A). No further mitigation would be required.

- Approximately 7.71 acres of occupied ash-gray Indian paintbrush habitat is present within the project site. Of these 7.71 acres of occupied habitat, 4.91 acres would be avoided through the creation of the 4.91-acre conservation easement on Lot A. Development of the Proposed Alternative Project would therefore only impact 2.8 acres of occupied habitat. Dr. Krantz (Krantz 2008; Appendix B) concurred that off-site compensation would be the preferred mitigation measure and identified a single parcel (10 acres) of Pebble Plain/open Jeffrey Pine Forest habitat that supports ash-gray paintbrush. This is the Dixie Lee Lane Pebble Plain Habitat that is characterized by Dr. Krantz as "high quality pebble plain" and has been fenced and protected since the mid 1980s. With preservation of the 10-acre Dixie Lane property, the project will have sufficient off-site mitigation at a 3:1 ratio to mitigate project impacts to ash-gray Indian paintbrush.

Implementation of these Mitigation Measures, including the implementation of on-site and off-site conservation of Pebble Plain Habitat, would reduce impacts to less than significant levels.

Significant and unavoidable impacts related to Biological Resources have been identified for impacts to bald eagle. If the County of San Bernardino approves the Proposed Alternative Project, the County shall be required to cite their findings in accordance with Section 15091 of CEQA and prepare a Statement of Overriding Considerations in accordance with section 15093 of CEQA.

No additional significant impacts related to Biological Resources have been identified following implementation of mitigation measures and/or compliance with applicable standards, requirements and/or policies by the County of San Bernardino.

4.4 - Hydrology and Water Quality

This section is based on the San Bernardino County Stormwater Program Model Water Quality Management Plan Guidance (June 2004); the 2005 Final Environmental Impact Report (EIR) prepared by RBF Consulting; the County of San Bernardino Hydrology and Hydraulics Preliminary Report prepared by AEI-CASC Engineering in October 2007; and the Tentative Tract 16136 Moon Camp – Post Construction Water Quality Findings, October 2007, prepared by AEI-CASC Engineering (Appendix C).

4.4.1 - Existing Conditions

Existing conditions are described in detail in the 2005 Final EIR. To date, these hydrological conditions have not changed. The drainage on the project site follows a natural pattern based on the topography of the site, which generally slopes in a north to south direction into Big Bear Lake. The project site is located within a 181-acre watershed. Some of the storm runoff flows across State Route 38 (SR-38) on the project site as sheet flow, some flows through a natural channel, and some runs through culverts, but the entire watershed flows south into the lake.

The project site elevation ranges from 6,747 feet at the lakeshore to 6,960 feet at the northeast corner. Slopes range from 5 percent to 40 percent and with generally southern exposure. Slopes become steeper farther north on the project site and are shallower near the waterline.

The upper slopes are composed of soil type D according to the San Bernardino County Hydrology Manual. Soil type D consists of clay soils and has a high runoff potential. The bottom half of the project site contains soils classified as type C. Soil type C consists primarily of silty-loam soils and has a slow infiltration rate.

The U.S. Army Corps of Engineers (USACE) has jurisdiction over a fraction of an acre of land in the project site because of its status as a perennial stream and they must have an opportunity to participate in the planning of this development. USACE also shares jurisdiction of the shoreline with California Department of Fish and Game (CDFG). Big Bear Lake is CDFG jurisdiction.

Watershed Characteristics

The 2005 Final EIR contains a detailed description of the watershed and its subareas.

Flood Control

According to the Flood Insurance Rate Map (FIRM) number 06071C7295 F, there is no existing flood hazard within the project site. The site is classified as flood zone D.

Groundwater

The following information is based on the 2005 Final EIR. Additional details may be found in the 2005 Final EIR and its appendices.

The project site overlies two groundwater aquifers, the North Shore Hydrologic Subunit and the Grout Creek Hydrologic Subunit. Both contain large independent surface water catchments. Most of the project site is located in a tributary aquifer of the North Shore Subunit designated as Subarea A. The northwest portion of the project site is located within tributary Subarea D of the Grout Creek Subunit. Both tributary subunits are groundwater sources and will supply the Proposed Alternative Project.

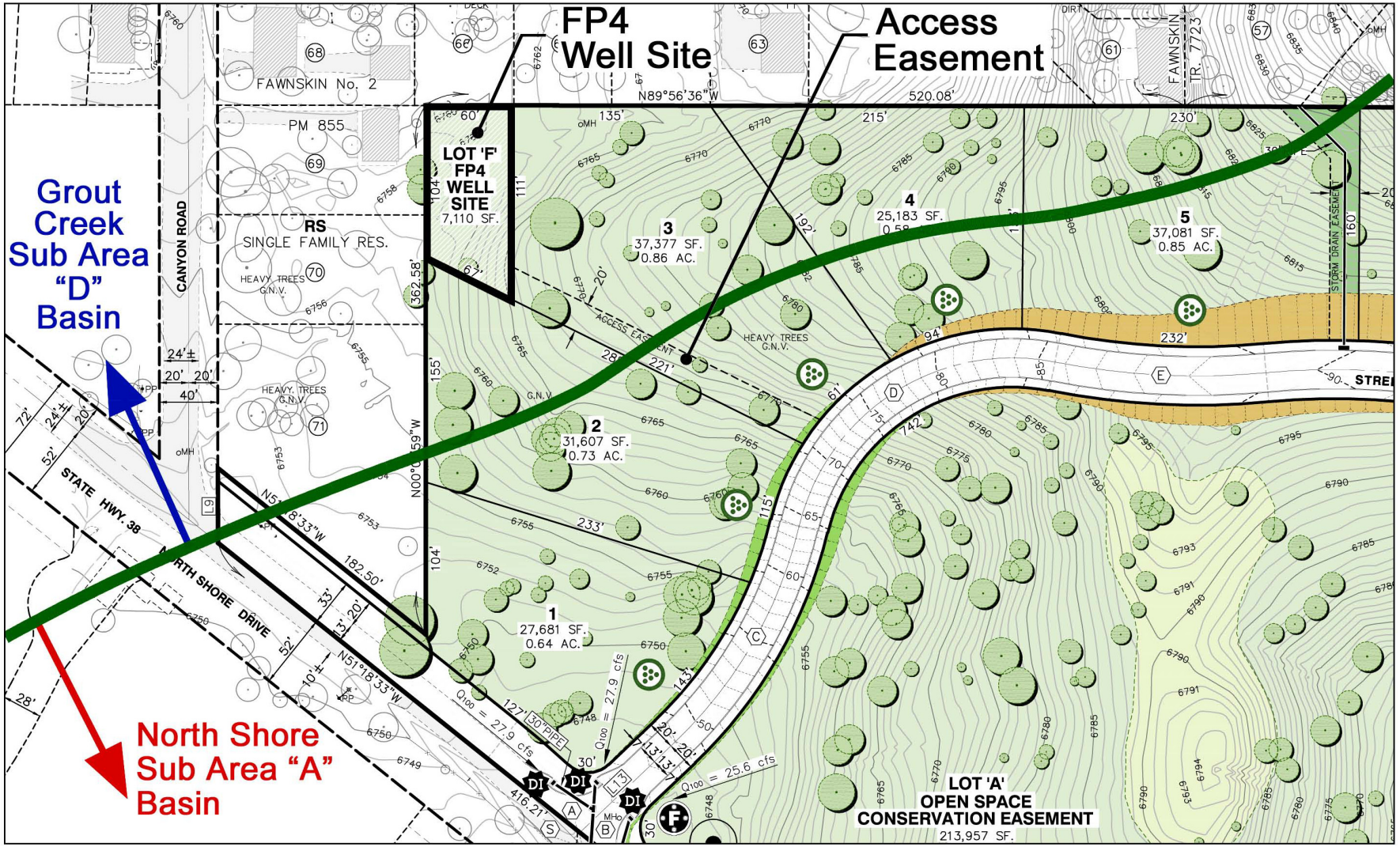
The baseline depth to groundwater in the North Shore Subunit is at 5 to 50 feet below surface depth. During the period 1996 to 2003, the groundwater level dropped approximately 20 feet in the North Shore Subunit. There are 40 private, homeowner, active wells currently extracting water from the Subarea A tributary aquifer. The average annual recharge for Subarea A has been estimated at between 14 and 44 acre feet.

The depth to groundwater in the Grout Creek Subunit is between 20 to 90 feet in the alluvium. Water is also found in fractures of the underlying bedrock. There are 29 private wells in this subunit. Groundwater levels have remained fairly stable during the study period. The average annual recharge for Subarea D of the Grout Creek Subunit has been estimated at between 32 and 99 acre feet.

Drainage and Groundwater Recharge

Impacts to surface water drainage would be significant if the Proposed Alternative Project changes the drainage patterns of the site and these changes cause erosion, siltation, increased runoff or flooding. Increase in the amount of runoff would be significant if it affects SR-38 or its storm drain culverts. Project design features and the Storm Water Pollution Prevention Program are presented with the Proposed Alternative Project to alleviate this possibility. They include the provision of adequate outlet structures, storm drains to contain flows, and proper hillside drainage. The Proposed Alternative Project incorporates appropriate redirection of flow and properly eliminates sheet flow across SR-38 through the introduction of check dams and storm culverts. All cross-culverts will be designed to handle the 100-year storm event.

Groundwater recharge is understood to occur during extended periods of rain and snow, and there is currently no supplementation or intentional recharging of the aquifers. The groundwater percolates into the alluvium and eventually flows into the sediments beneath Big Bear Lake. Most surface drainage goes directly into the lake; even though the site is currently pervious (except for the highway), the percolation rates are slow due to clay content in the soil. One goal of the San Bernardino County Stormwater Plan is to limit runoff from all project sites to 90 percent of the original amount.



Source: Hicks & Hartwick, Inc. (February 15, 2010).

NORTH

Not To Scale

Michael Brandman Associates

00520089 • 03/2010 | 4.4-1_Grout_Creek_Hydro.ai

Exhibit 4.4-1
Grout Creek Hydrologic Subunit: FP4 Well Site

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Water Supply

Refer to Section 4.9, Utilities, of this report for an extensive discussion of water supply for the Proposed Alternative Project. The Proposed Alternative Project's potential to substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level is also analyzed in Section 4.9, Utilities.

Surface Water Quality

Water quality is of fundamental concern. Because water is the universal solvent, it tends to contract pollution easily from the surroundings as it goes through its cycle. Chemicals of concern to the project location include dissolved solid waste, nitrogen fertilizers, organic pesticides, arsenic, other organic biocides and organic salts. The water from the two domestic water wells on the project site that would serve the Proposed Alternative Project was tested for standard pollutants (the third on-site well is a monitoring well). The results were of above average quality; only iron was above the national standard. Nearby wells have very low iron, so the result could be an anomaly.

According to the San Bernardino County Stormwater Program – Model Water Quality Management Plan (WQMP, 2004), the Proposed Alternative Project does require implementation of a WQMP because it proposes more than 10 residential units. Surface water quality in a developed area can have potentially detrimental effects on overall water quality and can limit the practical uses of receiving waters. The model program was developed to be incorporated into the conditions of approval during the permitting process of a project, and may also be referred to in the mitigation measures or incorporated into project design features. The effect is to minimize the transport of pollutants into bodies of water by limiting the impervious surfaces, slowing down the flow rate so water can better percolate into the earth (so sediments are deposited and/or not carried off), and capturing pollutants before they reach the receiving body of water.

Scoping Meeting Comments

The following questions and comments regarding hydrology were taken from the March 31, 2007, Public Meeting. The discussion was incorporated in to the text of this section as much as possible.

- Dredging in the lake to accommodate the marina.
- Address new urban runoff that would be associated with the Proposed Alternative Project.
- Big Bear Lake is currently an impaired body of water. The Revised Draft EIR must address urban runoff and lake water quality.
- Will runoff affect existing wells?

4.4.2 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on water resources were derived from Appendix G of the California Environmental Quality Act (CEQA) guidelines. A significant impact would occur if the Proposed Alternative Project would:

a) Violate any water quality standards or waste discharge requirements;

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;

f) Otherwise substantially degrade water quality;

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

h) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and

i) Result in inundation by seiche, tsunami, or mudflow.

4.4.3 - Project Impact Analysis

As a reference aid, the impact analysis for the Proposed Alternative Project has been categorized by subtopic.

Proposed Alternative Project Improvements

The mitigation measures in Section 4.4.6 specify Proposed Alternative Project improvements which would control and prevent stormwater damage and pollution by the Proposed Alternative Project. By following established guidelines for the management of runoff water, the Proposed Alternative Project would reduce runoff from the site to 90 percent of the current undeveloped rate. Therefore, there would be no additional runoff. Runoff that does occur would be filtered through a series of

engineered devices designed to remove pollutants. This strategy for controlling urban runoff meets County, State and federal standards.

Flood Control

According to the San Bernardino County General Plan EIR, Table IV-H-1, the project area is located in Flood Control District Zone 6, which is a low flood potential zone. This is due to the fact that the upstream watershed is relatively small and that runoff is incapable of producing floods with huge amounts of water. Nonetheless, stormwater culverts would be enlarged and fortified so that runoff would be conveyed under SR-38, thereby eliminating sheet flow.

Water Supply

Refer to Section 4.9, Utilities, of this Revised and Recirculated Draft EIR for an extensive discussion of water supply for the Proposed Alternative Project.

Surface Water Quality

Post-project runoff flows are proposed to generally remain in the existing natural drainage pattern, with culvert crossings occurring at low points along the highway and under interior roads, with ultimate discharge into Big Bear Lake. The Proposed Project Alternative will have a minor impact on the overall existing hydrology, effecting primarily minor redirection of natural flows, with the outfall into the lake remaining largely unchanged in both location and quantity. Proposed Alternative Project runoff flows will be carried to the lake via six proposed storm culverts, which drain directly into the lake itself; thus, runoff from the Proposed Alternative Project becomes a small part of the vast storage volume in Big Bear Lake.

The Proposed Project Alternative has been designed so that minor grading and minimal increases of impervious surfaces would occur on each lot by utilizing stemwall construction and a reduced overall construction footprint. Each lot will further reduce project runoff with the implementation of bioretention Best Management Practices (BMPs), while roads constructed as part of the Proposed Alternative Project will have runoff directed to bioretention areas. Big Bear Lake has a storage capacity of approximately 73,000 acre-feet. The project site is estimated to produce runoff equivalent to 0.04 percent of lake volume before development and 0.09 percent of lake volume after development. Thus, Proposed Alternative Project runoff is a miniscule fraction of lake storage.

Big Bear Lake possesses a controlled release point for project runoff flows at Big Bear Dam, which is controlled by Big Bear Municipal Water District (BBMWD). The primary goal of the BBMWD is maintaining the water level of Big Bear Lake at as high a level as possible given the availability of water and finances. The belief is that a constant water level increases recreational use, stabilizes property value, improves water quality and supports a healthier fish and wildlife environment.

BBMWD accomplishes their goal by implementing a water management plan that includes the following: [1]

- Stabilization of Big Bear Lake by managing the amount of water released to the downstream water rights holder;
- Watershed/water quality management;
- Recreation management; and
- Bear Valley Dam and Reservoir Maintenance.

