

VOLUME I
Draft
Revised and Recirculated
Environmental Impact Report
Moon Camp 50-Lot Residential Subdivision, TT No. 16136
(Based on the Revised Site Plan)
Big Bear Lake, San Bernardino County, CA
SCH # 2002021105

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EXECUTIVE SUMMARY

Introduction

The County of San Bernardino is the Lead Agency under the California Environmental Quality Act (CEQA), and is responsible for preparing the Environmental Impact Report (EIR) for the Moon Camp Residential Subdivision, Tentative Tract No. 16136 project (State Clearinghouse No. 2002021105).

A Draft EIR evaluating the Original Proposed Project - a 92-lot residential subdivision with minimum 7,200-square-foot lots on 62.43 acres - was circulated for public review in 2004, and a Final EIR was prepared in 2005. The 2005 Final EIR focused primarily on changes in the environment that would result from the development of 92 residential lots along with three lettered lots to provide private streets, a 103-slip private boat marina, related infrastructure, and the realignment of State Route 38 (SR-38) that would allow the development of 31 lakefront residential lots. The 2005 Final EIR identified potential impacts that could result from the construction and operation of the Original Proposed Project and provided measures to mitigate potentially significant impacts. However, even after the implementation of all feasible mitigation measures, there were a number of impacts associated with the Original Proposed Project that would remain significant and unavoidable. These are impacts related to Aesthetics (loss of views of the lake and surrounding mountains due to the development of the 31 lakefront lots), Air Quality (short-term during construction and long-term), Biological Resources (noise and perch tree impacts on the bald eagle), and Water Supply (inconclusive groundwater supply). Note: this issue was addressed in both the Hydrology/Water Quality and Public Services/Utilities sections of the 2004 and 2005 Final EIR).

Subsequent to circulation of the 2005 Final EIR, the Applicant revised the project design/description. The revised project design/description (Proposed Alternative Project) is the subdivision of the 62.43-acre site into 50 numbered lots (residential lots) and seven lettered lots. The 50 residential lots would have a minimum lot size of 20,000 square feet and be sold individually and developed into individual custom homes. There is no realignment of SR-38 and there are no lakefront residential lots. All 50 residential lots are to the north (above) SR-38. Of the seven lettered lots, one would be designated as Pebble Plain Habitat and Open Space/Conservation (4.91 acres), one would be designated as Open Space/Neighborhood Lake Access (0.82 acre with 891 lineal feet of lakefront access), one would be developed as the marina parking lot with a boat ramp for a 55-slip private boat marina (2.90 acres), three are the existing well sites, and one is a potential reservoir site. The marina parking lot also includes some open space for the preservation of existing trees and eagle perch trees; however, because of the development of the parking lot and boat ramp, the lot would not be considered Open Space. A 10-acre off-site pebble plain habitat will also be purchased and dedicated as a Conservation Easement.

As a result of the revised design/description, the Proposed Alternative Project has eliminated the significant and unavoidable impacts associated with Aesthetics, Air Quality and Water Supply. The

unavoidable impact remaining is Biological Resources – noise and perch tree impacts to the bald eagle.

Table ES-1, Comparison between the Original Proposed Project and Proposed Alternative Project, shows the changes between the two projects.

Table ES-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
		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

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

	Original Proposed Project	Proposed Alternative Project	Change
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.			

The County of San Bernardino (County) has prepared this Revised and Recirculated Draft EIR to provide responsible and trustee agencies, interested parties, and the public with information about the potential environmental effects associated with the Revised Moon Camp 50-lot Residential Subdivision Project (Proposed Alternative Project) on 62.43 acres located in the Community of Fawnskin in San Bernardino County, California.

Purpose and Use of this Revised and Recirculated Draft EIR

A Draft EIR evaluating the Original Proposed Project - a 92-lot residential subdivision - was circulated for public review in 2004 and a Final EIR was prepared in 2005. Subsequent to the circulation of the 2004 Draft EIR and 2005 Final EIR, and partially in response to public comments received on the document, the Applicant revised the tentative tract map. As discussed in detail in this Revised and Recirculated Draft EIR, the Applicant has proposed an alternative (Proposed Alternative Project) to the 2004/2005 Original Proposed Project that substantially reduces and in some cases completely avoids the significant environmental impacts that were identified in the 2005 Final EIR. Although this Proposed Alternative Project is environmentally superior to the Original Proposed Project analyzed in the 2005 Final EIR, due to the scope of the project revisions and alterations, the County, as CEQA Lead Agency, decided to prepare this Revised and Recirculated Draft EIR to fully disclose and analyze the potential environmental impacts of this alternative. Additionally, recirculation of this EIR will further the basic purpose of CEQA to inform decision makers and the public about the potential significant environmental effects of proposed activities.

CEQA requires the preparation of an objective, full disclosure document to inform agency decision makers and the general public of the direct and indirect environmental effects of the proposed action; provide mitigation measures to greatly reduce or eliminate significant adverse effects; and identify and evaluate reasonable project alternatives that could avoid or substantially lessen one or more of such effects to the proposed project. The subject of this Revised and Recirculated Draft EIR is such a project alternative.

This Revised and Recirculated Draft EIR evaluates the potential environmental effects of the Proposed Alternative Project to the degree of specificity appropriate to the current proposed actions, as required by Section 15146 of the State CEQA Guidelines. The analysis considers the actions associated with the Proposed Alternative Project to determine the short-term and long-term effects of their implementation. This Revised and Recirculated EIR discusses both the direct and indirect impacts of this alternative, as well as the cumulative impacts associated with other past, present, and reasonably foreseeable future projects. The severity of these impacts are compared to those identified for the Original Proposed Project in the 2005 Final EIR. This Revised and Recirculated EIR also provides a comparison of the Proposed Alternative Project to the Original Proposed Project and to the project alternatives evaluated in the 2005 Final EIR.

This Revised and Recirculated Draft EIR will be circulated for public review for a period of 45 days. Upon completion of the public review period, comments received on this Revised and Recirculated Draft EIR will be considered and responses will be prepared. These comments and responses will be compiled into the Final EIR for the project. The Final EIR will consist of the 2005 Final EIR, the 2010 Revised and Recirculated Draft EIR, comments on and responses to the 2010 Revised and Recirculated Draft EIR, and the Mitigation Monitoring and Reporting Program (MMRP). The Final EIR will be compiled and submitted to the Planning Commission and Board of Supervisors for their review and consideration of the Proposed Alternative Project.

Project Overview

The following information summarizes the Proposed Alternative Project and the relationship between the Original Proposed Project and the Proposed Alternative Project that is the subject of this Revised and Recirculated Draft EIR.

Local and Regional Setting

The approximately 62.43-acre Moon Camp project site is located on the north shore of Big Bear Lake, in the unincorporated community of Fawnskin, County of San Bernardino. Exhibit 2-1, Regional Location, and Exhibit 2-2, Local Vicinity, in Section 2, Project Description, shows the location of the project site. The Big Bear Lake area is primarily a resort community where two thirds of the residences are second homes. The south shore contains commercial and recreational facilities, including ski areas, hotels and restaurants within the incorporated City of Big Bear Lake. By comparison, the north shore area, in the vicinity of the project site, is less populated and primarily residential, with a small commercial component westerly of the project site.