In many seasons, BBMWD will elect to keep water in the lake and then purchase "in-lieu" water to meet demands of the downstream water rights holder. This "in-lieu" water is purchased from the San Bernardino Valley Municipal Water District and consists of water supplied via the State Water Project.

Releases from Big Bear Dam encounter another controlled release point further downstream at the Seven Oaks Dam, which is controlled by the USACE. The USACE operates Seven Oaks Dam in tandem with the Prado Dam, located 40.3 miles downstream on the Santa Ana River, by implementing the following strategies: [2]

- Runoff during the early flood season is stored behind Seven Oaks Dam to build a debris pool to protect outlet works;
- Small releases from Seven Oaks Dam are made on continual basis to maintain downstream water supply;
- During a flood, Seven Oaks Dam will store runoff for as long as the reservoir pool at Prado Dam is rising;
- After the flood threat has passed, Seven Oaks Dam will release stored water at a rate which does not exceed the downstream channel capacity; and
- After the flood season, Seven Oaks Dam will be gradually drained and the Santa Ana River will flow through unhindered.

BBMWD and the USACE's regulation of their structures is a function of irrigation demand, availability of water from other sources, and flood control purposes. Because these two organizations and their structures regulate and control discharges to downstream waters, and because runoff from the project site is miniscule compared to the volume stored in Big Bear Lake, Hydrologic Conditions of Concern (HCOC) for the Proposed Alternative Project development are independently minimal and not expected to directly and significantly impact down stream receiving waters.

[1] http://www.bbmwd.org/, Accessed Oct 1, 2007
[2] http://www.spl.usace.army.mil/resreg/htdocs/7oaks.html, Accessed Oct 1,2007

Project Receiving Waters

Big Bear Lake is the primary downstream receiving water for the project site. As project runoff flows continue westerly, further downstream receiving waters are the Santa Ana River, reaches 6 through 1, which ultimately drain to the Pacific Ocean. As Table 4-4-1 indicates, one or more of these receiving waters are impaired.

Table 4.4-1: Project Receiving Waters and Impairment

Storm Drains and Receiving Waters	Receiving Water Classification		Primary Hydro Unit Basin No.	303(d) Listing		TMDL Pollutants
	Proximate	Downstream		Listed?	Pollutant Causing Impairment	
Big Bear Lake	Yes	Yes	801.71	Yes	Copper, Mercury & Metals Source: **Resource Extraction** Noxious Aquatic Plants, Nutrients & Sedimentation/Siltation – Source: **Construction/Land Development, Snow skiing activities** PCBs (Polychlorinated biphenyls) -Source **Unknown**	Adopted Phosphorus
Santa Ana River (Reach 6)	No	Yes	801.72	No	None	None
Santa Ana River (Reach 5)	No	Yes	801.52	No	None	None
Santa Ana River (Reach 4)	No	Yes	801.25	Yes	Pathogens – Non Point Source	Not Adopted
Santa Ana River (Reach 3)	No	Yes	801.21	Yes	Pathogens – "Dairies"	Not Adopted
Prado Basin Management Zone	No	Yes	802.21	No	None	None
Santa Ana River (Reach 2)	No	Yes	801.11	No	None	None
Santa Ana River (Reach 1)	No	Yes	801.11	No	None	None
Pacific Ocean	No	Yes	801.11	No	None	None

Project Pollutants and Pollutants of Concern

Table 4.4-2 lists the pollutants likely to be associated with the development of the Proposed Alternative Project and compares these pollutants to pollutants causing stress in local receiving waters. When a project pollutant is the same as a pollutant causing stress in the receiving waters, the San Bernardino County WQMP Guidance requires that project runoff be treated for said pollutants utilizing BMPs that are medium to high effectiveness. Pollutants of concern for the Moon Camp project are bacteria/virus, heavy metals, nutrients, and sediments, see Table 4.4-2.

Nutrients are of particular concern because a total maximum daily load (TMDL) for phosphorus has been adopted for Big Bear Lake. The current TMDL assigned to Big Bear Lake is 475 lbs per year for Urban Waste Load Allocation for phosphorus. For urban areas, compliance with this TMDL requires compliance with the Municipal Separate Storm Sewer System (MS4) Permit, which, in turn, requires implementation of BMPs, which treat pollutants of concern at a medium to high level of effectiveness.

Table 4.4-2: List of Project Pollutants

Land Use	Associated Project Pollutants		Is Pollutant 303(d) Listed and/or TMDL for Receiving Water
	Pollutants	Status	
Home Subdivisions of 10 units or more & Streets/Highways/Freeways	Bacteria/Virus	Expected	Yes
	Heavy Metals	Expected	Yes
	Nutrients	Expected	Yes
	Pesticides	Expected	No
	Organic Compounds	Expected	No
	Sediments	Expected	Yes
	Trash and Debris	Expected	No
	O_2 Demanding Substances	Expected	No
	Oil and Grease	Expected	No

Permit Regulations

WQMP Requirements

The Santa Ana Regional Water Quality Control Board Order Number R8-2002-0012, NPDES Permit No. CAS618036 (Permit) requires post-construction BMPs to be implemented for new development and significant redevelopment projects, for both private and public agencies. A WQMP is then used to guide the development and implementation of a program to minimize the detrimental effects of urbanization on the beneficial uses of receiving waters, including effects caused by increased

pollutants loads and changes in hydrology.[3] Under the permit's requirements, the Proposed Alternative Project will be required to comply with the WQMP guidance document by implementing the following:

- Incorporate and implement site design BMPs;
- Incorporate and implement all applicable source control BMPs;
- Incorporate or implement Treatment Control BMPs; and
- Utilize a combination of site design, source control and/or treatment control that addresses all identified pollutants and hydrologic conditions of concern.

TMDL Requirements

The Santa Ana Regional Water Quality Control Board Resolution No. R8-2006-0023, amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate a Nutrient TMDL for Dry Hydrological Conditions for Big Bear Lake, was approved by the Office of Administrative Law (OAL) on August 21, 2007. Under this resolution, it appears that the only TMDL implementation provision applicable to the Proposed Alternative Project is the item referring to the MS4 Stormwater Permit:

> **Implementation Task 3.1** - "Waste Discharge Requirements for the San Bernardino County Flood Control and Transportation District, the County of San Bernardino and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618036 (Regional Board Order No. R8-2002- 0012). The current Order has provisions to address TMDL issues. In light of these provisions, revision of the Order may not be necessary to address TMDL requirements."

The deadline for the Regional Board's update to the MS4 permit is February 29, 2008; however, as noted in Implementation Task 3.1, changes to the MS4 permit may not be necessary to address TMDL issues.

The County of San Bernardino, in compliance with its MS4 permit, has adopted a program that requires new development projects, such as the Proposed Alternative Project, to prepare and implement a WQMP that includes a combination of site design, source control, and treatment control BMPs to reduce the discharge of pollutants and hydrologic conditions of concern resulting from the development. This Revised and Recirculated Draft EIR outlines the site design BMPs, source control BMPs, and treatment control BMPs to be implemented by the Proposed Alternative Project, with said controls to ultimately be documented in a project-specific WQMP. Therefore, by preparing and implementing a WQMP including the prescribed BMPs, the Proposed Alternative Project will be compliant with the County's requirements, and by extension, the MS4 permit and TMDL implementation plan.

[3] San Bernardino Stormwater Program – Model Water Quality Management Plan Guidance Document, June 2005

Project BMPs

In order to address the project POCs and to reduce the chance of pollutants entering Big Bear Lake, the Applicant will implement a treatment BMP that is effective for all POCs and also prepare a WQMP which shall incorporate the following:

Site Design

Lots in the Proposed Alternative Project are proposed to be low density with stem wall construction, thereby reducing the area of construction. This criterion in planning reduces the overall footprint of construction and minimizes the imperviousness of each lot. The Proposed Project Alternative also proposes to include 5.73 acres of dedicated open space.

Source Control

Activity restrictions and property owners' education are crucial to the Proposed Alternative Project's success at preserving water quality. The more informed each property owner is, the more likely they are to participate in compliance with imposed water quality standards. Conditions, Covenants & Restrictions (CC&Rs) shall be utilized in this Proposed Alternative Project to clearly spell out activities that are not beneficial to water quality and shall not be allowed on the project site. The CC&Rs will be implemented and maintained by the Proposed Alternative Project's Property Owner's Association (POA). Specific and detailed activity restrictions will be included in the Final WQMP. Activities to be restricted in the Final WQMP include, but are not limited to:

- Conducting any activity, improvement or construction that would in any way tamper with, interfere with, or alter the treatment BMP (bioretention) in a manner that renders them less effective; and
- Any activity that is not consistent with the San Bernardino County ordinances and State/Federal laws relating to land use, zoning, and housing and fire hazard abatement.

Treatment Control

Assuming a generous average house footprint of 3,500 square feet on a 43,560-square-foot lot, with an estimated driveway surface of 3,000 square feet, produces an impervious percentage of 15. Using this average 15 percent yields a water quality volume (V_0) of 1.56 acre-feet for all project lots. Calculating the water quality volume of street runoff at 90 percent yields a V_0 of 0.37 acre-feet. Therefore, the individual lot treatment BMPs shall be designed to address 1.56 acre-feet of total water quality volume, approximately 0.03 acre-feet per lot, while the street treatment BMPs shall address the remaining 0.37 acre-feet of the water quality volume.

As shown in Table 4.4-3, the combination of a biofilter and filtration will treat the project pollutants of concern at medium to high level of effectiveness. The Caltrans Treatment BMP Technology Report (April 2007) provides results of their full-scale pilot studies performed on various BMPs. The report shows that bioretention will effectively treat nutrients from the project, including nitrogen and phosphorus, at a medium level of effectiveness.

Table 4.4-3: BMPs Level of Treatment

Pollutant of Concern	Treatment Control BMP Categories	
	Biofilter	Filtration
Sediment/Turbidity	H/M	H/M
Nutrients	L	L/M
Organic Compounds	U	H/M
Trash & Debris	L	H/M
Oxygen Demanding Substances	L	H/M
Bacteria & Viruses	U	H/M
Oils & Grease	H/M	H/M
Pesticides (non-soil bound)	U	U
Metals	H/M	H

Bioretention is the selected treatment BMP for the Proposed Alternative Project and operates similar to that of a biofilter and filtration. The individual lot owners will each treat their water quality volume prior to discharging from the site. Property owners will be responsible for their own maintenance. The street runoff will also be treated with bioretention that is located in common areas or on open space lots, with maintenance by the POA.

Cumulative Impacts

It is possible that cumulative impacts to Big Bear Lake would occur as a result of this Proposed Alternative Project combined with other development in the region. According to the Santa Ana Regional Water Quality Control Board (SARWQCB-District 8), construction, land development, snow skiing activities, and unknown point sources are the culprits of pollutants such as sedimentation, siltation, excess nutrients, and exotic/noxious plants. As discussed earlier, Big Bear Lake is listed by the SWRCB as an impaired body of water. However, with implementation of mitigation listed in Section 4.4.6 (BMPs, SWPPP, NPDES), the Proposed Alternative Project's potential to cumulatively impact lake water quality would be reduced to less than significant. Furthermore, mitigation outlining protocol procedure for set limits on groundwater well extraction and a defined water supply agreement (alternative) between the Project Applicant, the DWP, and CSA 53C would reduce the Proposed Alternative Project's potential cumulative impact to groundwater supply to less than significant.

Summary of Impacts

Drainage

The Hydrology and Hydraulics Preliminary Report (October 2007) concludes that the proposed development of the Proposed Alternative Project would have a minor impact on the overall hydrology. The primary effects would be a result of redirection of hydrologic flows from their natural direction and the elimination of surface flow across the highway as sheet flow. Because there

is a considerable amount of siltation in the existing culverts under SR-38, the culvert crossings would need to be reworked. This siltation illustrates the tendency of the soils of the watershed to erode and deposit near the lake and the project area. If the Proposed Alternative Project is not revegetated, or if large parts of the watershed become denuded as a result of drought, fire, or for any circumstance, the result could be accelerated erosion in the project area. The Proposed Alternative Project design features are expected to be an improvement to the overall drainage of the site and its ability to handle drainage problems.

Marina

Compared to 105 boat slips initially proposed in the Original Proposed Project, the Proposed Alternative Project includes 55 boat slips. This would require no dredging, just the sinking of posts for support of the boat slip structure. Big Bear Lake is listed by the SWRCB as an impaired water body. Per The Clean Water Act, before the USACE can issue a permit for the marina/boat ramp/slip dock, the project Applicant must receive an individual Conditional Water Quality Certification. Therefore, compliance with this procedure would reduce the level of impact to less than significant.

4.4.4 - Standard Conditions and Uniform Codes

The County of San Bernardino follows State standards for water quality. During construction, projects will be required to obtain coverage under the State's General Permit for Construction Activities that is administered by the California Regional Water Quality Control Board (RWQCB). The Proposed Alternative Project will obtain coverage under the statewide National Pollutant Discharge Elimination System (NPDES) permit for construction activities, and develop and implement a Stormwater Pollution Prevention Program (SWPPP) to control erosion and protect water quality during the construction phase of the Proposed Alternative Project as well as operating under an approved WQMP.

At a minimum, the SWPPP would address the following items:

- **Erosion control.** Employ measures to prevent the movement of soil by wind or water during construction and may include watering, and physical barriers to the movement of soil particles.
- **Tracking of Soil.** Employ measures to effectively minimize the tracking of soil by vehicles and may include gravel driveways, wheel washes and street sweeping.
- **Wastes and Cleanup.** The SWPPP must also address washout, cleanup and disposal related to debris, trash, concrete, asphalt, paint, coatings, solvents and other materials applicable to preparation and construction at the project site.

Other Reasonable BMPs. The SWPPP must also implement other applicable BMPS as needed to keep pollutants away from stormwater. The SWPPP must also identify additional applicable measures taken during the storm season and when storms are anticipated.

At a minimum, the WQMP would keep stormwater separate from potential pollutants and address the following items:

- **Parking Lot Runoff**. Parking lot drainage points should be equipped with oil/water separators which shall be maintained according to the manufacturer's requirements for maintenance.
- **Material Storage Area.** Any materials stored outdoors must be covered such that material cannot meet materials.
- **Other Reasonable BMPs.** WQMP and BMPs used on-site should be reviewed and revised as necessary to keep pollutants away from stormwater and the lake.

4.4.5 - Project Design Features

The 2005 Final EIR concluded that the 92 residential lot plan would cause significant adverse impacts to groundwater resources. This resulted in the Tract Map's revision by lowering lot quantity to 50 residential units in order to alleviate impacts to groundwater resources. An analysis of Water Supply impacts and associated mitigation measures is included in Section 4.9, Utilities. Mitigation measures incorporated in Sections 4.4.6 and 4.9.8 would reduce impacts to groundwater resources to a level of less than significant. Furthermore, the Proposed Alternative Project's proposal to construct several storm drain lines during development would mitigate by lowering on-site drainage impacts to a level of less than significant.

4.4.6 - Mitigation Measures

The following is a list of mitigation measures organized into categories. These mitigation measures are to be applied to the Proposed Alternative Project along with the SWPPP and WQMP.