SR-38, also known as North Shore Drive, provides access to the project site; the road actually transects the property. The project site is roughly bounded to the north by Flicker Road, to the south by Big Bear Lake, to the east by Polique Canyon Road, and to the west by Canyon Road. In the Township and Range nomenclature system, the project site is described as in the northern half of

Section 13, Township 2 North, Range 1 West, San Bernardino Base Meridian. San Bernardino County parcel numbers for the site include APN numbers 0304-082-04, 0304-091-12, 0304-091-22, and 0304-091-21.

Surrounding Land Uses

The project site is currently undeveloped and is designated in the County of San Bernardino, Bear Valley Community Plan (BV) as Rural Living with minimum 40-acre lots (BV/RL-40). The RL-40 land use designation allows development at a density of one dwelling unit per 40 acres and 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 Bear Valley Community Plan. Table ES-2, Existing Land Use and Land Use Zoning Districts, identifies the land use category of the site and surrounding properties, as well as the current land use designations.

Table ES-2: Existing Land Use and Land Use Zoning District

Existing Land Use		Official Land Use Zoning District (Bear Valley Community Plan)
Project Site	Vacant	Rural Living (BV/RL-40). This district provides sites for open space and recreational activities, single-family homes on very large parcels and similar and compatible uses. Minimum parcel size is 40 acres; 1 dwelling unit per parcel. 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.
North	Residential (N and NW), Forest (N and NE)	Residential (BV/RS). 1 dwelling unit per 0.25 acre and a minimum lot size of 7,200 square feet. US Forest Service administered land.
South	Big Bear Lake, Residential (SE)	Floodway (FW). Uses permitted at owners risk; minimum parcel size is 10 acres. Single Residential (BV/RS). 4 dwelling units per acre, minimum lot size is 7,200 square feet.
East	Residential (SE) Forest (N and NE)	Single Residential (BV/RS). 1 dwelling unit per 0.25 acre and a minimum lot size of 7,200 square feet. Resource Conservation (BV/RC). Minimum parcel size is 40 acres; 1 dwelling unit per parcel. US Forest Service administered land.
West	Vacant, Residential (SW) Residential (W)	Special Development (BV/SD-RES). Minimum parcel size 40 acres. This District provides sites for a combination of residential uses. Single Residential (BV/RS). 4 dwelling units per acre, minimum lot size is 7,200 square feet.
Sources: Bear Valley Community Plan, 2007. County of San Bernardino Development Code, 2007.		

Project (Proposed Alternative Project) Characteristics

The Proposed Alternative Project is the subdivision of the 62.43-acre site into 50 numbered lots (residential lots) to be sold individually and developed into custom homes and seven lettered lots, of which one would be designated as Open Space/Conservation, one would be Open Space/Neighborhood Lake Access, one would be developed as the marina parking lot with a boat ramp, three are the existing well sites, and the seventh is a potential reservoir site. The marina lot also includes some open space for the preservation of existing trees/perch trees; however, because of the development of the parking lot and boat ramp, the lot would not be considered Open Space.

Table ES-1, Comparison – Original Proposed Project and Proposed Alternative Project, compares the features/changes of the Proposed Alternative Project to the Original Proposed Project. The following narrative outlines the revisions to the project description as a result of the Proposed Alternative Project.

- The Tentative Tract Map has been revised to reduce the number of lots from 95 lots to 57 lots by: 1) proposing larger lot sizes (minimum 20,000-square-foot lots – BV/RS-20M vs. BV/RS-1 residential – minimum 7,200 sf lots in the Original Proposed Project); 2) eliminating all residential development along the shoreline (a reduction of 31 lakefront lots); and 3) creating two distinct conservation areas – one covering a portion of the shoreline south of SR-38 and also providing Neighborhood Lake Access, and the other encompassing the pebble plain habitat and bald eagle perches on the west end of the site. A third lettered lot consists of the marina parking lot/boat launch ramp, which also includes some open space, but because of the proposed use, cannot be referred to as Open Space/Conservation. Finally, there are three lettered lots for the existing water well sites and one lettered lot for the potential reservoir site. As noted above, a 10-acre off-site pebble plain habitat would be purchased and dedicated as a Conservation Easement.
- The Applicant's request for a General Plan Amendment was revised to reflect the larger minimum lot size and to re-designate the site from BV/RL-40 (minimum lot size 40 acres) to BV/RS-20M (minimum lots size 20,000 square feet) instead of the Original Proposed Project's BV/RS (minimum lot size 7,200 square feet).
- The proposed private marina has been moved from the lake shore near the west side of the site to the east side of the site, and the size of the marina has been reduced from 103 slips down to 55 slips, to reflect the proposed reduction in the number of residential lots to be developed. For the proposed marina parking lot, direct access from SR-38 is required, whereas on the original Site Plan, access to the marina parking lot was from private street A.
- The realignment of a segment of SR-38 was deleted from the Proposed Alternative Project and no changes in the SR-38 configuration are now proposed. Because the State Route segment would not be realigned, the proposed removal of approximately 665 trees of the 2,760 trees identified on site would not occur. The incidence of tree removal to develop lots would also be

reduced because of the reduction in the number of lots from 92 to 50 and the larger lot sizes would allow homebuilders greater options in siting the homes to avoid trees.

- No direct access to SR-38 from any of the 50 individual lots is proposed. Access to individual lots would be from the proposed public streets (A and B). Also, with the deletion of 31 lakefront residential lots south of SR-38, the need for five points of ingress/egress from the south side has been reduced to two to allow traffic flow through the marina parking lot (refer to Exhibits 2-3 and 2-4 in Section 2, Project Description). Residents' access from the project site north of SR-38 has been reduced from three streets to two, with the third street shown on the original site plan now proposed to be used for emergency access only.
- Water service to the project site would occur via one of three possible water service alternatives.
 - Under Alternative #1, in order for the DWP to provide water service to the project site and to own and operate the Proposed Alternative Project's water system, LAFCO would have to approve an expansion of the City of Big Bear Lake's Sphere of Influence to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site. The developer would be required to construct the on-site and off-site facilities as described in the DWP Water Feasibility Study (Alda, 2007). Significant transmission improvements in the Fawnskin system would be needed to provide fire flow to the project site. Individual pressure regulators would be required for all lots with static pressures exceeding 80 psi. The three existing on-site groundwater wells would be deeded to the DWP at the time the tract map is recorded. Two of the three wells would provide the necessary water supply for the 50 lots. For expanding the existing Fawnskin Water System infrastructure, the Applicant would install all common infrastructures, including fire hydrants, and would also install the water main lines within the project site. The water improvements will primarily occur within existing paved roads.
 - Water Service Alternative #2 would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Instead, County Service Area 53C (CSA 53C) would own and operate the water facilities within the project site including the two onsite water supply wells and contract with the DWP for a water interconnection to the existing Fawnskin water system. The developer would be required to construct the same on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007). The water improvements for Water Service Alternative #2 would primarily occur within existing paved roads.
 - Under Water Service Alternative #3, instead of constructing the off-site water facilities (within the Fawnskin Water System), the Proposed Alternative Project's developer would construct an on-site reservoir (238,600 gallons) and an on-site booster station capable of providing the daily water supply flow and the required 1,750 gallons per