Flood Control/Drainage Channels

HYD-1 Prior to issuance of a building permit, a program satisfactory to the County will be formulated to handle storm drain waters adequately.

HYD-2 All required drainage improvements must be designed and constructed to County standards. Tentative tract map, site plan, and other precise plans for individual lots will be accompanied by adequate plans for drainage improvements prepared by registered professional engineers.

HYD-3 The proposed cross culverts shall be sized for 100-year burn and bulking flow rates. The burn and bulking method would increase the runoff from the natural areas. The method provided in the Los Angeles County Hydrology Manual is recommended. In addition, the cross culverts shall all be designed with headwalls to prevent CMP crushing, and shall be maintained adequately.

Water Quality

Construction Impacts

HYD-4 To mitigate sediment transport during construction, the developer shall submit a sedimentation control plan with the grading plan for review and approval by the Public Works Department. The Project engineer shall certify compliance.

HYD-5 Prior to Grading Permit issuance and as part of the Proposed Alternative Project's compliance with the NPDES requirements, a Notice of Intent (NOI) shall be prepared and submitted to the SARWQCB providing notification and intent to comply with the State of California general permit. Also, a SWPPP shall be completed for the construction activities on-site. A copy of the SWPPP shall be available and implemented at the construction-site at all times. The SWPPP shall outline the source control and/or treatment control BMPs to avoid or mitigate runoff pollutants at the construction-site to the "maximum extent practicable."

HYD-6 At a minimum, the following shall be implemented from the California Storm Water Best Management Practice Handbook - Construction Activity:

- Dewatering Operations – This operation requires the use of sediment controls to prevent or reduce the discharge of pollutants to storm water from dewatering operations.
- Paving Operations – Prevent or reduce the runoff of pollutants from paving operations by proper storage of materials, protecting storm drain facilities during construction, and training employees.
- Structural Construction and Painting – Keep site and area clean and orderly, use erosion control, use proper storage facilities, use safe products and train employees to prevent and reduce pollutant discharge to storm water facilities from construction and painting.
- Material Delivery and Storage – Minimize the storage of hazardous materials on-site. If stored on-site, keep in designated areas, install secondary containment, conduct regular inspections and train employees.
- Material Use – Prevent and reduce the discharge of pesticides, herbicides, fertilizers, detergents, plaster, petroleum products and other hazardous materials from entering the storm water.
- Solid Waste Management – This BMP describes the requirements to properly design and maintain trash storage areas. The primary design feature requires the storage of trash in covered areas.
- Hazardous Waste Management – This BMP describes the requirements to properly design and maintain waste areas.

- Concrete Waste Management – Prevent and reduce pollutant discharge to storm water from concrete waste by performing on and off-site washouts in designated areas and training employees and consultants.
- Sanitary Septic Water Management – Provide convenient, well-maintained facilities, and arrange regular service and disposal of sanitary waste.
- Vehicle and Equipment Cleaning – Use off-site facilities or wash in designated areas to reduce pollutant discharge into the storm drain facilities.
- Vehicle and Equipment Fueling – Use off-site facilities or designated areas with enclosures or coverings to reduce pollutant discharge into the storm drain facilities.
- Vehicle and Equipment Maintenance – Use off-site facilities or designated areas with enclosing or coverings to reduce pollutant discharge into the storm drain facilities. In addition, run a "dry site" to prevent pollution discharge into storm drains.
- Employee and Subcontractor Training – Have a training session for employees and subcontractors to understand the need for implementation and usage of BMPs.
- Preservation of Existing Vegetation – Minimize the removal of existing trees and shrubs since they serve as erosion control.
- Seeding and Planting – Provide soil stability by planting and seeding grasses, trees, shrubs, vines, and ground cover.
- Mulching – Stabilize cleared or freshly seeded areas with mulch.
- Geotextiles and Mats – Natural or synthetics material can be used for soil stability.
- Dust Control – Reduce wind erosion and dust generated by construction activities by using dust control measures.
- Construction Road Stabilization – All on-site vehicle transport routes shall be stabilized immediately after grading and frequently maintained to prevent erosion and control dust.
- Stabilized Construction Entrance – Stabilize the entrance pad to the construction area to reduce amount of sediment tracked off-site.
- Earth Dikes – Construct earth dikes of compacted soil to divert runoff or channel water to a desired location.
- Temporary Drains and Swales – Use temporary drains and swales to divert off-site runoff around the construction-site and stabilized areas and to direct it into sediment basins or traps.
- Outlet Protection – Use rock or grouted rock at outlet pipes to prevent scouring of soil caused by high velocities.

- Check Dams – Use check dams to reduce velocities of concentrated flows, thereby reducing erosion and promoting sedimentation behind the dams. Check dams are small and placed across swales and drainage ditches.
- Silt Fence – Composed of filter fabric, these are entrenched, attached to support poles, and sometimes backed by wire fence support. Silt fences promote sedimentation behind the fence of sediment-laden water.
- Straw Bale Barrier – Place straw bales end to end in a level contour in a shallow trench and stake them in place. The bales detain runoff and promote sedimentation.
- Sand Bag Barriers – By stacking sand bags on a level contour, a barrier is created to detain sediment-laden water. The barrier promotes sedimentation.
- Brush or Rock Filter – Made of 0.75 to 3-inch diameter rocks placed on a level contour or composed of brush wrapped in filter cloth and staked to the toe of the slope provides a sediment trap.
- Storm Drain Inlet Protection – Devices that remove sediment from sediment laden storm water before entering the storm drain inlet or catch basin.
- Sediment Trap – A sediment trap is a small, excavated, or bermed area where runoff for small drainage areas can pass through allowing sediment to settle out.

Long-Term Operational Impacts

HYD-7 A water quality maintenance program will be implemented to mitigate the impact of Proposed Alternative Project generated runoff on surface water quality over the long term. The program outlined in Water Pollution Aspects of Street Surface Contaminants (prepared by the United States Environmental Protection Agency) provides recommendations for street cleaning and prevention of pollution generation.

- Prior to Grading Permit issuance, a WQMP shall be developed and shall include both Non-Structural and Source Control BMPs. The WQMP shall conform to the San Bernardino County Draft NPDES permit and WQMP standards. The following are the minimum required controls to be implemented as a part of the WQMP for Urban Runoff.
- Education for Property Owners, Tenants and Occupations – The Property Owners Association is required to provide awareness educational material, including information provided by San Bernardino County. The materials shall include a description of chemicals that should be limited to the property and proper disposal, including prohibition of hosing waste directly to gutters, catch basins, storm drains or the lake.
- Activity Restrictions – The developer shall prepare conditions, covenants and restriction of the protection of surface water quality.

- Common Area Landscape Management – For the common landscape areas on-going maintenance shall occur consistent with County Administrative Design Guidelines or city equivalent, plus fertilizer and pesticide usage consistent with the instructions contained on product labels and with regulation administered by the State Department of Pesticide Regulation or county equivalent.
- Common Area Catch Basin Inspection – Property Owners Associations shall have privately owned catch basins cleaned and maintained, as needed. These are intended to prevent sediment, garden waste, trash and other pollutants from entering the public streets and storm drain systems.
- Common Area Litter Control – POAs shall be required to implement trash management and litter control procedures to minimize pollution to drainage waters.
- Street Sweeping Private Streets and Parking Lots – Streets and Parking lots shall be swept as needed, to prevent sediment, garden waste, trash and other pollutants from entering public streets and storm drain systems.

HYD-8 The following controls from the California Storm Water BMP Handbook - Municipal shall be employed:

- Housekeeping Practices – This entails practices such as cleaning up spills, proper disposal of certain substances and wise application of chemicals.
- Used Oil Recycling – May apply to maintenance and security vehicles.
- Vegetation Controls – Vegetation control typically includes chemical (herbicide) application and mechanical methods. Chemical methods are discussed in SC10. Mechanical methods include leaving existing vegetation; cutting less frequently, hand cutting, planting low maintenance vegetation, collecting and properly disposing of clippings and cuttings, and educating employees and the public.
- Storm Drain Flushing – Although general storm drain gradients are sufficiently steep for self-cleansing, visual inspection may reveal a buildup of sediment and other pollutants at the inlets or outlets, in which case flushing may be advisable.

HYD-9 The WQMP shall include Structural or Treatment BMPs. The structural BMPs utilized shall focus on meeting potential TMDL requirements for noxious aquatic plants, nutrients, sedimentation and siltation. The structural BMPs shall conform to the San Bernardino County NPDES permit and the San Bernardino WQMP standards.

HYD-10 Consistent with the WQMP guidelines contained in the Draft NPDES Permit and Waste Discharge Requirements for San Bernardino County, Structural BMPs shall be required for the Proposed Alternative Project. They shall be sized to comply with

one of the following numeric sizing criteria or be considered by the Permitees to provide equivalent or better treatment. Volume-based BMPs shall be designed to infiltrate or treat either:

- The volume of runoff produced from the 85th percentile 24-hour storm event, as determined from the local historical rainfall record; or
- The volume of the annual runoff produced by the 85th percentile 24- hours rainfall event, determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998); or
- The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in California Stormwater Best Management Practice Handbook – Industrial/Commercial (1993); or
- The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile 24-hour runoff event.

- OR -

- Flow-based BMPs shall be designed to infiltrate or treat either:
- The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or
- The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or
- The maximum flow rate of runoff, as determined from the local historical rainfall record that achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

HYD-11 The following are the minimum required controls to be implemented as a part of the WQMP for Urban Runoff.

- Control of Impervious Runoff – Surface runoff shall be directed to landscaped areas or pervious areas.
- Common Area Efficient Irrigation – Physical implementation of the landscape plan consistent with County Administrative Design Guidelines or city equivalent, which may include provision of water sensors, programmable irrigation timers, etc.
- Common Area Runoff-Minimizing Landscape Design – Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration.

- Catch Basin Stenciling – "No Dumping – Flows to Lake" or equivalent effective phrase shall be stenciled on catch basins to alert the public as to the destination of pollutant discharging into storm drain.
- Debris Posts – These shall be installed to prevent large floatable debris from entering the storm drains. They shall be placed upstream of the cross culverts.
- Inlet Trash Racks – These shall be installed where appropriate to reduce intake and transport through the storm drain system of large floatable debris. Trash racks shall be provided where drainage from open areas enters storm drain or cross culverts.

HYD-12 Storm water treatment under the NPDES Permit and the future TMDL requirements shall include the construction of treatment BMPs.

HYD-13 Treatment BMPs appropriate for on-site use shall include infiltration trenches and basins, swales, inlet filtration, and/or water quality basins.

HYD-14 All storm water runoff shall be treated before leaving the site to reduce pollutants in Big Bear Lake.

Infiltration Trenches and Basins

HYD-15 Infiltration trenches and/or basins shall be used on site to meet potential future TMDLs for noxious aquatic plants and nutrients. Infiltration trenches and basins treat storm water runoff through filtration. A typical infiltration trench is essentially an excavated trench, that is lined with filter fabric and backfilled with stones. Depth of the infiltration trench shall range from three to eight feet and shall be located in areas with permeable soils, and water table and bedrock depth situated well below the bottom of the trench. Trenches shall not be used to trap coarse sediments since large sediment would likely clog the trench. Grass buffers may be installed to capture sediment before it enters the trench to minimize clogging. Infiltration basins shall be used for drainage areas between 5 and 50 acres. Infiltration basins shall be either in-line or offline, and may treat different volumes such as the water quality volume or the 2-year or 10-year storm.

Swales

HYD-16 The Proposed Alternative Project shall implement either vegetative swales, enhanced vegetated swales utilizing check dams and wide depressions, a series of small detention facilities designed similarly to a dry detention basin, or a combination of these treatment methods into a treatment train (series of Structural BMPs). The Water Quality Management Plan shall address treatment for the Proposed Alternative Project to assure that runoff from the site is treated to the "maximum extent practicable." The swales shall be treated as water quality features and shall be maintained differently than grass areas. Specifically, pesticides, herbicide, and

fertilizers, which may be used on the grass areas, shall not be used in the vegetation swales.

Filtration

HYD- 17 Filtration shall be implemented as a treatment method and shall use drop-in infiltration devices or inline devices. Drop-infiltration devices at all curb inlets within the internal parking lots shall be implemented to provide potential pollutant removal. Existing examples of these filtration devices include the Drain Pac Storm Drain Inserts and Fossil Filters. These types of devices are efficient at removing oil and grease, debris, and suspended solids from treated waters. Some of these devices have also exhibited high efficiencies at removing heavy metals and other pollutants. Inline devices suggested for use onsite include the Continuous Deflection Separator (CDS unit). Once the runoff has entered the storm drain, an in-line diversion would direct the treatment flow to a CDS unit. The CDS unit is a non-blocking, non-mechanical screening system, which would provide a second line of defense for solids removal. Adsorption materials can be added within the CDS unit to aid in the removal of oil and grease. The treated flow would then exit the CDS unit and continue downstream. Monitoring of filtration devices shall be conducted. The use of street sweeps on the parking lots and streets shall aid in reducing the amounts of sediment and debris that flow through the devices. This would extend the effectiveness of the devices during a storm event and would lower the frequency of required maintenance. The devices shall be checked and cleaned, if necessary, once a month during the rainy season, following any precipitation and at the end of the dry season prior to the first precipitation event of the rainy season. Consideration shall be given to using these filtration units in other areas besides the parking lot inlets. Another potential location is at the downstream end of the tributary pipes that feed the discharge point. Siting these units at a downstream point would allow for the treatment of a greater amount of runoff.

Jurisdictional Waters

HYD-18 The Developer shall comply with any requirements of the U.S. Army Corps of Engineers (ACOE) and the California Department of Fish and Game (CDFG) regarding water quality and drainage.

HYD- 19 Any well located on the site of the Proposed Alternative Project, if not used as a water supply well or a monitoring well, shall be capped and taken out of service in accordance with accepted civil engineering standards.

Level of Significance After Mitigation

No significant impacts related to hydrology and water quality have been identified for the Proposed Alternative Project following implementation of the recommended mitigation measures and through regulatory compliance.

4.5 - Land Use

The purpose of this section is to identify existing land use conditions on the project site and in the vicinity and to evaluate the potential environmental impacts associated with the proposed General Plan Amendment to redesignate the project site from its current designation of Rural Living – 40 (RL-40) (minimum 40-acre lot size), which would allow one dwelling unit on-site, to Single Family Residential with 20,000-square-foot minimum lot sizes (RS-20M).

The 2005 Final Environmental Impact Report (EIR) evaluated the Original Proposed Project, which was a Tentative Tract Map for a 95-lot subdivision consisting of 92 residential lots and three lettered lots (for private streets) and a General Plan Amendment to redesignate the site from RL-40 to Single Family Residential (RS) with minimum 7,200-square-foot lots. Potential impacts associated with Original Proposed Project were thoroughly evaluated in Section 5.1 of the 2005 Final EIR. The conclusion of the 2005 Final EIR was that the Original Proposed Project was designed to be compatible with the surrounding land uses because:

- Implementation of the Original Proposed Project would be considered an extension of the existing land use pattern (i.e., surrounding single-family residential uses with a minimum lot size of 7,200 square feet) and offered the opportunity for a cohesively planned development that would be subject to compliance with the County's administrative design guidelines and development standards specific to the RS District.
- The Original Proposed Project was consistent with the relevant Land Use Element goals and policies for the RS District and the proposed single family residential development was considered to be a reasonable extension of the existing land use patterns (7,200-square-foot lots) of the adjacent developed neighborhoods.
- The proposed Land Use District Change would not have a substantial adverse effect on surrounding properties following compliance with the County's established development standards, design guidelines, and the mitigation measures identified in the 2005 Final EIR that relate to land use compatibility, such as aesthetics and noise.