minute fire flow. Water Service Alternative #3 would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. The developer would also construct the same on-site (within the project site) water facilities (water main lines, fire hydrants, etc) identified in the Alda Water Feasibility Study. Existing water wells FP2 and FP4 would be connected to the on-site water system and pump their water into the 238,600 gallon on-site reservoir. The on-site booster station would include an emergency electrical generator to allow the station to operate during a power outage. The water improvements for Water Service Alternative #3 would primarily occur within the Proposed Alternative Project's paved roads and at the Proposed Alternative Project's reservoir site. The construction of the reservoir would include grading an approximately 75-foot-diameter pad for the reservoir. CSA 53C would own and operate this independent water system.

Findings of the 2005 Final EIR

This section provides a summary of the impacts of the Original Proposed Project, which was evaluated in the 2005 Final EIR.

Findings of No Impact

The 2005 Final EIR included an Initial Study used to identify potential impacts that should be evaluated in the EIR and areas where no impacts would occur. Areas where no impact would occur are as follows:

Agricultural Resources

The project site is not known to contain soils that have been designated as prime or unique agricultural soils and agricultural activities have not historically occurred at the project site. The project would not adversely impact prime or locally important agriculture, as none occurs within the project area. The entire site is zoned residential and is not under a Williamson Act contract.

Hazards and Hazardous Materials

With regard to transport of hazardous materials, as a residential subdivision, the project would not include the transport of hazardous materials. The private marina would include boat slips in a floating dock that is not considered to be an "improved marina." That is, there would be no storage of fuels or other such hazardous materials on-site. The project site is also not identified as a hazardous waste site by the County or State.

With regard to proximity to an airport or airstrip, the site is not located within an airport land use plan and the nearest airport is 3.5 miles to the east.

Land Use

The proposed project would not physically divide an established community but would be an infill project within the Fawnskin Community.

Noise

Again, with regard to proximity to an airport or airstrip, the site is not located within an airport land use plan and the nearest airport is 3.5 miles to the east. Therefore, airport related noise is not an issue.

Mineral Resources

The project site is not within an area designated by the State for locally important mineral resources and it does not lie within the County of San Bernardino's Mineral Resource Zone. The San Bernardino Mountains, however, are rich in mineral resources; known occurrences include gold, silver, lead, zinc, iron, manganese, and tungsten. Claims have been operated extensively but most have been non-productive for at least 20 years. Just north of the project site is Holcomb Valley where William F. Holcomb discovered placer gold in May 1860. The mapped placer gold area begins approximately 1.5 miles north of the project site's northeastern boundary and the nearest placer gold claim (Wayne Placers) is located in Section 8, approximately 1 mile to the northeast. One-half mile to the northeast is a site (Polique Canyon) identified as metal prospect or nonmetallic deposit, which has not been operated. All other mapped claims, mines and quarries are further to the north of the project site (Geology of San Bernardino Mountains North of Big Bear Lake, California pp 51-67). No impacts to mineral resources would occur as a result of the project's implementation.

Population and Housing

The project site is currently vacant, so development of the site with a residential subdivision would not displace existing residents or cause the need to construct replacement housing.

Transportation/Traffic

With regard to the provision of adequate parking, future homebuilders would be required to provide garage space for a minimum of two cars and provide two guest parking spaces in the driveway, per the County's Development Code.

Findings of Less Than Significant Impact

The 2005 Final EIR evaluated a range of environmental issues and concluded that the following potential impacts were less than significant and did not require mitigation:

Land Use

The proposed project conflicts with the land use plan, policies and regulations set forth in the San Bernardino County General Plan and Development Code. Analysis has concluded that impacts would be less than significant with approval of a Land Use District Change and Circulation Element Amendment (Transportation/Circulation Maps). However, because the Proposed Alternative Project

also includes a request for a general plan amendment, Land Use is evaluated in this Revised and Recirculated Draft EIR.

Recreation

Implementation of the proposed project involves the construction of recreational facilities that may have an adverse physical effect on the environment. Compliance with the Big Bear MWD standards and permit requirements would reduce impacts to a less than significant level.

Public Services

Police Protection

Project implementation could result in significant impacts with respect to police protection. Although police protection services would need to be increased as a result of the project, it is anticipated that project implementation would not require any new police facilities or the alteration of existing facilities to maintain acceptable performance objectives. The project's increase in demand for police services would be offset through project-related fees and taxes. Thus, impacts would be less than significant in this regard and no mitigation measures are recommended.

Schools

Project implementation could result in significant impacts to existing school facilities. Development of the proposed project (92 residential lots) could generate a student population increase of approximately 20 students. The District collects Developer's Fees for new construction as determined by a Developer Justification Study commissioned by the District every two years. The District has stated that it could serve the projected number of students that would be generated from the proposed project, because it has been experiencing a decline in enrollment. Thus, payment of the required Developer Fees in accordance with the latest Developer Justification Study would reduce impacts to less than significant levels and no mitigation measures are recommended.

Libraries

Implementation of the proposed project would increase the population of the service area for the Big Bear Branch Library and would impact the size and services of the library facility. The increase in population would necessitate a proportionate increase in staffing, resources and materials. The increased demand is also anticipated to create a nominal demand for additional library space at existing library facilities. Funding to improve and/or increase library facilities and resources occurs by two methods. One source of revenue is based on a resolution established by the San Bernardino County Board of Supervisors that provides a tax rate of one and one-half cents per \$100 of assessed valuation of property in the community. Second, libraries can receive funding from public libraries fund(s), administered by the State of California. Funding received from property taxes and/or State funds would reduce impacts to a less than significant level.

Utilities

Solid Waste

Development of the project area would result in increased solid waste generation. Project compliance with the Integrated Waste Management Plan (WMP) for the County of San Bernardino would reduce the amount of solid waste, which is ultimately disposed of at the Barstow Landfill and maintain potential impacts at a less than significant level.

Natural Gas

The Southwest Gas Corporation has indicated that natural gas “main” pipelines are installed in the right-of-way of SR-38 and that there is sufficient capacity in their facilities to provide natural gas service to the project area without any significant impact on the environment. As such, extensions to existing facilities within the interior tract roadways would be required in order to provide service to the proposed development. Service would be provided in accordance with the Southwest Gas Corporation’s policies and extension rules on file with the California Public Utilities Commission. Future natural gas service to the project area would require coordination with the Gas Company’s engineering department for a comprehensive plan as to levels of service required. Implementation of the proposed project would result in a less than significant impact with respect to natural gas service and no mitigation measures are required.

Electrical Service

An increased demand for electrical service would occur at the project site as a result of the proposed development. According to Bear Valley Electric Service (BVES), it is anticipated that there would be a substantial loading increase upon build-out of the proposed project (92 residential lots). BVES anticipates that impacts related to short-term construction, such as possible disruption of service, would be minimal. Additionally, tap lines to serve individual lots would be made under BVES’ tariff rules 15 and 16. Any relocation or addition of new electrical facilities and other related costs would be funded by the Applicant. Since, BVES operates under tariff rules set by the CPUC, all Project-related costs would also fall under those tariff rules. All costs would be incurred by having to maintain the existing level of service to existing BVES customers, while adding new load to the system. As mentioned above, a new distributed generation option could be required. If this is determined, placement of a generator would need to be placed on a parcel within the development or on a parcel provided by the developers.

Electrical service would potentially be impacted by the proposed project and new facilities would be required. However, the Project Applicant would be required to pay all costs/fees for the expansion of existing facilities and/or construction of new facilities to maintain the existing level of service to existing BVES customers, while adding new load to the system. Payment of BVES fees/costs would mitigate all potential impacts to less than significant levels in this regard and no mitigation measures are required.

Findings of Impacts That Can Be Mitigated to Less Than Significant

The 2005 Final EIR evaluated a range of environmental issues and concluded that a number of potentially significant impacts could be reduced to less than significant levels with implementation of mitigation measures. These impacts and measures are summarized here. For a complete summary, see the 2005 Final EIR Section 2.0, Executive Summary. This document is included on a CD at the end of this Revised and Recirculated Draft EIR.

Aesthetics/Light and Glare

Light and Glare. The proposed project would introduce additional light and glare on-site, which may affect the surrounding residents. The analysis concluded that potential impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures, including the requirement that all exterior lighting must be designed and located to avoid intrusive effects on adjacent residential properties and undeveloped areas adjacent to the project site. Low-intensity street lighting and low-intensity exterior lighting must be used throughout the development to the extent feasible. Lighting fixtures must use shielding, if necessary to prevent spill lighting on adjacent off site uses.

Biological Resources

Sensitive Species. Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to less than significant levels with the exception of the bald eagle population. Impacts to this species were considered to be significant and unavoidable due to short-term construction noise and long-term residential noise, as well as the removal of potential perch trees, particularly in the westerly portion of the project site.

Jurisdictional Waters. The proposed project would impact portions of the project site that are habitat for referenced sensitive species. Implementation of recommended mitigation measures for compensation 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 would reduce impacts to a less than significant level. Additional requirements may be required through the permitting process, depending on the quality of habitat impacted, project design, and other factors.

Cultural Resources

The proposed project may cause a significant impact to unknown archaeological and/or historic resources on-site and to unknown paleontological resources. Implementation of recommended mitigation measures to have a monitor present on-site during grading and excavation would reduce impacts to a less than significant level. Likewise, in the event human remains are discovered during grading/ construction activities, work shall cease in the immediate area of the discovery and the Project Applicant shall comply with the requirements and procedures set forth in Section 5097.98 of the Public Resources Code (PRC), including notification of the County Coroner, notification of the

Native American Heritage Commission (NAHC), and consultation with the individual identified by the NAHC to be the “most likely descendent.”

Geology and Soils

Due to site topography, development of the proposed project could result in slope failures. Development of the proposed project could also result in accelerated soil erosion, particularly during grading for building pads. The proposed project would increase the number of people/structures exposed to effects associated with seismically induced ground shaking, and during a seismic event, may be exposed to seiching of the lake. Portions of the site also contain expansive soils. Adherence to County Development Code requirements and Uniform Building Codes for development of individual sites and structures would reduce impacts to less than significant levels.

Hydrology and Water Quality

The proposed project would significantly alter drainage patterns that could result in increased erosion potential and runoff. Impacts were found to be less than significant with implementation of the project design features (i.e., the provision of adequate outlet structures, storm drains to contain flows, and proper bluff drainage). Grading, excavation, and construction activities associated with the proposed project could impact water quality due to sheet erosion of exposed soils and subsequent deposition of particles and pollutants in drainage areas. Finally, project development could result in long-term impacts to the quality of storm water and urban runoff, subsequently impacting water quality. Impacts would be reduced to less than significant levels with incorporation of the recommended mitigation measures, along with State and County Development Code requirements for implementation of Best Management Practices (BMPs) for flood control and stormwater pollution prevention during construction activities and on-going during operation.

Noise

Implementation of the proposed project would result in on-site noise associated with residential and parking lot activities and boat loading/unloading activities at the marina. The analysis concluded that stationary source impacts would be reduced to less than significant levels with adherence to the County of San Bernardino General Plan policies relating to noise level standards and recommended mitigation measures.

Implementation of the proposed project would result in increased watercraft activities on Big Bear Lake. The analysis concluded that watercraft noise impacts would be reduced to less than significant levels with adherence to Rules and Regulations established by the Big Bear Municipal Water District for Big Bear Lake.

Public Services

Fire Protection

Project implementation could result in significant impacts with respect to fire protection. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures. These include such measures as adherence to the County Fire Department's fire flow requirements, including sprinklering residences and implementation of a Fuels Management Plan (FMP) approved by the County Fire Department and Forest Service. The FMP would implement the fire safety requirements of the FS1 Fire Safety Overlay District, including a minimum setback requirement from the National Forest. In addition, any cul-de-sacs developed within the project site may not be longer than 350 feet. Finally, a Homeowner's Association or a Special District must be established to implement the FMP in common areas.

Wastewater

Project implementation would generate additional wastewater beyond current conditions. Mitigation includes the funding of all on-site and off-site sewer improvements by the Applicant, to the satisfaction of the County Service Area 53 and BBARWA, which may include replacement of existing sewer lines rather than construction of parallel lines. In addition, prior to issuance of building permits, the Applicant must provide evidence to the County of San Bernardino that County Service Area 53B and BBARWA have sufficient transmission and treatment plant capacity to accept sewage flows from the project site. The Applicant must also relocate the BBARWA 10-inch force main by installing new pipe (and/or bonding for the relocation) so that it is aligned within the south shoulder of the relocated SR-38. Finally, the Applicant shall install air release valves and vaults at high elevation points on the new force main to minimize odors. Air release valves shall be large enough to enclose 55-gallon drum carbon filters to control odors.

Recreation

Public Access. Implementation of the proposed project would not affect public access along the north shore of Big Bear Lake. However, in order to provide continuity of the bike trail in the area, the Applicant must dedicate an easement along the south side of SR-38 for the trail/path.