The analysis presented herein is specifically related to the Proposed Alternative Project consisting of 57 lots (50 residential lots and seven lettered lots for Open/Space and Conservation, Neighborhood Lake Access, three well sites, a potential reservoir site, and in the case of Lot C, the parking lot for the proposed marina). This section also addresses the Applicant's intent to address issues raised concerning land use compatibility in comments received on the 2005 Final EIR, as well as comments raised in a Public Meeting held for local residents on March 31, 2007.

NOTE: Please be aware that this is explaining the difference of how the 'application' will be handled vs. the EIR):

"County Development Code Section 81.01.090 determines how the General Plan and the requirements of the Development Code will apply to a development project that is in progress at the time the General Plan or Development Code goes into effect. Development Code Section 81.01.090 provides that applications accepted as complete prior to April 12, 2007 (the effective date of the General Plan) "shall be processed in compliance with the regulations and requirements in effect at the time the application was accepted as complete." Because the County accepted the Mooncamp application as complete prior to April 12, 2007, the Mooncamp application is to be considered under the prior version of the General Plan and Development code analyzed in the 2004 Draft EIR.

CEQA requires the lead agency to examine "whether the proposed project would be consistent with existing zoning, plans and other applicable land use controls" (CEQA Guideline Section 15063 (d)(5)). In accordance with County staff direction, the Re-circulated Draft EIR complies with this requirement by providing evaluation of the original project's consistency with the updated General Plan and Development Code and the proposed project's consistency with the updated General Plan and Development Code land use designations that are applicable to the area surrounding the Project site. The potential significant impacts related to land use identified in the 2004 Draft EIR are the same as those discussed in the Re-circulated Draft EIR. However, subsequent to the 2004 Draft EIR, the proposed project was revised and a comparison of the Original Proposed Project and the Proposed Alternative Project is located in Table ES 4.5-1, below.

Table ES-4.5-1: Comparison - Original Proposed Project and Proposed Alternative Project

	Original Proposed Project	Proposed Alternative Project	Change
Site Size	62.43 acres	62.43 acres	No change
Proposed General Plan Designation*	BV/RS-1 (residential- minimum 7,200 sf lots)	BV/RS-20M (residential-minimum 20,000 sf lots)	Approx. 6 du/ac to approx 2 du/ac
Number of Lots	95	57	- 38
Residential Lots	92	50	- 42
Lettered Lots	3	7	+ 4
	Lot A – proposed private street designed to provide access to the southernmost lots (lakefront sites)	Lot A – a 4.91-acre Open Space/Conservation (OS/C) easement to preserve pebble plain habitat and eagle perch trees	4.91 acres of Open Space for habitat conservation and eagle perch trees
	Lot B – a 1.4-acre strip of land between State Route 38 and the private street south of the highway	Lot B – a 0.82 acre/891 lineal feet strip of land to remain OS/C between State Route 38 and the lakefront for open space and Neighborhood Lake Access	0.82 acre/891 lineal feet of Open Space for preservation of lake views, eagle perch trees and Neighborhood Lake Access
	Lot C – a gated entrance, south of State Route 38, a parking lot and access to the marina	Lot C – a 2.90-acre strip of land to be used as a parking lot and boat launch and open space	Open space, eagle perch trees and lake views are maintained

Table ES-4.5 1(cont.): Comparison - Original Proposed Project and Proposed Alternative Project

	Original Proposed Project	Proposed Alternative Project	Change
		Lots D, E and F – well sites	
		Lot G – reservoir site	Potential reservoir site
Common Areas	Common areas within lettered lots would be maintained by a homeowner's association	Conservation Easements would be maintained by a Conservation Group and Common areas within lettered lots would be maintained by a homeowner's association	A Conservation Group would maintain the Conservation Easements
Marina/Boat Dock	103 boat slips on west side of the site	55 boat slips on the east side of the site	- 48 and relocation
Lakefront Lots	31 lakefront lots	No lakefront lots	- 31 lakefront lots
State Route 38	Realignment of State Route 38 to provide a straighter alignment and to provided lakefront residential lots	No change in the alignment of State Route 38	No realignment No lakefront lots
Development Scenario	Lots would be sold individually and custom homes would be constructed by the individual property owners	Lots would be sold individually and custom homes would be constructed by the individual property owners	No change
* Current General Plan Designation is BV/RL-40 – Bear Valley Community Plan, Rural Living, minimum 40-acre residential lot size.			

4.5.1 - Existing Conditions

The project site consists of approximately 62.43 acres of undeveloped land located along the north shore of Big Bear Lake, in the unincorporated community of Fawnskin. Exhibit 2-2, in Section 2, Project Description, is an aerial photograph showing existing conditions in the vicinity of the project site. The property is adjacent to the boundaries of the San Bernardino National Forest; however, the Proposed Alternative Project requires no US Forest Service (USFS) permitting. State Route 38 (North Shore Drive/SR-38) traverses the southern portion of the property near the lakeshore.

Exhibit 4.5-1 shows the Land Use designations for the project site and vicinity. There are a number of local, State and federal agencies that have jurisdiction or permitting authority over construction and/or post-construction conditions of the Proposed Alternative Project. These agencies are listed in Section 2.5 of the Project Description and include the US Army Corps of Engineers (USACE) and State Regional Water Quality Control Board (RWQCB) with jurisdiction over waters of the United States (U.S.) (stormwater runoff into the lake).

The project site is currently undeveloped and is designated by the County of San Bernardino as being within the Bear Valley Community Plan (BV), Rural Living with minimum 40-acre lots (BV/RL-40). This means that under current conditions, the Applicant is allowed to develop one dwelling per 40 acres. Table 4.5-2 shows the Existing Land Use and Land Use Designations for the Proposed

Alternative Project site and surrounding properties. For the project site, the designation of RL-40 indicates that future development proposals will be considered based upon a demonstrated ability to provide adequate infrastructure and maintain consistency with the goals and policies of the Community Plan.

Table ES-4.5-2: Existing Land Use and Land Use Designations

Location	Existing Land Use	Community Plan Land Use District	Allowed Uses
Project Site	Vacant	Rural Living (BV/RL-40)	Minimum parcel size is 40 acres; one dwelling unit per parcel. Provides sites for rural residential uses, incidental agricultural uses, and similar and compatible uses. This is considered a holding zone designation in the Bear Valley Community Plan, which indicates that future General Plan amendments will be considered where specific development proposals demonstrate an ability to provide adequate infrastructure to serve the development and maintain consistency with the goals and policies of the Bear Valley Community Plan.
Northwest	Residential	Residential (BV/RS)	Allows four dwelling units per acre, minimum lot size is 7,200 square feet. Provides sites for single-family residential uses, incidental agricultural and recreational uses, and similar and compatible uses.
North	Vacant	Rural Living (BV/RL-10)	Minimum parcel size is 10 acres; one dwelling unit per parcel. Provides sites for single-family residential uses, incidental agricultural and recreational uses, and similar and compatible uses. Future development proposals within the RL-10 designation will be considered based on a demonstrated ability to provide adequate infrastructure and maintain consistency with the goals and policies of the 2006 Community Plan.
Northeast	Vacant and Forest (U.S. Forest Service)	Resource Conservation (RC)	Allows one unit per 40 acres, with a minimum district size of 200 acres. Provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses. This is U.S. Forest Service administered land.
East	Vacant and Forest (U.S. Forest Service)	Resource Conservation (RC)	Allows one unit per 40 acres, with a minimum district size of 200 acres. Provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses. This is U.S. Forest Service administered land.

Table ES-4.5 2 (cont.): Existing Land Use and Land Use Designations

Location	Existing Land Use	Community Plan Land Use District	Allowed Uses
Southeast	Residential	Residential (BV/RS)	Allows four dwelling units per acre, minimum lot size is 7,200 square feet. Provides sites for single-family residential uses, incidental agricultural and recreational uses, and similar and compatible uses.
South	Big Bear Lake, Residential (SE)	Floodway (FW).	Uses permitted at owners risk; minimum parcel size is 10 acres. Provides sites for animal keeping, grazing, crop production, and similar and compatible uses.
West	Vacant, and Residential	Special Development (BV/SD-RES)	Provides sites for a combination of residential, commercial, industrial, agricultural, open space and recreation uses, and similar and compatible uses.
		Single Residential (BV/RS)	4 dwelling units per acre, minimum lot size is 7,200 square feet. Provides sites for single-family residential uses, incidental agricultural and recreational uses, and similar and compatible uses.
Source: Bear Valley Community Plan, 2007.			

Comments from the March 31, 2007 Public Meeting

The following are public comments received during the March 31, 2007, Public Meeting related to Land Use and Land Use Compatibility:

- Address how 50 new homes will contribute to increased ambient noise and light in the vicinity and address the difference between owner occupied homes and rental homes (see Section 4.6, Noise, for a discussion of this issue).
- EIR needs to evaluate open space/land use compatibility.
- Address the proposed location of the marina and impacts to surrounding properties from light, noise, trash, and other issues.
- Will the project be evaluated under the existing general plan or the new general plan?
- Will there be restrictions on building footprints?
- Will the building footprint and heights affect/impact views from existing neighboring homes?
- What are the effects on existing property values in the neighborhood?

- Address project traffic on existing roads. Does the project trigger the need for turning lanes into existing streets? Particularly at Canyon Road and Highway 18. Residents do not want a traffic signal.
- Will bikeway go through the existing neighborhood?
- Address General Plan policies relative to 'fire hazards' and 'open space.'

4.5.2 - Thresholds of Significance

California Environmental Quality Act (CEQA) Guidelines

According to Appendix G of the CEQA Guidelines, a project would have significant land use impacts if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed project (including, but not limited to the General Plan, Specific Plan, local coastal program, or zoning ordinance) adopted for the purpose of mitigating an environmental effect;
- Conflict with adopted environmental plans and goals of the community where it is located;
- Conflict with established recreational, educational, religious, or scientific uses of the area; and/or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Bear Valley Community Plan

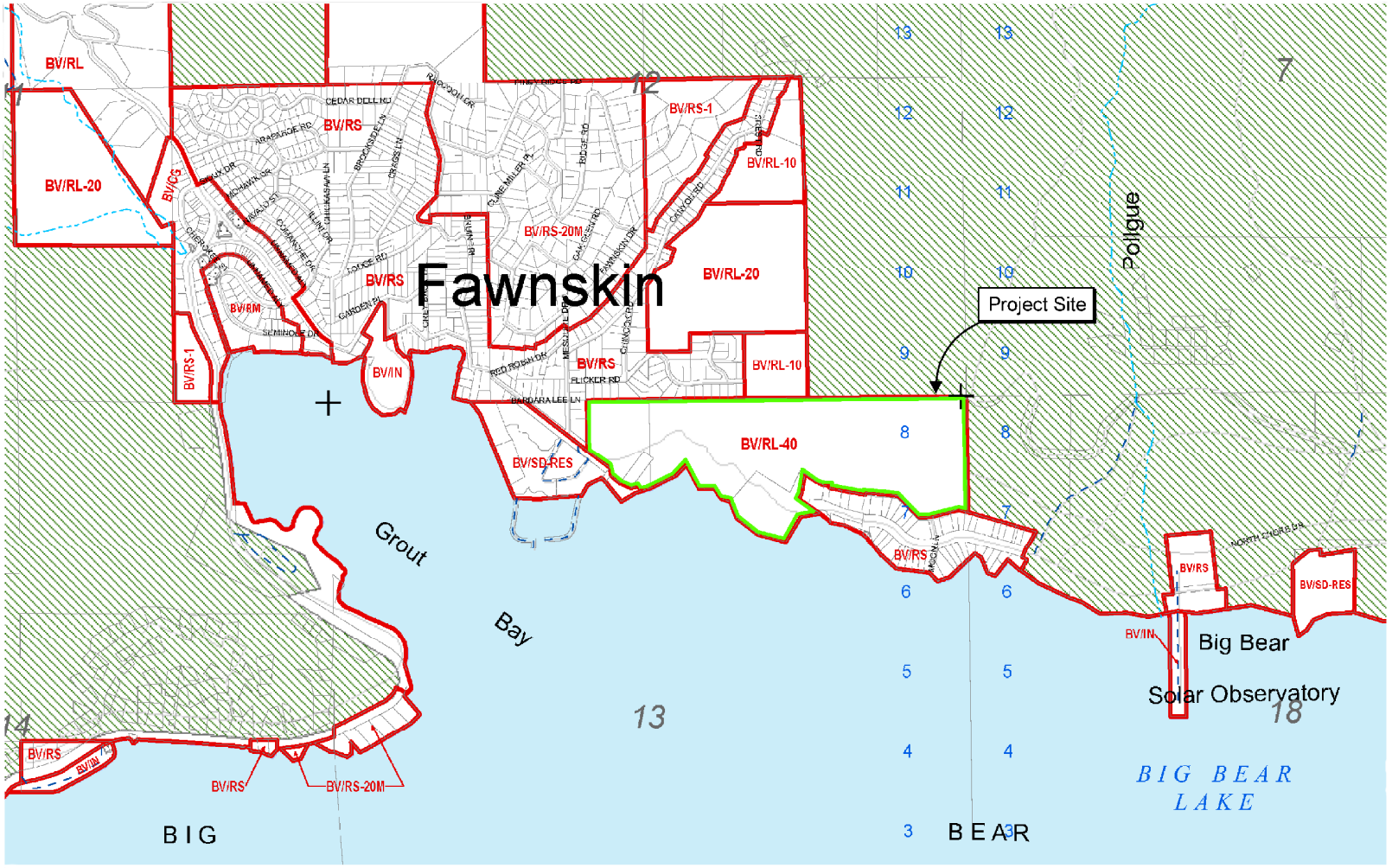
According to the Bear Valley Community Plan, a proposed project would have significant land use impacts if it would:

- Be inconsistent with the predetermined General Plan land use policy for the area;
- Be incompatible with the surrounding areas; or
- Be inconsistent with the community character.

National Environmental Policy Act

According to the National Endangered Policy Act (NEPA), a project would have significant land use impact if it would:

- Violate standards of any federal agency with jurisdiction in the project area or the surrounding area, such as the Environmental Protection Agency (EPA) or US Forest Service (USFS). The standards of these agencies should be based on the direct, indirect and cumulative impacts to ecological, aesthetic, cultural, economic, and social or health resources.



Source: San Bernardino County Land Use Plan GENERAL PLAN (2007).

Michael Brandman Associates

NORTH

Exhibit 4.5-1
County of San Bernardino Existing Land Use Designations

NEPA requires federal agencies to consider impacts of their actions on the human environment where the action is funded or permitted by a federal agency. The USFS does not have direct jurisdiction over the project site since it is privately owned; however, USFS administered land is adjacent to the project site and the USFS is funded to implement fire safety programs. Currently, fire conditions in the area are hazardous due to drought conditions and the stress on trees due to both the drought and the bark beetle infestation. Habitat modification is part of the management of forested lands designed to control fire hazard.