Transportation/Traffic

Traffic Volumes/Congestion. The intersection of Stanfield Cutoff and Big Bear Boulevard operated at above 100 percent utilization in the peak month weekday evening peak hour, during traffic counts taken in 2004. Although the project would not generate significant traffic volumes, it would contribute to the intersection utilization at the weekday evening peak hour. Year 2006 (Opening Year {at that time} for the proposed project) traffic conditions would result in an increase in traffic volumes as would the General Plan buildout year of 2025. The analysis concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff/Big Bear Boulevard, and Stanfield Cutoff/SR-38 to a less than significant level.

Traffic Hazards. Project implementation could increase hazards to vehicles, pedestrians and bicyclists due to increased traffic and the addition of eight new intersections on SR-38. The analysis concluded that with implementation of the recommended mitigation measures, impacts would be less than significant. These include restricting parking along the shoulder of SR-38, constructing turn pockets, and installing stop signs at all intersections with the highway, and limiting landscaping to increase visibility at project intersections with the highway.

Findings of Impacts That Can Not Be Mitigated to Less Than Significant Levels

The 2005 Final EIR identified potential impacts that could result from the construction and operation of the original proposed Project and that would remain significant and unavoidable after implementation of all feasible mitigation measures. These are as follows:

Aesthetics/Light and Glare

Significant and unavoidable impacts related to Aesthetics/Light and Glare were identified for viewshed alterations involving existing residents to the north, east and west of the project site. Additionally, significant and unavoidable impacts were identified for views from SR-38, a scenic highway, to the south, and from the south shore of Big Bear Lake.

Air Quality

Air quality impacts that would remain significant and unavoidable following mitigation were:

- Construction Activities: Reactive organic gases (ROG) and oxides of nitrogen (NO_x) emissions during site preparation and construction from equipment and vehicles would be significant in the short-term; and
- Project Operations: Long-term use of the project site would result in an overall increase in the local and regional pollutant load due to direct impacts from vehicle emissions, and indirect impacts from electricity and natural gas consumption. Combined mobile and area source emissions would exceed South Coast Air Quality Management District (SCAQMD) thresholds of ROG, carbon monoxide (CO) and suspended particulate matter that is 10 microns or less in diameter (PM₁₀).

Biological Resources

Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to less than significant levels with the exception of the bald eagle population. Impacts to this species were considered to be significant and unavoidable due to short-term construction noise and long-term noise residential noise, as well as the removal of potential perch trees.

Hydrology and Drainage

Due to potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit, project and cumulative impacts were considered to be significant and unavoidable.

Public Services and Utilities

Due to the inability of water providers to confirm service to the project, the proposed project was considered to be significant and unavoidable. This conclusion was further supported by the significant and unavoidable conclusion cited in 2005 Final EIR Section 5.11, Hydrology and Drainage, due to potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit.

Executive Summary of this Revised and Recirculated Draft EIR

Public Meeting on the Revised Project Description (Proposed Alternative Project)

Public agencies and members of the public made substantive comments on the 2004 Draft EIR. Following the 45-day period for circulation and public review, the County and its consultants along with the Applicant reviewed the comments and determined that substantial revisions to the Original Proposed Project would be required to adequately address many of the comments received. The Applicant has redesigned the project, substantially reducing the density and intensity of the proposed uses; deleted the realignment of SR-38 through the site; added Open Space/Conservation areas; and deleted all residential lots along the lakefront. This redesigned project (Proposed Alternative Project) is an Alternative to the Original Proposed Project that was considered in the 2004 Draft EIR and 2005 Final EIR. Table ES-1 contains a comprehensive comparison between the Original Proposed Project and the Proposed Alternative Project.

Due to the amount of time between the public review of the 2004 Draft EIR and the substantial revisions included in the Proposed Alternative Project, the County provided an opportunity for the public to review the revised plans and provide comment on the Proposed Alternative Project. The forum was a local community meeting held on March 31, 2007. Prior to the meeting, a Notice of Community Meeting was published in the local newspaper and mailed to Responsible Agencies, nearby homeowners, and other interested parties.

The Community Meeting was held at 10:00 a.m. at North Shore Elementary School, located at 765 North Stanfield Cutoff, Big Bear Lake, approximately 2 miles from the project site. Questions, comments, and concerns regarding the following issue areas were raised during the meeting and are addressed in this Revised and Recirculated Draft EIR.

Air Quality

See Section 4.2 of this Revised and Recirculated Draft EIR.

Water Quality

See Section 4.4 of this Revised and Recirculated Draft EIR.

Water Supply

See Section 4.7 of this Revised and Recirculated Draft EIR.

Geology/Soils

Geology and soils were found to be adequately addressed in the 2005 Final EIR.

Biology

See Section 4.3 of this Revised and Recirculated Draft EIR.

Land Use and Related Issues

See Section 4.5 of this Revised and Recirculated Draft EIR.

Infrastructure/Public Utilities/Public Services

See Sections 4.4, 4.7, and 4.9 of this Revised and Recirculated Draft EIR.

Public Safety

See Sections 4.7 and 4.9 of this Revised and Recirculated Draft EIR.

Project Development

See Section 2 of this Revised and Recirculated Draft EIR.

Issues Addressed in this Revised and Recirculated Draft EIR

The following issues are addressed in this Revised and Recirculated Draft EIR:

- Issues with Impacts that Remained Significant After Mitigation in the 2005 Final EIR:
 - Aesthetics;
 - Air Quality;
 - Biological Resources;
 - Hydrology and Water Quality (Groundwater); and
 - Public Utilities/Infrastructure (Water Supply).
- Issues that were Evaluated Based on Additional Comments Received in the Public Meeting:
 - Land Use;
 - Noise;
 - Public Services;
 - Transportation and Traffic; and
 - Utilities and Infrastructure.

Table ES-3, Executive Summary Matrix, provides a summary of the Proposed Alternative Project's environmental impacts, mitigation measures and the level of significance after implementation of mitigation.

Alternatives to the Original Proposed Project

In accordance with CEQA Guidelines Section 15126.6, Section 7 of the 2004 Draft EIR describes a range of reasonable alternatives to the Original Proposed Project that could feasibly attain the basic objectives of the Original Proposed Project, while evaluating the comparative merits of each alternative. The analysis focused on alternatives capable of eliminating significant adverse environmental effects or reducing them to less than significant levels, even if these alternatives would impede, to some degree, the attainment of the project objectives. In Section 7 of this Revised and Recirculated Draft EIR, potential environmental impacts of the Proposed Alternative Project are compared to impacts from the Original Proposed Project and the alternatives evaluated in the 2004 Draft EIR.

Alternatives Eliminated from Further Consideration

The 2005 Final EIR evaluated the Original Proposed Project and a reasonable range of alternatives to the Original Proposed Project and this Revised and Recirculated Draft EIR evaluates the Proposed Alternative Project. Section 7 of this Revised and Recirculated Draft EIR compares the Proposed Alternative Project to the Original Proposed Project and the alternatives previously addressed. No additional alternatives are considered and/or eliminated from further evaluation.