The USACE is another responsible agency with jurisdiction in the project area due to the proximity of the project site to Big Bear Lake. The Waterways of the U.S., which USACE presides over, include drainage channels and seasonal creeks which flow into the lake. The local drainage pattern conveys stormwater into the lake from the project site and other adjacent sites. For a comprehensive discussion of drainage issues please see Section 4.4, Biological Resources, of this Revised and Recirculated Draft EIR.

4.5.3 - Project Impact Analysis

As summarized above, the 2005 Final EIR analysis concluded that the Original Proposed Project (92 residential lots and three lettered lots for private streets) would be consistent with the planning and land use goals and policies of the County of San Bernardino for the Single Family Residential District, which is the designation for the adjacent neighborhoods to the northwest and southeast (see Exhibit 4.5-1). The 2005 Final EIR adequately addressed all the related planning issues and provided thorough reference information regarding policy in the area of Land Use including details of County policies, overlay districts, responsible agencies involved in Land Use Planning, etc. The issue of land use compatibility, particularly related to the density and intensity of the Original Proposed Project, was raised in both the comments received on the 2005 Final EIR and in the public meeting held on March 31, 2007.

There are tangible differences regarding land use and policy between the Original Proposed Project and the Proposed Alternative Project that address the issue of land use compatibility. The following is a list of revisions that have been made to the Proposed Alternative Project in order to reduce the density and intensity of the proposed land use as compared to the Original Proposed Project (Exhibit 2-4) and reduce impacts on land use compatibility. The Proposed Alternative Project (Exhibit 2-5) differs from the Original Proposed Project as follows:

- A reduction in the density and intensity of the Proposed Alternative Project from a designation of BV/RS (minimum 7,200-square-foot lots) to a designation of BV/RS-20M (minimum 20,000-square-foot lots), and reducing the number of residential lots from 92 to 50;
- While the Proposed Alternative Project has a minimum lot size of ½ acre, the average lot size is 0.90 acre, with 12 of the 50 lots being in excess of 1 acre.

- The Original Proposed Project included 31 lakefront lots located between SR-38 and the lakeshore. The Proposed Alternative Project has no lakefront lots;
- The relocation of the marina and a reduction in the number of boat slips from 103 to 55 commensurate with the reduction in the number of residential lots;
- The set aside of approximately 6 acres of the site for Open/Space, Conservation and Neighborhood Lake Access easements in two lettered lots, plus another lettered lot designated for the marina parking lot, but having Open Space value with existing perch trees that would remain in place. These areas are located adjacent to SR-38, so the Open Space component of the Proposed Alternative Project would reduce the overall intensity of use by limiting the number of residential lots that abut SR-38 to nine lots – no lots have direct access onto SR-38, but access the interior streets. In addition, a 10-acre offsite pebble plain habitat would be purchased and dedicated as a Conservation Easement;
- The reduction in the number of lots and the elimination of residential lots along the shoreline results in a reduction in the number of trees that would likely have been removed to accommodate an additional 42 houses as proposed in the Original Proposed Project;
- The deletion of the proposed realignment of a segment of SR-38 and therefore retaining up to 665 trees that would have been removed to create the realignment;
- The use of the property's shoreline as Open Space and Neighborhood Lake Access rather than as lakefront residential lots and the limitation of residential lots along SR-38 to nine would buffer and greatly reduce the impacts to public views from the lake or from the south shore of the lake;
- The reduction in the number of access points onto SR-38 from the south side of the site from five to two, with the two proposed being limited to residents using the marina parking lot; and
- The elimination of an access point from Moon Lane for public use, limiting the use of the road north of SR-38 for emergency vehicles only.

The following information will suffice to analyze the Proposed Alternative Project's relative compliance with the thresholds of significance established by CEQA, the County of San Bernardino, the Bear Valley Community, and the USFS, as well as other responsible agencies.

Physically Divide a Community

The Original Proposed Project and the Proposed Alternative Project do not physically divide a community. Although the Proposed Alternative Project includes a change in land use designation to allow increased density from RL-40 to RS-20M, the resulting neighborhood will be less dense than development in adjacent neighborhoods in the Fawnskin community.

Conflict with Applicable Land Use Plans, Policies or Regulations of an Agency with Jurisdiction over the Proposed Project

US Forest Service

San Bernardino National Forest Land Use Management Plan

The San Bernardino National Forest Land Management Plan 2006 Revision identifies a zoning map system for managing the forest. It identifies a plan for conserving a calculated percentage of the forested land it manages for wildlife habitat. This management plan does not affect private land and there are no requirements to conserve additional habitat on the project site other than unique habitat or habitat where sensitive or endangered species are present. Because the project site does contain unique and sensitive habitat, provisions have been made in this Proposed Alternative Project to conserve this land. "Lot A Open Space and Conservation Easement" is shown on the Tentative Tract No. 16136 map, revised July 2009 (Exhibit 2-5). This easement incorporates the pebble plain habitat (see Section 4.3, Biological Resources, for a comprehensive discussion of this habitat). "Lot B" is also an "Open Space, Conservation and Neighborhood Lake Access Easement" incorporated into the Proposed Alternative Project. It covers the lake shoreline area containing willow flycatcher habitat. Six of the nine Bald Eagle perches identified in the biological assessment included in the 2005 Final EIR are contained within the two easements, and none of them are in the 100-foot fire break required on the lots adjacent to the USFS land (lots 14 through 26). A potential loss of habitat could result from the take of trees required for fire control for the Proposed Alternative Project, or as a result of the bark beetle infestation (not related to the Proposed Alternative Project). The loss of tree density could reduce habitat for San Bernardino flying squirrel in the fire break area. This issue is also discussed further in Section 4.3, Biological Resources.

The Forest Land Management Plan 2006 Revision identifies high scenic integrity objectives for the area surrounding the project site; therefore the Proposed Alternative Project has the potential to negatively impact scenic vistas. A reduction of the density and intensity of land use, specifically reducing the number of residential lots from 92 to 50, deleting the 31 proposed residential lots from the shoreline and the realignment of a segment of SR-38, and the establishment of conservation easements on-site, in addition to mitigation measures identified in Sections 4.1, Aesthetics, and 4.3, Biological Resources, would adequately address the potentially significant impacts to land uses that rely on scenic resources. When compared to the Original Proposed Project, the Proposed Alternative Project has significantly reduced the visual impacts associated with site development.

Wildfires

Wildfire is the primary safety issue in the mountain area. Any residential or commercial land use could be impacted by a wildfire in the area. Implementation of the San Bernardino National Forest Plan for mechanical thinning of understory trees and provision of a dedicated water reservoir for fire-flow would reduce fire danger in the project area, although it may still be a threat. Fire conditions in the San Bernardino National Forest are more dangerous than ever, according to the Forest Service (2006). Decades of fire suppression policy, which led to growth of the understory and bark beetle infestation, is partially to blame for this unprecedented fire hazard. A USFS plan to implement an

aggressive thinning operation that would remove excess fuels to pre-fire suppression levels was finalized in 2006. Until it is implemented, the fire danger remains. Exhibit 2-4, in Section 2, Project Description, shows the required 100-foot fuel modification zone required for any development project that abuts USFS land. Residential lots 14 through 26 are affected by this requirement and must abide by the Fuel Modification Plan required to be prepared for the Proposed Alternative Project (see Section 4.7, Public Services, for this discussion).

Related to this issue, a Water Supply Feasibility Study was prepared for the Proposed Alternative Project that addresses both domestic water supply and water supply for fire flow. As part of the Proposed Alternative Project's permitting process, the Applicant must provide adequate domestic water supply as well as meeting the fire flow requirements established by the County Fire Marshall. Storage capacity for the development would be sized to meet the operational, emergency and fire flow storage requirements. Operational storage would be used to meet the hourly fluctuations in demand during maximum day conditions and must be established as 30 percent of maximum day. Emergency storage would be used to meet demands during a power outage or other emergency situation when supply sources and boosting pumps may not be available; the Big Bear DWP requirements for emergency storage are equivalent to one day of maximum day demand. Fire flow storage capacity would be equal to the fire flow demand (1,750 gpm) times its duration (two-hours). Fire Flow Storage for 1,750 gpm (based on 120 min) is 210,000 gallons (see Section 4.9, Utilities, for this discussion).

Bear Valley Community Plan

General Plan Amendment - Land Use District

The evaluation of the Proposed Alternative Project and its adherence to the Bear Valley Community Plan focuses on consistency with the predetermined General Plan land use policy for the area, compatibility with the surrounding areas, and consistency with the community character.

General Plan Consistency

The project site is designated by the County of San Bernardino Bear Valley Community Plan (BV) as Rural Living with minimum 40-acre lots (BV/RL-40). Therefore, under current conditions, the Applicant is allowed to develop one single-family dwelling unit per 40 acres. Regarding the BV/RL-40, designation, Section BV1.2.2 of the Bear Valley Community Plan states: "In recognition of several large parcels of undeveloped private property that was suitable for future residential development that occur in the unincorporated portion of the valley, residential land use designations were assigned to these properties, but with very low density of development allowed. Appropriate density of future development was intended to be considered at the time that specific development proposals were submitted. Individual projects would address the availability of adequate water supplies, traffic circulation and other infrastructure to support the individual project's proposed density of development. This concept came to be known as the "Holding Zone" approach. The 2006 Bear Valley Community Plan incorporates this strategy from the 1988 Plan. Current residential land use designations on large parcels with low development densities are reflected in such designations as

BV/RL-40 (Rural Living, 40-acre minimum parcel size) and other similar low density designations. Future development proposals will be considered based on a demonstrated ability to provide adequate infrastructure and maintain consistency with the goals and policies of the 2006 Community Plan." As such, this designation can be modified when appropriate measures and development criteria have been fulfilled. Therefore, the County may consider revisions to the land use designation for any specific property to allow more intense development if a proposed project is able to provide adequate water supplies, traffic circulation and other infrastructure to support the individual project's proposed density of development.

The Proposed Alternative Project is not consistent with the County's current Land Use District designation of BV/RL-40, which is a designation for land in rural areas where public infrastructure is not readily available and/or there are environmental constraints such as steep topography, unstable slopes, proximity to earthquake faults or other constraints. The project site is located within the community of Fawnskin adjacent to single family residential neighborhoods to the northwest and southeast. Infrastructure to support the Proposed Alternative Project is available adjacent to the site (see discussion in Section 4.9, Utilities). Therefore, a change in the Land Use District designation for the project site to allow minimum 20,000-square-foot lots is appropriate.

The Tentative Tract Map has been designed as an extension of the existing land use pattern (i.e., neighboring single-family residential uses), but with much less density (minimum 7,200-square-foot for neighboring lots and minimum 20,000-square-foot for the Proposed Alternative Project). The Proposed Alternative Project offers a cohesively planned development which would be subject to compliance with the County's administrative design guidelines and development standards specific to the BV/RS -20M District. The minimum lot size in the Proposed Alternative Project is 20,000 square feet; however, all of the proposed residential lots are at least one half acre in size, with the average lot size being 0.90 acres, and 12 lots are over 1 acre in size.

Surrounding Area and Community Character Consistency

The Bear Valley Community Plan specifies that before a General Plan Amendment can be considered for approval by the County, certain criteria must be met. These criteria are listed in the Goals and Policies section of the plan. The Proposed Alternative Project proposes a Land Use General Plan Amendment. In order to approve such an amendment, the Applicant must prove that the amendment would not have a substantial adverse impact on surrounding properties. In the Bear Valley Community Plan, BV2.2 Goals and Policies, policy BV/LU1.1 specifically states: "Require strict adherence to the Land Use Policy Map unless proposed changes are clearly demonstrated to be consistent with the community character." The elements of community character that the public have identified as important include the following: providing adequate infrastructure, promoting sustainable and beneficial economy, balance between locals and tourists, self sufficient and sustainable public services, and promoting both single family residential development and local level businesses. Because of the higher proposed density of residential units and the lack of conservation

measures, the Original Proposed Project did not meet this guideline. The Proposed Alternative Project better preserves the community character in several important ways:

- The residential density is greatly reduced (gross density is 1 house per 1.25 acres).
- Areas with highly sensitive visual resources, such as the waterfront, are not developed for residential uses and are preserved by conservation and lake access easements.
- Conservation areas are established to protect the most valuable biological resources within the Proposed Alternative Project area (the pebble plain and the bald eagle perches).
- The waterfront will become accessible to the public.

In contrast to the Original Proposed Project, the Proposed Alternative Project is compatible with the community in which it is proposed. The proposed residential unit density will be less dense than the surrounding residential properties and will create a contiguous unit of housing between the eastern and western portions of the Fawnskin community.

Consistency of land uses with the character of a community is also a discretionary, subjective judgment for the County of San Bernardino, as lead agency, to make. The Proposed Alternative Project, as revised, would not violate any community policy or standard set forth in the Community Plan or County General Plan. Policy BV/LU 1.2 C. states that "densities should not be increased unless there are existing or assured services and infrastructure, including but not limited to water, wastewater, circulation, police, and fire, to accommodate the increased densities." The Proposed Alternative Project has produced a secured water source (see Section 4.9, *Utilities*). With regard to impact on cumulative growth, the Proposed Alternative Project will not cross the growth cap threshold but will add to the margin inside which growth is acceptable, until the maximum capacity for build-out of the mountain area is reached.

Bear Valley Community Priorities

The Proposed Alternative Project is consistent with the Community Priorities set forth in the Community Plan Section BV 1.3.3 (BVCP 2007, page 13). The public identified four principal planning issues and concerns. The Proposed Alternative Project addresses these issues as follows:

A community in a forest – the natural environment prevails.

- The Applicant has redesigned the Tentative Tract Map to reduce the density and intensity of the Original Proposed Project from a designation of BV/RS (minimum 7,200-square-foot lots) to a designation of BV/RS-20M (minimum 20,000-square-foot lots) and reducing the number of residential lots from 92 to 50. Although the surrounding, existing designation is RS 7,200, allowing lot sizes of 7,200 square feet, the proposed designation for the Proposed Alternative Project, allows 20,000-square-foot lots. In fact, all residential lots in the planned subdivision are at least one half acre in size, with the average lot size being 0.90 acre, and 12 lots are over 1 acre in size. This allows the individual lot owners to develop their lots, while minimizing

grading and preserving existing trees and other natural features on their lots. In addition, no residential development will occur along the lakefront. The forest and the natural environment will be maintained through the large lot sizes and the preservation of the natural lakefront area.

Ensure no conflict in the interface between the National Forest and adjacent land uses

- The Applicant has designed the Tentative Tract Map (TTM) so that lots that abut the National Forest have adequate depth between the developable area of the site and the National Forest boundary. In addition, as required by the Forest Plan and the County Fire Marshall, owners of these sites are required to maintain a 100-foot fuel modification zone from the National Forest boundary to the interior of the sites. The 10 lots adjacent to the forest range from 0.56 acre to 2.7 acres, with an average lot size of 1.4 acres. Lot depths for the 10 lots range from 206 feet to 474 feet and average 271 feet deep.
- No direct access between the residential lots and the National Forest is proposed; no trails between the site and the forest are proposed as a part of the Proposed Alternative Project.

Conservation of natural resources and scenic beauty.

- The Applicant has proposed to set aside approximately 6 acres of the site for Open Space, Neighborhood Lake Access and Conservation easements in two lettered lots, plus another lettered lot designated for the marina parking lot, but having Open Space value with existing perch trees that would remain in place, these areas are located adjacent to SR-38 so the Open Space component of the Proposed Alternative Project would reduce the overall intensity of use by limiting the number of residential lots that abut SR-38 to nine lots – none on the lake side. In addition, a 10-acre offsite pebble plain habitat would be purchased and dedicated as a Conservation Easement. With no residential development along the lakeshore, the scenic beauty of the lakeshore is conserved. In addition, the use of the property's shoreline as Open Space/Conservation to preserve willow flycatcher habitat, and to minimize the number of trees that would be removed, would continue to provide habitat for a number of bird and mammal species that currently use the site.

  Under the Proposed Alternative Project, the Applicant's plan for natural resources retains the existing mountain character of the community by preserving viewsheds of the lake and leaving harmonious open spaces in Open Space/Conservation easements (pebble plain habitat and lakeshore). SR-38 is no longer proposed for realignment as outlined in the 2005 Final EIR, so impacts will be much less significant using this Proposed Alternative Project design. Additionally, the reduced density of proposed development and an architectural design criteria sympathetic to the mountain area allow the development to better blend into the natural surroundings.

Acknowledge service and infrastructure capacity and limitations of the area, particularly roads and water to serve future development.

- The Applicant has prepared a number of studies to determine the level of service and infrastructure required of the Proposed Alternative Project, including both a Water and Sewer Feasibility Studies (see Section 4.9, Utilities) and a Traffic Impact Analysis (TIA) (see Section 4.8, Traffic and Circulation). These studies show that the Proposed Alternative Project can provide water service for future residential development of the 50 lots via two on-site domestic wells (the third on-site well is a monitoring well) and that there is capacity within the existing sewer and wastewater treatment system to accommodate the 50 new residential lots. The TIA also shows that with implementation of design improvements and the payment of the Applicant's fair share of road/signal infrastructure, impacts on Traffic and Circulation would be less than significant.

Although the Bear Valley Community Plan expresses a need to establish development standards or conditions of approval which adequately address noise potential, no specific standards are included in the Community Plan. The County has general noise standards which apply to this land use. This Proposed Alternative Project is located in a community that has expressed great concern about noise pollution. Without specific noise control criteria, the best strategy is to employ design criteria for structures. Typical noise mitigation measures related to land use are described in Section 4.6, Noise. With overall density of the Proposed Alternative Project being 1 lot per 1.25 acres, typical noise within the subdivision will be dispersed throughout the trees and the 62.43 acres.

Southern California Association of Governments (SCAG)

SCAG's Regional Housing Needs Assessment (RHNA) has projected the housing needs of each city in the County and attempts to strategize for balanced housing availability. However, due to lack of data for the mountain area, SCAG has not yet determined housing needs in the project vicinity. Most cities in southern California are deficient in affordable housing. Clustered development of attached housing units might better satisfy the County's goals and needs for regional housing, but would require a land use designation which is not compatible with the Fawnskin community. This Proposed Alternative Project does not conflict with the County's housing goals, and single unit residential housing on large lots better fits the Bear Valley Community's needs than attached housing units. Single-family housing units under the Proposed Alternative Project are consistent with the existing land use in the general Fawnskin area.

Conflict with Adopted Environmental Plans and Goals of the Community

This threshold is addressed above in the discussion of the Bear Valley Community Plan.

Conflict with Established Recreational, Educational, Religious or Scientific Uses of the Area

The project site is designated as a residential site and does not provide direct access to recreational or educational areas. The site is not used for religious purposes and is not located near a church or other religious facility.

Recreational activities in the area consist of hiking, skiing, boating, biking, and other recreational activities consistent with a mountain community adjacent to a lake. The Proposed Alternative Project would provide a 55-slip boat dock for residents use along with a boat launch and parking lot to accommodate residents use; no public use of the boating facilities is proposed. However, the shoreline would be accessible to local residents who may arrive on foot or bicycle for fishing, bird watching, or other such passive activities. Scientific activities consisting of the study of local sensitive species such as the bald eagle, willow flycatcher and flying squirrel could continue. Also, the pebble plain habitat area and willow flycatcher habitat are being preserved in Open Space/Conservation easements on-site. Therefore, the Proposed Alternative Project would not be in conflict.

Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan

The project site is not overlain by a Habitat Conservation Plan (HCP) nor a Community Conservation Plan. Michael Brandman Associates (MBA) conducted a peer review of the biological studies prepared for the 2005 Final EIR. This review included a site visit in December 2006. During the site visit the biologist observed that willow scrub habitat on the lake shoreline had grown up considerably since the site was studied in 2002. The more extensive willow scrub habitat provides greater support for the sensitive species, willow flycatcher. Additionally, the biologist observed the northern half of the project site supports habitat suitable for San Bernardino flying squirrel. USFS studies conducted in the Fawnskin area in 1991 were positive for the presence of this species on USFS land. These existing land use changes are notable and biological surveys were conducted and mitigation measures for those species and habitats affected by this Proposed Alternative Project will be implemented (see Section 4.3, Biological Resources).

Summary of Impacts

The current land use designation of the project site is RL-40. It appears that subsequent development on adjacent and nearby private properties in the Fawnskin community has converted to a higher density on a tract by tract basis, and now the Proposed Alternative Project site is bordered on the west, northwest and southeast by development with a typical residential lot density of 7,200 square feet or greater (see Exhibit 4.5-1). To increase the density of houses in the Proposed Alternative Project to RS-20,000 would be consistent with land uses on private property adjacent to the project site.

4.5.4 - Standard Conditions and Uniform Codes

The County's Erosion and Sediment Control Ordinance applies to the mountain communities that requires submission of an Erosion Control Plan for any construction involving land disturbing activity such as grading and not just projects which excavate more than 2 feet deep or place more than 1 foot of fill, as is the standard for non-mountain areas. Special snow loads structural calculations also

apply to mountain construction. Lot and building sizes and setback requirements follow standard County guidelines, which are outlined as follows:

Proposed zoning: Residential – 20,000 square feet (RS-20,000)

- Front yard setback: 22 feet minimum, 25 feet average;
- Rear yard setback: 15 feet;
- Side yard setback: 10 feet on one side, 5 feet on the other, with a minimum of 20 feet on a corner lot; and
- Fuel modification setback at Proposed Alternative Project edge: 100 feet (this applies to lots 14 through 26).

4.5.5 - Project Design Features

Residences will be custom built by individual lot owners; the Applicant has indicated that lots will not be sold to tract homebuilders to develop. Individual lots have been laid out on the Tract Map to allow the design of future homes to individually fit on the slopes typical of the project site. As opposed to the 92 smaller lots (minimum 7,292 square feet) in the Original Proposed Project, the Proposed Alternative Project's 50 lots will be in excess of one half acre, with 22,120 square feet as the smallest lot; an average lot size of 0.90 square feet; and 12 lots over 1 acre. The Proposed Alternative Project includes a 4.91-acre open space conservation easement to preserve the pebble plain habitat, an open space / neighborhood lake access conservation easement along the lakeshore to preserve willow flycatcher habitat and bald eagle perches; as well as a third lettered lot to develop the marina parking lot and related facilities, which would also preserve existing perch trees and other mature trees near the shoreline. As noted above, a 10-acre offsite pebble plain habitat would also be purchased and dedicated as a Conservation Easement.

4.5.6 - Mitigation Measures

Mitigation measures related to land use, such as noise, traffic, and biological resources, have been incorporated into the other sections as appropriate and the direct impacts on land use will be reduced to less than significant with proper regulatory actions taken at the federal, state and local levels. The Proposed Alternative Project is considerably smaller and less intrusive than the Original Proposed Project. This Proposed Alternative Project would have little impact on Land Use and Land Use Compatibility in the Fawnskin area. No mitigation measures are recommended.

4.5.7 - Level of Significance after Mitigation

Mitigation measures incorporated as a result of other Proposed Alternative Project specific impacts will reduce land use impacts to less than significant levels. No unavoidable significant impacts related to Land Use and Planning have been identified. The analysis in this section should serve to satisfy the requirements of compliance with the San Bernardino General Plan, Land Use Amendment review standards.

4.6 - Noise

4.6.1 - Existing Conditions

The purpose of this section is to analyze Proposed Alternative Project-related noise source impacts onsite and to surrounding land uses. Mitigation measures are also recommended to minimize the noise impacts of the Proposed Alternative Project. This section evaluates short-term construction related impacts as well as long-term buildout conditions. Information in this section was obtained from the County of San Bernardino General Plan and Development Code, San Bernardino County Code, and traffic information contained in the Traffic Impact Analysis (TIA) (refer to Section 4.8, Transportation and Circulation, and Appendix E, Traffic Data). Noise impacts to biological resources are addressed in Section 4.3, Biological Resources. Refer to Appendix D, Noise Data, for additional information.

This analysis is for a Revised and Recirculated Draft Environmental Impact Report (EIR). Recirculation of the Draft EIR is based on revisions made to the Original Proposed Project description after circulation of the Final EIR in December 2005. Revisions to the Original Proposed Project associated with potential noise impacts are discussed below under Methodology and Assumptions.

The proposed Moon Camp Tentative Tract No. 16136 Residential Subdivision (Moon Camp) encompasses 62.43 acres along the northwest shore of Big Bear Lake, in the community of Fawnskin, County of San Bernardino (refer to Exhibit 2-1, Regional Location Map).

The project site is located adjacent to the north of the lake in the eastern portion of Fawnskin (refer to Exhibit 2-2, Project Vicinity Map). More specifically, the site is located in the northern half of Section 13, Township 2 North, Range 1 West, San Bernardino Base and Meridian. The project site is generally situated between Flicker Road to the north, Big Bear Lake to the south, Polique Canyon Road to the east, and Canyon Road to the west. Regional access to the site is provided via State Route 38 (SR-38), which currently bisects the property.

The Proposed Alternative Project is the subdivision of the site into 57 lots, 50 residential lots and seven lettered lots for open space, neighborhood lake access, conservation and common area, on 62.43-acres. Proposed lot sizes range from one-half acre to over 2 acres with an average lot size of 0.90 acre and 12 lots of over 1 acre. The subdivision would be developed for custom lot sales. Overall density of the Proposed Alternative Project is 1.2 acres per dwelling unit. Even though Proposed Alternative Project-specific grading activity would be limited to the construction of the interior streets and infrastructure and no grading of individual lots is proposed, for the purposes of determining the reasonably foreseeable impacts associated with full construction, this analysis assumes the construction of the future homes.

Noise Measurement

Sound is mechanical energy transmitted by pressure waves in a compressible medium, such as air. Sound can be described based on a variety of physical properties of sound waves, including the rate of oscillation (frequency), the distance between successive troughs or crests, the speed of propagation, and the pressure level of the sound wave. The latter is the descriptor commonly used to describe the loudness of sound.

A decibel (dB) is the unit of measure used to describe the loudness of sound. Because the range of sound that humans can hear is quite large, the dB scale is logarithmic, making calculations more manageable. In addition, the human ear is not equally sensitive to all sound frequencies, so "A-weighting" is used. A-weighting units are written as dBA. According to the California Department of Transportation (Caltrans), a change of 3 dBA, increases or decreases, are barely perceivable to a person with average hearing capability, while a change of 5 dBA is readily perceptible.

Noise is defined as unwanted or objectionable sound. Sound is usually considered unwanted when it interferes with normal activities, when it causes physical harm, and when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment. Because noise plays a major role both in quality of life, and also physical health, the regulation of noise is important, especially when considering residential development.

Several statistical measurements have been developed to address community noise levels over a period of time. The two most common averaged measurements are Community Noise Equivalent Level (CNEL) and Equivalent Noise Level. CNEL is a 24-hour noise descriptor which has been adjusted to account for some individuals' increased sensitivity to noise during evening and night hours. A CNEL noise measurement is obtained after adding 5.0 dB to sound levels occurring between 7 p.m. and 10 p.m., and 10.0 dB to sound levels occurring from 10 p.m. to 7 a.m. These added dBs are required by state law to account for the community's increased sensitivity during these hours.

Equivalent Noise Level (L_{eq}) is another averaged noise measurement. L_{eq} can be measured over any time period, but is typically measured for intervals of 1 minute, 15 minutes, 1 hour or 24 hours. For example, $L_{eq(24)}$ would represent a 24-hour average. When no period is specified, a 1-hour average is assumed. Table 4.6-1 shows typical A-weighted sound levels for ordinary activities and traffic.

Table 4.6-1: Sound Levels and Human Response

Noise Source (at a Given Distance)	dBA Noise Level	Response
Carrier Jet Operation	140	Harmfully loud
	130	Pain Threshold
Jet Takeoff (200 ft) Night club	120	
Unmuffled Motorcycle Auto Horn (3 ft) Rock Band Riveting Machine	110	Maximum Vocal Effort Physical Discomfort
Loud Power Mower Jet Takeoff (2,000 ft) Garbage Truck	100	Very Annoying Hearing Damage (Steady 8-hour Exposure)
Heavy Drill (50 ft) Pneumatic Drill (50 ft)	90	
Alarm Clock Freight Train (50 ft) Vacuum cleaner (10 ft)	80	Annoying
Freeway Traffic (50 ft)	70	Telephone Use Difficult
Dishwashers Air Conditioning Unit (20 ft)	60	Intrusive
Light Auto Traffic (100 ft)	50	Quiet
Living Room Bedroom	40	
Library Soft Whisper (15 ft)	30	Very Quiet
Broadcasting Studio	20	Just Audible
	10	Threshold of Hearing
Source: Beland and Branch 1970.		

It is widely accepted that the average healthy ear can barely perceive increases or decreases of 3 dBA, but that a change of 5 dBA is readily perceptible.

The following is a list of common terms and abbreviations used to describe noise:

Ambient Noise – The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

dB (Decibel) – The unit of measure that denotes the ratio between two quantities that are proportional to power; the number of decibels corresponding to the ratio of the two amounts of power based on a logarithmic scale.

dBA (A-weighted decibel) – The A-weighted decibel scale that most closely approximates the sensitivity of the human ear. The scale ranges from zero for the average least perceptible sound to about 130 for the average pain level.

LEQ (Equivalent energy level) – The average acoustic energy content of noise during the time it lasts. The LEQ of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure, no matter what time of day they occur.

CNEL (Community Noise Equivalent Level) – The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 5 decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Noise Contours – Lines drawn around a noise source indicating equal levels of noise exposure.

Sensitive Receptors – Activities or land uses that may be subject to the stress of significant interference from noise. Land uses associated with sensitive receptors often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries.

Environmental Setting

Sensitive Receptors

As defined above, receptors include land uses particularly sensitive to noise such as schools and day-care facilities, parks and recreation areas, convalescent facilities and medical facilities. Residential areas are also considered sensitive, particularly during nighttime hours. Existing sensitive receptors within the vicinity of the project site include residential uses to the east along SR-38, to the west along Canyon Road and to the north along Flicker Road. Non-residential sensitive receptors are listed in Table 4.6-2.