Alternatives Analyzed in this Revised and Recirculated Draft EIR

In addition to the Proposed Alternative Project evaluated in this Revised and Recirculated Draft EIR, the following alternatives are evaluated in relation to both the Original Proposed Project and Proposed Alternative Project. Table 7-2, Comparison of Alternatives, provides a summary of this Alternatives analysis.

No Project/No Development Alternative

Implementation of the No Project/No Development Alternative would retain the site in its current condition. None of the improvements proposed as part of the project and/or the existing designation would occur.

No Project/Existing Designation Alternative

Implementation of the No Project/Existing Designation Alternative would be in accordance with the existing Official Land Use District BV/RL-40 (40-acre minimum lot size). This Alternative would result in 1.5 residential lots on the project site. This Alternative would be less intensive than the Original Proposed Project and Proposed Alternative Project. Approximately three persons (1.5 housing units x 2.31 persons/household) would be added to the population of the Community of Fawnskin. It is further noted that in addition to a single-residential structure, other uses can be

allowed including those in the “Additional Uses” section of the County Development Code, subject to a Conditional Use Permit.

Reduced Density, Without Road Realignment and Without Marina Alternative

For the Reduced Density, Without Road Realignment and Without Marina Alternative, development of 62 residential lots and associated infrastructure would occur on the north side of the existing SR-38 alignment. SR-38 would not be realigned, no residential development (lakefront lots) would occur to the south of SR-38, and no marina would be developed. The land area south of SR-38, along the lakefront, would be retained in its current state. Approximately 143 persons (62 housing units x 2.31 persons/household) would be added to the population of the Community of Fawnskin.

Reduced Density, With Project Redesign Alternative

For the Reduced Density, With Project Redesign Alternative, development of 66 residential lots and associated infrastructure would occur on the project site. Implementation of this Alternative would include the realignment of SR-38. Twenty-one lots on the south (lake) side and 45 lots on the north side would be developed. SR-38 would be realigned to allow the 21 lakefront lots. This Alternative would include a marina facility with 72 boat slips. Approximately 152 persons (66 housing units x 2.31 persons/household) would be added to the population of the Community of Fawnskin.

Proposed Alternative Project

The Proposed Alternative Project would significantly reduce, but not eliminate, the environmental impacts associated with the construction and operation of the Original Proposed Project. Because this Alternative proposes 50 lots - a 46 percent reduction in residential density - with no lakefront residential development south of SR-38, and no realignment of SR-38, views of Big Bear Lake and the distant mountain ranges from SR-38 would not be obstructed when compared to the proposed 92-lot Original Proposed Project. In addition, fewer biological impacts would occur because less land would be disturbed and because 5.73 acres of the site would be reserved for open space/conservation. The Water Supply Report prepared for the Proposed Alternative Project has concluded that on-site wells can adequately provide water for the 50 residential lots proposed in this Alternative. The Proposed Alternative Project is environmentally superior to the 92-lot Original Proposed Project and meets most of the primary project objectives, but not to the same degree as the 92-lot Original Proposed Project.

Environmentally Superior Alternative

Based on the analysis of each alternative, the No Project – No Development alternative is the environmentally superior alternative because it eliminates all of the significant impacts of the proposed project.

CEQA Guidelines Section 15126.6 (e)(2) states the following:

If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

As shown in Table 7-2, project related impacts could be substantially reduced by not realigning SR-38. Furthermore, the impacts could also be reduced by decreasing the overall density and reducing the number of residential lots. The Applicant has amended the TTM to the standards of the 50-lot Proposed Alternative Project. While several of the alternatives are environmentally superior to the proposed 92-lot Project, the Proposed Alternative Project evaluated in detail in this Revised and Recirculated Draft EIR is the preferred alternative and the environmentally superior alternative to all but the No Project/No Development alternative and the No Project/Existing Designation Alternative for the following reasons:

- The Proposed Alternative Project has the fewest number of residential lots (50 lots – which represents a 46 percent reduction over the Original Proposed Project), and the largest minimum lot size (one half acre, with an average lot size of 0.90 acre and 12 lots over 1 acre in size);
- The Proposed Alternative Project includes 5.73 acres for Pebble Plain Habitat/Perch Tree conservation, Neighborhood Lake Access and open space as well as an area within the easternmost drainage that will be set aside for southern rubber boa habitat;
- A 10-acre off-site Pebble Plan habitat will also be purchased and dedicated as a Conservation Easement as part of the Proposed Alternative Project;
- The Proposed Alternative Project has no lakefront residential development south of SR-38 and no realignment of SR-38. As a result, views of Big Bear Lake and the distant mountain ranges from SR-38 would not be obstructed.
- The Water Supply Report prepared for the Proposed Alternative Project has concluded that on-site wells can adequately provide water for the 50 residential lots.
- The Proposed Alternative Project lessens the impacts of each impact area and reduces significant impacts to Aesthetics, Air Quality, and Water Supply to less than significant levels; and
- The Proposed Alternative Project would reduce the impacts to the greatest extent practicable, while meeting most of the project objectives and maintaining a sound and fiscally feasible project.

Therefore, the Proposed Alternative Project is the environmentally superior alternative.

Table ES-3: Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 4.1 - Aesthetics		
Short-Term Aesthetic/Light and Glare Impact	<p>A-1a Construction equipment staging areas shall be located away from existing residential uses. Appropriate screening (i.e., temporary fencing with opaque material) shall be used to buffer views of construction equipment and material, when feasible. Staging locations shall be indicated on Project Grading Plans. (MM 5.4-1a)</p> <p>A-1b All construction-related lighting associated with the construction of new roadways, improvements to SR-38 and the installation of utilities shall be located and aimed away from adjacent residential areas. Lighting shall use the minimum wattage necessary to provide safety at the construction site. A construction safety lighting plan shall be submitted to the County for review along with Grading Permit applications for the subdivision of the lots. (MM 5.4-1b)</p>	Less than significant
Long-Term Aesthetic Impact	<p>A-2a All homes shall provide a two-car garage with automatic garage doors. (MM 5.4-2a)</p> <p>A-2b New development shall be subordinate to the natural setting and minimize reflective surfaces. Building materials including siding and roof materials shall be selected to blend in hue and brightness with the surroundings. Colors shall be earth tones: shades of grays, tans, browns, greens, and pale yellows; and shall be consistent with the mountain character of the area. (MM 5.4-2b)</p> <p>A-2c Outside parking/storage areas associated with the boat dock activities shall be screened from view by the placement of landscaping and plantings which are compatible with the local environment and, where practicable, are capable of surviving with a minimum of maintenance and supplemental water. (MM 5.4-2c)</p> <p>A-2d Construction plans for each individual lot shall include the identification and placement of vegetation with the mature height of trees listed. Landscaping and plantings should not obstruct significant views, within or outside of the project, either when installed or when they reach maturity. The removal of existing vegetation shall not be required to create views. (MM 5.4-2d)</p> <p>A-2e A Note shall be placed on the Composite Development Plan stating that during construction plans review and prior to issuance of building permits for each lot, the building inspector shall refer to the Mitigation Monitoring and Compliance Program regarding these aesthetic impact mitigation measures. The building inspector shall coordinate with the Advance Planning Division the review and approval of building plans in relation to these aesthetic impact mitigation measures, prior to approval and issuance of building permits. (MM 5.4-2e)</p>	Less than significant