Table 4.6-2: Non-Residential Sensitive Receptors in the Proposed Project Area

Receptor Type	Facility Name	Address	Distance and direction from project site
School	North Shore Elementary School	765 N. Stanfield Cutoff	2.5 miles east
School	Big Bear Middle School	41275 Big Bear Boulevard	2 miles southeast
Hospital	Big Bear Valley Community Hospital	41870 Garstin Road	2.4 miles east southeast

Table 4.6 2 (cont.): Non-Residential Sensitive Receptors in the Proposed Project Area

Receptor Type	Facility Name	Address	Distance and direction from project site
Library	Big Bear Lake Branch Library	41930 Garstin Drive	*Approximately 3 miles southeast
Church	Seventh Day Adventist	340 E. North Shore Drive	6.3 miles east
Church	St. Joseph's Catholic Church of Big Bear	42242 North Shore Drive	3.9 miles east
Church	Church of Jesus Christ of Latter-Day Saints	400 E. North Shore Drive	6.3 miles east
Church	St. Columba's Episcopal Church	42324 North Shore Drive	4.4 miles east
Church	Shepherd in the Pines Lutheran Church	42450 North Shore Drive	4.1 miles east
Church	Center for Creative Living	816 W. Big Bear Boulevard	5.4 miles east
Church	First Baptist Church of Big Bear Valley	41960 Big Bear Boulevard	*Approximately 2.5 miles southwest
Church	Church of Christ	41035 Big Bear Boulevard	*Approximately 2 miles southeast
Church	Bear Valley Community Church	40946 Big Bear Boulevard	*Approximately 2 miles southeast
Church	Assembly of God	41965 Garstin Road	*Approximately 3 miles southeast
Church	Big Bear Believer's Chapel	42180 Moonridge Road	*Approximately 3 miles southeast
Church	First Church of Christ Scientist	547 Cottage Lane	*Approximately 2 miles southeast
Church	Big Bear Foursquare Church	101 E. Mojave	6.6 miles east
Church	Big Bear Christian Center	800 Greenspot	9.3 miles east
Church	Jehovah's Witnesses	255 Catalina Street	*Approximately 3.5 miles southeast
Church	United Methodist Church	1001 Holden Avenue	5.5 miles east
Church	Calvary Chapel of Big Bear	713 Stocker Road	*Approximately 2.5 miles southeast
Church	Presbyterian Church	575 Prairie Lane	*Approximately 1.5 miles south
Park	Grout Bay Park	Southwestern corner of Grout Bay	Approximately .6 mile southwest
Park	Dana Point Park	Northern side of Grout Bay	Approximately .3 mile northwest

Table 4.6 2 (cont.): Non-Residential Sensitive Receptors in the Proposed Project Area

Receptor Type	Facility Name	Address	Distance and direction from project site
Park	Meadows Edge Park	East of Bluebird Lane and adjacent to the northern side of Big Bear Lake	Approximately 1.5 miles southeast
Recreation Area	Grout Bay Recreation Area	West of Grout Bay	Approximately 1 mile southwest
Campgrounds	Serrano Campgrounds	Southwest of the intersection of Holcomb Valley Road and Highway 38	Approximately 1 mile southeast
National Forest	San Bernardino National Forest Lands	San Bernardino National Forest	Adjacent to and possibly part of project site
Lake	Big Bear Lake	San Bernardino County	Approximately .5 mile south
Source: Big Bear Chamber of Commerce website. July 2002.			

Existing Noise Levels

Noise Modeling

The existing and future roadway noise levels in the project area were projected using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) along with other roadway and Proposed Alternative Project site parameters. These parameters determine the projected impact of vehicular traffic noise and include the roadway cross-section (e.g., number of lanes), the roadway width, the average daily traffic (ADT), the vehicle travel speed, the percentages of auto and truck traffic, the roadway grade, the angle-of-view, the site conditions ("hard" or "soft"), and the percent of total ADT which flows each hour throughout a 24-hour period. Modeling is based on traffic estimates in the Revised TIA (see Appendix E).

The noise modeling was based on project details prior to 2007 revisions. As the Proposed Alternative Project revisions scaled back the project, the modeling presents a "worse-case" scenario.

Existing Noise Levels

Table 4.6-3, Existing Traffic Noise Levels, indicates the location of the 60, 65, and 70 CNEL noise contours associated with traffic along local roadways using the Federal Highway Administration (FHWA) computer model. Traffic noise along three major roadways in the project area was modeled to determine current noise levels from traffic. The roadways include North Shore Drive, Stanfield Cutoff, and Big Bear Boulevard, as described in Table 4.6-3.

Table 4.6-3: Existing Traffic Noise Levels

Roadway Segment	Average Daily Traffic	dBA at 100 Feet from Roadway Centerline[1]	Distance from Roadway Centerline to: (feet)		
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour
North Shore Drive:					
West of Stanfield Cutoff	4,750	57.17	15	19	69
East of Stanfield Cutoff	6,900	58.79	19	41	88
Stanfield Cutoff:					
North of North Shore Dr	125	32.22	0	1	2
North Shore Dr to Big Bear Blvd	5,625	57.90	17	36	77
South of Big Bear Blvd	2,250	49.15	4	9	20
Big Bear Boulevard:					
West of Stanfield Cutoff	20,500	62.87	39	85	183
East of Stanfield Cutoff	18,100	62.32	36	78	168

Traffic data obtained from the Traffic Impact Analysis (refer to Appendix E,, Traffic Data). Based on peak monthly traffic volumes.
[1] 100 feet is the assumed distance to the midpoint of a receptor rear yard.

Existing Watercraft Noise Levels

Watercraft, including boats, jet skis, etc., constitutes a periodic noise around the perimeter of Big Bear Lake. According to the Big Bear Municipal Water District, during the 2008 boating season, the average daily use of boats on the Lake was approximately 106 with peak day average use being 207 (weekends). Typical noise levels for the watercraft expected at Big Bear Lake include a ski boat 46 to 59 dBA at 100 feet, a jet ski at 103 dBA at 80 feet (http://www.ninovan.com/sound.htmlx), and outboard motor on a fishing boat at 100 dBA onboard (http://www.engineeringtoolbox.com/sound-power-level-d_58.html). Boating activity in Big Bear Lake is governed by the Big Bear Municipal Water District (BBMWD) and the California Harbors and Navigation Code. These regulations help to reduce noise as a result of boating.

4.6.2 - Regulatory Setting

State

Caltrans Vibration Exposure Thresholds

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual issued by Caltrans.

California Government Code

California Government Code Section 65302 (f) mandates that the legislative body of each county and city adopt a noise element as part of their comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of "normally acceptable," "conditionally acceptable" and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 CNEL and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial and professional uses.

Local

San Bernardino County General Plan

General Plan Noise Element Goals/Policies

The purpose of the 2007 San Bernardino County General Plan Noise Element is to limit the exposure of the community to excessive noise levels by requiring local agencies to analyze and quantify noise levels and the extent of noise exposure through actual measurement or the use of noise modeling. Countywide policies for noise include:

N 1.1. Designate areas within San Bernardino County as "noise impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Chapter 87.09 of the Development Code.

N 1.2. Ensure that new development of residential or other noise-sensitive land uses is not permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to the standards of noise-sensitive land uses include residential uses, schools, hospitals, nursing homes, places of worship and libraries.

N 1.3. When industrial, commercial, or other land uses, including locally regulated noise sources, are proposed for areas containing noise sensitive land uses, noise levels generated by the proposed use will not exceed the performance standards of Table N-2 within outdoor activity areas. If outdoor activity areas have not yet been determined, noise levels shall not exceed the performance standards listed in Chapter 83.01 of the Development Code at the boundary of areas planned or zoned for residential or other noise-sensitive land uses.

N 1.4. Enforce the state noise insulation standards (California Administrative Code, Title 24) and Chapter 35 of the California Building Code (CBC).

N 1.5. Limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and through-truck traffic to designated routes; and distribute maps of approved truck routes to County traffic officers.

N 1.6. Enforce the hourly noise-level performance standards for stationary and other locally regulated sources, such as industrial, recreational, and construction activities as well as mechanical and electrical equipment.

N 1.7. Prevent incompatible land uses, by reason of excessive noise levels, from occurring in the future.

N 2.1. The County will require appropriate and feasible on-site noise attenuating measures that may include noise walls, enclosure of noise generating equipment, site planning to locate noise sources away from sensitive receptors, and other comparable features.

N 2.2. The County will continue to work aggressively with federal agencies, including the branches of the military, the U.S. Forest Service, BLM, and other agencies to identify and work cooperatively to reduce potential conflicts arising from noise generated on federal lands and facilities affecting nearby land uses in unincorporated County areas.

The following additional policies are specific to the Mountain Region

M/N 1.1. Encourage and support strict enforcement of vehicle code regulations to reduce vehicular noise in the mountain communities.

M/N 1.2. Encourage responsible agencies to post signs near forest access roads which explain the acceptable vehicular noise levels for vehicles using those roads.

San Bernardino County Code

Title 8 of the San Bernardino County Code is the Development Code. Section 87.0901 of the Development Code sets forth performance standards designed to mitigate environmental impacts of existing and proposed land uses within a community, including noise and vibration. Performance standards protect the health and safety of workers, nearby residents and businesses; and prevent damaging effects to surrounding properties.

Noise

Areas within San Bernardino County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Tables 4.6-4 and 4.6-5, below. Exemptions from these standards include motor vehicles not under the control of the industrial use, emergency equipment, vehicles and devices, and temporary construction and repair or demolition activities taking place between the hours of 7 a.m. and 7 p.m. Monday through Saturday, excluding federal holidays.

New development of residential or other noise-sensitive land uses are not permitted in noise impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. The Development Code defines noise-sensitive land uses as residential, schools, hospitals, nursing homes, churches, and libraries.

Table 4.6-4: San Bernardino County Noise Standards - Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7 am-10 pm Leq* (dBA)	10 pm-7 am Leq* (dBA)
Residential	55	45
Professional Services	55	55
Other Commercial	60	60
Industrial	70	70
Source San Bernardino County Development Code, Section 87.09.01.		

Table 4.6-5: San Bernardino County Noise Standards - Adjacent Mobile Noise Sources

Land Use		Ldn (or CNEL) dBA	
Categories	Uses	Interior	Exterior[1]
Residential	Single and multi-family, duplex, mobile homes	45	60
Commercial	Hotel, motel, transient housing commercial retail, bank, restaurant office building, research and development, professional offices amphitheater, concert hall, auditorium, movie theater	45 50 45 45	60 NA 65 NA
Institutional/ Public	Hospital, nursing home, school classroom, church, library	45	65
Open Space	Park	NA	65

[1] An exterior noise level of up to 65 dB(A) (or CNEL) will be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation.

Source San Bernardino County Development Code, Section 87.09.01.

Vibration

Section 87.0901 of the Development Code also governs vibration and indicates that no ground vibration is allowed which can be felt without the aid of instruments at or beyond the lot line, nor is any vibration to be permitted which produces a particle velocity greater than or equal to two-tenths

(0.2) inches per second measured at or beyond the lot line. The following sources of vibration are not regulated by the Development Code, motor vehicles not under the control of the subject use and temporary construction, maintenance or demolition activities between 7:00 a.m. and 7:00 p.m. except Sundays and Federal holidays.

Comments from the March 31, 2007, Public Meeting

The following are public comments received during the March 31, 2007, Public Meeting related to

Land Use Compatibility and Noise:

- Address how 50 new homes will contribute to increased ambient noise and light in the vicinity and address the difference between owner occupied homes and rental homes; and
- Address the proposed location of the marina and impacts to surrounding properties from light, noise, trash, and other issues.

4.6.3 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on noise were derived from Appendix G of the CEQA guidelines. A significant impact would occur if the proposed project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

As the Proposed Alternative Project is not within an airport land use plan or within 2 miles of a public airport or airstrip, the last two criteria do not apply.

4.6.4 - Methodology and Assumptions

The analysis for the 2005 Final EIR was based on the noise modeling results. which were in turn based on the September 2003 TIA prepared by Kunzman Associates. An updated TIA was prepared by Urban Crossroads in June 2007 based on revisions to the Proposed Alternative Project description. This Revised and Recirculated Draft EIR noise analysis is based on the use of the September 2003 TIA, as the noise modeling was conducted with the data contained in the analysis. The December 2005 data represents worst-case conditions and impacts will be determined based on the impacts in the 2005 Final EIR. Wherever practicable, a more specific interpretation was made from the June 2007 TIA.

As discussed in Section 4.6-1 above, even though Proposed Alternative Project grading activity would be limited to the construction of the interior streets and infrastructure and no grading of individual lots is proposed, for the purposes of determining the reasonably foreseeable impacts associated with full construction, this analysis assumes the construction of the future homes.

Short-term noise impacts were evaluated based on typical noise levels associated with construction equipment, derived from existing environmental documentation. Predicted areas of potential impact were calculated assuming an average noise attenuation rate of 6 dBA per doubling of distance from the source. Long-term noise impacts were evaluated based on predicted near-term and future cumulative traffic noise levels, with and without implementation of the Proposed Alternative Project. Traffic noise levels were predicted using the FHWA roadway noise prediction model (FHWA-RD-77-108), based on data obtained from the September 2003 TIA prepared for the Original Proposed Project (92 residential lots).

Short-term groundborne vibration impacts were analyzed using typical maximum vibration levels from construction equipment expected for the Proposed Alternative Project. This equipment includes heavy-duty trucks, backhoes, and front-end loaders, mainly used during the site preparation phase.

Long-term noise impacts were based on a comparison of expected traffic volumes with and without the Proposed Alternative Project. Stationary sources of noise from recreational uses were also estimated.

Responses to Comments Received from the Public

Contribution on Increased Ambient Noise

With regard to the request from the public to address how 50 new homes would contribute to increased ambient noise in the vicinity, the Proposed Alternative Project includes 50 residential lots on approximately 62.43 acres with a minimum lot size of one half acre, average lot size of 0.90 acre, and 12 lots that are over 1 acre in size. This tract represents a very low density neighborhood in comparison to the adjacent residential neighborhood on the north, east, west and southerly boundaries of the project site, which are designated as BV/RS with minimum lots sizes of 7,200 square feet.

Therefore, the Proposed Alternative Project would likely have a negligible impact on the ambient noise environment due to its low density nature.

Comment on Owner vs. Renter Occupancy – Increased Noise Levels

With regard to the request from the public to address the difference between owner occupied homes and rental homes; the Proposed Alternative Project is the development of a tract of 50 residential lots with three lettered lots that would be sold as individual lots for custom built homes. The Proposed Alternative Project's Conditions, Covenants and Restrictions (CC&Rs) would prohibit the short term (less than 30 days) rental of any of the 50 houses within the subdivision. As a result, there would be no change in the noise levels.

Comment on Potential Noise from the Marina

With regard to the request to address the location of the marina and potential impacts associated with light, noise, trash, and other issues the proposed location of the marina is adjacent to Letter Lot C, situated between SR-38 and the lakeshore. Exhibit 2-5 shows the proposed location of the marina. At this location the dock is relatively isolated in that it would be adjacent to Lot C which would not be developed as a residential lot. The nearest existing residence is approximately 300 feet to the northeast. Therefore, the Proposed Alternative Project, as designed, would likely have a negligible impact.