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Long-Term Scenic State Route Impact</p>	<p>A-3a Any entry sign for the development shall be a monument style sign compatible with the mountain character, preferably, rock or rock appearance. (MM 5.4-3a)</p> <p>A-3b Prior to recordation of the tract map (and/or any ground disturbance, whichever occurs first), landscaping or revegetation plans for lettered lots (A through D) shall be submitted to and approved by the San Bernardino County Land Use Services Department. (MM 5.4-3b)</p>	<p>Less than significant</p>
<p>Long-Term Light and Glare Impacts</p>	<p>A-4a All exterior lighting shall be designed and located as to avoid intrusive effects on adjacent residential properties and undeveloped areas adjacent to the project site. Low intensity street lighting and low-intensity exterior lighting shall be used throughout the development to the extent feasible. Lighting fixtures shall use shielding, if necessary to prevent spill lighting on adjacent off-site uses. (MM 5.4 4a)</p> <p>A-4b Lighting used for various components of the development plan shall be reviewed for light intensity levels, fixture height, fixture location and design by an independent engineer, and reviewed and approved by the County Building and Safety Division to ensure that light emitted from the proposed project does not intrude onto adjacent residential properties. (MM 5.4-4b)</p> <p>A-4c The project shall use minimally reflective glass. All other materials used on exterior buildings and structures shall be selected with attention to minimizing reflective glare. (MM 5.4-4c)</p> <p>A-4d Vegetated buffers shall be used along State Route 38 to reduce light intrusion on residential development and on forested areas located adjacent to the project site. The vegetation buffers shall be reflected on the master landscape plan submitted to and approved by the County Land Use Services Department prior to the issuance of the first grading permit. (MM 5.4-4d)</p> <p>A-4e All outdoor light fixtures shall be cutoff luminaries and only high- or low-pressure sodium lamps shall be used. (MM 5.4-4f)</p> <p>A-4f Mitigation Measures A-4a through A-4e shall be included in the Conditions, Covenants and Restrictions (CC&Rs) of the Home Owner's Association (HOA). (MM 5.4-4e)</p>	<p>Less than significant</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 4.2 - Air Quality/Green House Gas		
<p>Construction (New measures supercede those identified in the 2005 Final EIR)</p>	<p>AQ-1 Prior to construction of the project, the project proponent will provide a Fugitive Dust Control Plan that will describe the application of standard best management practices to control dust during construction. The Fugitive Dust Control Plan shall be submitted to the County and SCAQMD for approval and approved prior to construction. Best management practices will include, but not be limited to:</p> <ul style="list-style-type: none"> • For any earth moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction. • For all disturbed surface areas (except completed grading areas), apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area. • For all inactive disturbed surface areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible due to excessive slope or other safety conditions. • For all unpaved roads, water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph. • For all open storage piles, apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust. <p>AQ-2 To reduce emissions from the construction equipment within the project site, the construction contractor will:</p> <ul style="list-style-type: none"> • To the extent that equipment and technology is available and cost effective, the contractor shall use catalyst and filtration technologies. • All diesel-fueled engines used in construction of the project shall use ultra-low sulfur diesel fuel containing no more than 15-ppm sulfur, or a suitable alternative fuel. • All construction diesel engines, which have a rating of 50 hp or more, shall meet the Tier II California Emission Standards for off-road compression-ignition engines, unless certified by the contractor that such engine is not 	<p>Less than significant</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>available for a particular use. In the event that a Tier II engine is not available, Tier I compliant or 1996 or newer engines will be used preferentially. Older engines will only be used if the contractor certifies that compliance is not feasible.</p> <ul style="list-style-type: none"> • Heavy-duty diesel equipment will be maintained in optimum running condition. 	
<p>Residential Wood Burning</p>	<p>AQ-3 To reduce the emissions from wood burning apparatus; the following requirement will be placed on all new residences constructed on the proposed project's lots:</p> <ul style="list-style-type: none"> • No open-hearth fireplace will be allowed in new construction, only EPA Phase II Certified fireplaces and wood stoves, pellet stoves, and natural gas fireplaces shall be allowed. <p>AQ-4 To establish a "Good Neighbor Policy for Burning" that will further help reduce the potential for localized nuisance complaints related to wood burning; the proponent shall distribute an informational flyer to each purchaser of lots. At a minimum, the flyer will say:</p> <ul style="list-style-type: none"> • KNOW WHEN TO BURN <ul style="list-style-type: none"> - Monitor all fires; never leave a fire unattended. - Upgrade an older woodstove to one with a catalytic combustor that burns off excess pollutants. - Be courteous when visitors come to your home. Wood smoke can cause problems for people with developing or sensitive lungs (i.e. children, the elderly) and people with lung disease. • KNOW WHAT TO BURN <ul style="list-style-type: none"> - Split large pieces of wood into smaller pieces and make sure it has been seasoned (allowed to dry for a year). Burning fresh cut logs = smoky fires. - When buying wood from a dealer, do not assume it has been seasoned. - Small hot fires are more efficient and less wasteful than large fires. - Never burn chemically treated wood or non-wood materials. - Manufactured fire logs provide a nice ambience, have the least impact to air quality, and are a good choice for homeowners who use a fireplace infrequently. 	<p>Less than significant.</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>KNOW HOW TO BURN</p> <ul style="list-style-type: none"> - Proper combustion is key. Make sure your wood fire is not starved; if excess smoke is coming from the chimney or stack, the fire isn't getting enough air. - Visually check your chimney or stack 10 to 15 minutes after you light a fire to ensure it is not emitting excess amounts of smoke. - Homeowners should have woodstoves and fireplaces serviced and cleaned yearly to ensure they are working properly. 	
Section 4.3 - Biological Resources		
<p>Special Status Biological Resources</p>	<p><i>Special Status Plants and Plant Communities</i></p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> • 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; 	<p>Significant and unavoidable impacts related to Biological Resources have been identified for impacts to Bald Eagle.</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> Vegetation clearing, especially for fuel modification to reduce fire hazards to adjacent homes. <p>The HMP shall be administered 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.</p> <p>Special Status Wildlife</p> <p>BR-2 Trees and downed logs should be allowed to 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.</p> <p>BR-3 The project proponent shall have a biologist qualified with San Bernardino flying squirrel (SBFS) as a monitor during tree removal.</p> <p>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.</p> <p>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.</p> <p>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, than a replacement ratio of 2:1 shall be required and replacement trees should be 24-inch box trees. All construction or landscaping improvements, including irrigation, will</p>	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>BR-7 Vegetation removal, clearing, and grading on the project site shall 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.</p> <p>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).</p>	
<p>Sensitive Natural Communities/Habitats</p>	<p>Wildlife Impacts/Indirect Impacts</p> <p>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).</p> <p>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.</p> <p>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.”</p> <p>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</p>	<p>Less than significant impact</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>the Homeowner Association CC&Rs and a map of designated hiking trails will be provided to all residents.</p> <p>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.</p>	
Section 4.4 - Hydrology		
Flood Control/Drainage Channels	<p>HYD-1 Prior to issuance of a building permit, a program satisfactory to the County will be formulated to handle storm drain waters adequately.</p> <p>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.</p> <p>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.</p>	Less than significant impact
Water Quality Construction Impacts	<p>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.</p> <p>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</p>	Less than significant impact