4.6.5 - Impacts and Mitigation Measures

Neither the California Environmental Quality Act (CEQA) Guidelines, the County of San Bernardino General Plan, nor the Development Code provides a definition of what constitutes a substantial noise increase. A common practice has been to assume that minimally perceptible to clearly noticeable increases of 3 to 5 dBA represent a significant increase in ambient noise levels. A sliding scale is commonly used to identify the significance of noise increases, allowing greater increases at lower absolute sound levels than at higher sound levels. This approach is based on research that relates changes in noise to the percentage of individuals that would be highly annoyed by the change (FICON 1992). The significance criteria for changes in noise from project operations are as follows:

- A 3-dBA CNEL increase in noise as a result of project operations, if the existing noise level already exceeds the "Acceptable" range for the land use (55 dBA CNEL or less for daytime residential uses—see Table 4.6-4).
- A 5-dBA CNEL increase in noise as a result of project operations, if the existing noise level is in the "Acceptable" range and the resulting level remains within the "Acceptable" range for the land use.

The County Development Code does not permit any vibration which produces a particle velocity greater than or equal to two-tenths (0.2). Construction is exempt from vibration standards provided construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday.

Construction Noise

Impact Analysis

Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the Proposed Alternative Project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

Short-term noise impacts could occur during construction activities; either from the noise impacts created from the transport of workers and movement of construction materials to and from the Proposed Alternative Project site, or from the noise generated onsite during ground clearing, excavation, grading, and construction activities. Table 4.6-6 lists typical construction equipment noise levels for equipment that would be used during construction of the Proposed Alternative Project. Construction activities are carried out in discrete steps, each of which has their own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase.

Table 4.6-6: Noise Associated With Typical Construction Equipment

Construction Equipment	Maximum Noise Levels (dBA at 50 feet from source)
Grading	89
Backhoe	90
Pneumatic tools	88
Air compressor	86
Crane	83
Plate compactor	89
Concrete vibrator	85
Heavy truck	87
Source: Federal Transit Administration, 1995.	

The residential land uses to the southeast along SR-38, to the west along Canyon Road and to the north along Flicker Road, are the sensitive receptors of most concern as they relate to the Proposed Alternative Project construction noise. The edge of the project site is adjacent to the backyards of some of these residences. The noise level at the nearest residences could be greater than 90 dBA during various phases of Proposed Alternative Project construction. Noise at this level would result in a temporary increase in ambient noise levels. Although construction activities would occur during daytime hours, construction noise could still be considered substantially disruptive to residents. However, periods of intrusive noise exposure would be temporary, and noise generated by Proposed

Alternative Project construction would be partially masked by existing noise from traffic. Note that construction noise often varies significantly on a day-to-day basis, and the noise levels shown in Table 4.6-6 represents a worst-case scenario. This is a potentially significant impact.

In addition to construction noise from the project site, construction activities would also result in traffic noise along access routes to the site due from transport of equipment and workers on the site. The primary heavy equipment construction vehicles are expected to be moved on to the site once during the initial grading and would have a less than significant short-term effect on noise levels. Daily transportation of construction workers is not expected to cause a significant effect since this traffic would not be a substantial percentage of current daily volumes in the area, and would not be anticipated to increase traffic noise levels by more than 1 dBA.

According to Table 4.6-4, the maximum permitted noise exposure to residential uses from stationary sources is 55 dBA Leq from 7:00 a.m. to 10:00 p.m., and 45 dBA Leq from 10:00 p.m. to 7:00 a.m. Locally regulated sources are stationary and not pre-empted from local noise control. Pre-empted sources include vehicles operated on public roadways, railroad line operations and aircraft in flight. As stated in Table 4.6-5, the maximum permitted noise exposure to residential uses from mobile noise sources is 60 dB (Ldn or CNEL). However, an exterior noise level up to 65 dB (or CNEL) is allowed if exterior noise levels have been substantially mitigated through the implementation of best available noise reduction technology and the interior noise exposure does not exceed 45 dB (or CNEL) with windows and doors closed.

Proposed Alternative Project construction activities would temporarily increase local noise and vibration levels in the project study area and may temporarily exceed County standards. However, the County of San Bernardino Development Code exempts construction activities from adhering to County noise standards as long as construction is limited to the hours of 7:00 a.m. to 7:00 p.m., Monday to Saturday, and prohibited on Sundays or Federal Holidays. This exemption recognizes the inherent and often unavoidable noise associated with construction activities and the limited duration of such impacts. Accordingly, as long as the construction activities occur during the least noise sensitive time of the day, such activities are not subject to the noise ordinance. With adherence to the County Development Code and the noise-related policies in the County General Plan, and due to the relatively short period of construction, noise impacts are anticipated to be less than significant. Implementation of the recommended mitigation measures would ensure that impacts remain at or below less than significant levels.

Mitigation is proposed that would require the Applicant to implement construction noise control measures into the Proposed Alternative Project and comply with the County's construction noise requirements. While the closest residences would experience exterior noise levels greater than 60 dBA, construction noise is temporary and exempt from the County's land use compatibility noise standards. Therefore, implementation of the mitigation measures would be sufficient to reduce construction noise impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

NOI-1 Construction contractors shall be required to ensure that construction equipment is well tuned and maintained according to the manufacturer's specifications, and that the equipment's standard noise reduction devices are in good working order.

NOI-2 Consistent with the County of San Bernardino Development Code Section 87.0901, construction activities shall be limited as follows:

For general construction activities, the operation of construction equipment and outdoor construction or repair work shall be limited to the hours between 7:00 a.m. and 7:00 p.m., Monday through Saturday.

NOI-3 Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturers' specifications) and by shrouding or shielding impact tools. All equipment shall have sound-control devices no less effective than those provided by the manufacturer.

NOI-4 Construction activities contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from adjacent residences. Activities within these staging areas shall conform to the time limitations established in Mitigation Measure NOI-2.

Level of Significance After Mitigation

Less than significant impact.

Groundborne Vibration

Impact Analysis

This impact discussion analyzes the potential for short-term construction and long-term operational impacts due to excessive levels of groundborne vibration.

Construction Vibration

Construction activities can produce vibration that may be felt by adjacent uses. The construction of the Proposed Alternative Project would not require the use of equipment such as jackhammers and pile drivers, which are known to generate substantial construction vibration levels. The primary sources of vibration during construction would be from bulldozers, backhoes, crawler tractors, and scrapers used during site preparation. A vibratory roller would produce the greatest amount of vibration on the project site, with a 0.21 peak particle velocity (PPV) at 25 feet. As noted under the discussion of construction impacts, the nearest sensitive receptors have backyards adjacent to the project site.

Vibration impacts from construction activities associated with the Proposed Alternative Project would be a function of the construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities.

The residential land uses to the southeast along SR-38, to the west along Canyon Road and to the north along Flicker Road, are the sensitive receptors of most concern as they relate to the Proposed Alternative Project construction potential for vibration. The edge of the project site is adjacent to the backyards of some of these residences. Vibration levels could reach a peak of 0.21 at 25 feet during certain phases of Proposed Alternative Project construction. Although construction activities would occur during daytime hours, construction vibration could still be considered disruptive to residents. However, periods of vibration would be temporary, and vibration would be partially masked by existing noise from traffic. With mitigation, this is a less than significant impact.

In addition to construction vibration from the project site, construction activities may also result in vibration from traffic along access routes to the site due from transport of equipment and workers on the site. The primary heavy equipment construction vehicles are expected to be moved on to the site once during the initial grading and would have a less than significant short-term effect on vibration levels. Daily transportation of construction workers is not expected to cause a significant effect since this traffic would not be a substantial percentage of current daily volumes in the area, and would not be anticipated to increase traffic vibration to a perceptible level.

The County of San Bernardino Development Code does not permit any vibration which produces a particle velocity greater than or equal to two-tenths (0.2) inches per second measured at or beyond the lot line. However, temporary construction is exempted from these requirements as long as activities are limited to the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday.

Proposed Alternative Project construction activities would result in temporary vibration that is 0.01 above the County standards and therefore may temporarily exceed County standards. However, the County of San Bernardino Development Code exempts construction activities from adhering to County noise standards as long as construction is limited to the hours of 7:00 a.m. to 7:00 p.m., Monday to Saturday and prohibited on Sundays or federal holidays. With adherence to the County Development Code, and due to the relatively short period of construction and even shorter periods of vibration, impacts are anticipated to be less than significant. Implementation of the recommended mitigation measure would ensure that impacts remain at or below less than significant levels.

Operational Vibration

Following completion of the Proposed Alternative Project (assuming full future buildout of the residential lots), no increases in vibration would be expected. The additional residences would not be expected to attract vehicles that would result in groundborne vibration, with the possible exception of increased recreation vehicle (RV), fifth-wheel trailers, and watercraft trailers. As discussed further below, boating use is only expected to increase by less than nine boats daily, and would not cause

perceptible vibration over existing boat traffic. Vibration would not be expected from RVs or trailers as they are generally hauled and parked for several days or more, or permanently parked at a residence. Vibration impacts from the operation of the Proposed Alternative Project would be less than significant.

Level of Significance Before Mitigation
Potentially significant.

Mitigation Measures
NOI-1, NOI-2, and NOI-4, as listed above.

Level of Significance After Mitigation
Less than significant impact.

Operational Noise – Mobile Sources

Impact Analysis

Traffic

Proposed Alternative Project operation would result in increased traffic on roadways in the project area, thereby increasing vehicular generated noise near existing and proposed residential uses. Traffic conditions were analyzed utilizing existing, Year 2006, and Year 2025 traffic volumes from the September 2003 TIA and the 2005 Final EIR. Revisions to the Proposed Alternative Project include the reduction of residential lots from 92 to 50, and therefore these previous studies represent a worst-case scenario and have been determined adequate for analysis in this Revised and Recirculated Draft EIR.

For purposes of analyzing noise impacts associated with Proposed Alternative Project-related traffic volumes, this section compares the following scenarios:

1. Existing Plus Other Development Traffic Conditions (Year 2006) versus Existing Plus Proposed Alternative Project Plus Other Development Traffic Conditions (Year 2006) and;
2. Existing Plus Other Development Traffic Conditions (Year 2025) versus Existing Plus Proposed Alternative Project Plus Other Development Traffic Conditions (Year 2025).

Thus, in accordance with the Proposed Alternative Project TIA, with and without the Proposed Alternative Project scenarios were modeled for Year 2006 and Year 2025 traffic conditions.

According to the September 2003 TIA, 25 percent of the project traffic distribution would be distributed to the west of the project site. The following roadways segments to the west of the project site would receive traffic from the project site:

- North Shore Drive: North of Big Bear Boulevard and Dam (Existing ADT = 2,300);
- Rim of the World Highway: West of North Shore Drive (Existing ADT = 7,100); and

- Big Bear Boulevard: East of North Shore Drive (Existing ADT = 7,300).

Using a worst-case assumption of 220 trips (25 percent of 880 trips) along North Shore Drive, north of Big Bear Boulevard and Dam, under existing conditions, the vehicular noise level along this roadway segment would increase by 0.42 dBA[1]. Thus, noise impacts along this roadway segment would be less than significant based on the discussion of significance criteria in Section 4.6-6, Impacts and Mitigation Measures.

Therefore, since the roadway segments along Rim of the World Highway (west of North Shore Drive) and Big Bear Boulevard (East of North Shore Drive), would receive 15 percent and 10 percent of the Proposed Alternative Project traffic, respectively, coupled with the fact that traffic volumes are greater on these segments than on North Shore Drive, noise level increases along these segments as a result of Proposed Alternative Project generated traffic would be less than 0.42 dBA (see footnote 1). Thus, based on the discussion of significance criteria in Section 4.6-6, Impacts and Mitigation Measures, noise impacts along these roadway segments would be les than significant under existing and future traffic scenarios.

Year 2006 Traffic Conditions

Noise levels near the project area were modeled using with and without Proposed Alternative Project scenarios for 2006 traffic conditions to determine the location and extent of future vehicular generated noise conditions. Table 4.6-7, Exterior Noise Exposure Adjacent to Nearby Roadways, 2006, indicates the noise increase and/or decrease for the analyzed roadways within the County of San Bernardino and City of Big Bear Lake.

According to Table 4.6-7, under the "2006 Without Proposed Alternative Project" scenario, noise levels at a distance of 100 feet from centerline would range from approximately 32 to 63 dBA. The highest noise levels would occur on Big Bear Boulevard, west of Stanfield Cutoff. The lowest noise levels would occur along Stanfield Cutoff (north of North Shore Drive). Under the "2006 With Proposed Alternative Project" scenario, noise levels at a distance of 100 feet from centerline would range from approximately 32 to 63 dBA. Similar to the "2006 Without Proposed Alternative Project" scenario, the highest and lowest noise levels would occur along Big Bear Boulevard (west of Stanfield Cutoff) and Stanfield Cutoff (north of North Shore Drive), respectively. The table also compares noise levels under the "2006 Without Proposed Alternative Project" scenario with the "2006 With Proposed Alternative Project" scenario. Based on the information cited in Table 4.6-7, all roadway segments comparatively analyzed would experience a noise increase of less than 1 dBA at 100 feet from the roadway centerline. Thus, noise impacts along all the roadway segments would be less than significant based on the significance criteria in Section 4.6.6.

[1] Based on Original Proposed Project of 92 residential lots. Proposed Alternative Project of 50 residences would result in an increase of less than 0.42 dBA.

Table 4.6-7: Exterior Noise Exposure to Nearby Roadways, 2006

Roadway Segment	2006 Without Proposed Alternative Project					2006 With Proposed Alternative Project					Difference in dBA at 100 Feet from Roadway
	Average Daily Traffic	dBA at 100 Feet From Roadway Centerline[1]	Distance from Roadway Centerline (in feet) to:			Average Daily Traffic	dBA at 100 Feet From Roadway Centerline	Distance from Roadway Centerline (in feet) to:			
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	
North Shore Drive:											
West of Stanfield Cutoff	4,988	57.38	15	33	71	5,655	57.92	17	20	77	0.54
East of Stanfield Cutoff	7,245	59.00	20	42	91	7,245	59.00	20	42	91	0.00
Stanfield Cutoff:											
North of N. Shore Dr.	131	32.42	0	1	2	131	32.42	0	1	2	0.00
N. Shore Dr. to Big Bear Blvd.	5,906	58.11	17	37	80	6,573	58.58	18	40	86	0.47
South of Big Bear Blvd.	2,363	49.36	4	10	21	2,363	49.36	4	10	21	0.00
Big Bear Boulevard:											
West of Stanfield Cutoff	21,525	63.08	41	88	188	21,792	63.13	41	88	190	0.05
East of Stanfield Cutoff	19,005	62.54	37	81	173	19,405	62.63	38	82	176	0.09

Note:
[1]=100 feet is the assumed distance to the midpoint of a receptor rear yard.
Noise level models computed for 2006 scenarios utilized existing 2002 roadway cross-section data.
Source: Traffic data obtained from the 2003 TIA (refer to Appendix 15.3, Traffic Data, in the 2005 Final EIR).