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>be prepared and submitted to the Santa Ana Regional Water Quality Control Board providing notification and intent to comply with the State of California general permit. Also, a Storm Water Pollution Prevention Plan (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."</p> <p>HYD-6 At a minimum, the following shall be implemented from the California Storm Water Best Management Practice Handbook - Construction Activity:</p> <ul style="list-style-type: none"> ● 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. 	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ● 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 synthetic 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. 	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ● 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. 	
<p>Long-Term Operational Impacts</p>	<p>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.</p>	<p>Less than significant impact</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ● Prior to Grading Permit issuance, a Water Quality Management Plan (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. 	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>HYD-8 The following controls from the California Storm Water Best Management Practice Handbook – Municipal shall be employed:</p> <ul style="list-style-type: none"> ● 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. <p>HYD-9 The Water Quality Management Plan (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.</p> <p>HYD-10 Consistent with the WQMP guidelines contained in the Draft National Pollutant Discharge Elimination System (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 Permittees to provide equivalent or better treatment. Volume-based BMPs shall be designed to infiltrate or treat either:</p> <ul style="list-style-type: none"> ● 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 	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • The volume of annual runoff based on unit basin storage volume, to achieve 80 percent 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. <p>- OR -</p> <p>Flow-based BMPs shall be designed to infiltrate or treat either:</p> <ul style="list-style-type: none"> • 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. <p>HYD-11 The following are the minimum required controls to be implemented as a part of the Water Quality Management Plan (WQMP) for Urban Runoff.</p> <ul style="list-style-type: none"> • 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. 	

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> ● 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. <p>HYD-12 Storm water treatment under the NPDES Permit and the future TMDL requirements shall include the construction of treatment BMPs.</p> <p>HYD-13 Treatment BMPs appropriate for on-site use shall include infiltration trenches and basins, swales, inlet filtration, and/or water quality basins.</p> <p>HYD-14 All storm water runoff shall be treated before leaving the site to reduce pollutants in Big Bear Lake.</p>	
Infiltration Trenches and Basins	<p>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.</p>	Less than significant impact
Swales	<p>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</p>	Less than significant impact

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	the vegetation swales.	
Filtration	<p>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 on-site 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.</p>	Less than significant impact
Jurisdictional Waters	<p>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.</p> <p>HYD- 19 A 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.</p>	Less than significant impact

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 4.5 – Land Use		
	Based on the project design and mitigation measures listed in other sections of the EIR, the impacts due to the proposed zone change and GPA are considered less than significant. Furthermore, mitigation measures related to land use, such as noise, traffic, and aesthetics have been incorporated into the other sections of the Revised and Recirculated Draft EIR, as appropriate. These measures further reduce any potential land use impacts, and no additional mitigation is recommended for land use impacts.	No significant impacts
Section 4.6 - Noise		
Construction Activities	<p>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. (MM5.7-1b, modified.)</p> <p>NOI-2 Consistent with the County of San Bernardino Development Code Section 87.0901, construction activities shall be limited as follows (MM 5.7-1a modified):</p> <p style="padding-left: 40px;">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.</p> <p>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. (MM5.7-1c, modified.)</p> <p>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. (MM5.7-1d, modified.)</p>	Less than significant impact
Section 4.7 – Public Services		
Public Services	The following mitigation measures identified for the Original Proposed Project are incorporated into the Proposed Alternative Project, with revisions as appropriate:	Less than significant impact

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>Fire Protection</p> <p>PS-1 The fire flow requirement shall be 1750 gpm @ 2 hours based on homes in the range of 3,600 to 4,800 square feet, and 2,000 gpm @ 2 hours for homes greater than 4,800 square feet. (MM 5.3-1a.)</p> <p>PS-2 All residences less than 5,000 square feet shall be subject to the standard fire sprinkler requirement (NFPA 13D). Homes above 5,000 square feet shall be subject to the NFPA13R sprinkler requirement. (MM 5.3-1b, as modified.)</p> <p>PS-3 A Fuels Management Plan, with specifications, shall be prepared and subject to approval by the County of San Bernardino Fire Department and San Bernardino National Forest Service. The Fuels Management Plan shall implement the fire safety requirements of the FS1 Fire Safety Overlay District, including a 100-foot minimum setback requirement from the National Forest. The fuel modification zone shall be located entirely within the project boundaries. The minimum fuel modification zone requirements may be greater in steeper areas (up to 300 feet), as determined by the Fire Department. (MM 5.3-1c, as modified.)</p> <p>PS-4 A Homeowner’s Association shall be established to implement the Fuels Management Plan. The Fuels Management Plan shall specify any professional assistance, if necessary, to implement the action portion of the plan. The Plan shall determine if a Registered Professional Forrester is necessary for professional guidance to implement the Plan. The HOA is to be responsible for fuel modification in common areas. (MM 5.3-1e, as modified.)</p> <p>Police Protection</p> <p>No mitigation measures are recommended.</p> <p>Schools</p> <p>No mitigation measures are recommended.</p> <p>Libraries</p> <p>No mitigation measures are recommended.</p>	
Section 4.8 - Traffic		
Traffic	<p>T-1 Project Design Features recommended in the TIA shall be incorporated into the project design. These include:</p> <ul style="list-style-type: none"> • Construction of North Shore Drive at its ultimate half-section width as a Mountain Major highway from Canyon Drive to the Easterly project boundary. 	Less than significant impact

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • Installation of a stop sign control at Driveway #1 and Driveway #2. • Construction of an Eastbound Left Turn Lane at Driveway 1/North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions. • Construction of a 2nd Eastbound Through Lane at Driveway /North Shore Drive and Driveway 2/North Shore Drive for 2030 Buildout Conditions. <p>T-2 The eastbound left turn lanes at both project access points will be constructed at opening year at 100% cost to the Applicant. The Applicant shall pay fair share costs of the construction of the eastbound through lanes at both project access points for the horizon year conditions. The developer shall pay the fair share cost of \$48,921 toward the off-site traffic improvements recommended in Appendix G of the San Bernardino Congestion Management Program, 2003 Update.</p>	
Section 4.9 - Utilities		
Water	<p>The following new mitigation measures identified for the Proposed Alternative Project supersede those identified for the Original Proposed Project.</p> <p>Water</p> <p>U-1a The Moon Camp Home Owners Association shall create a “conservation guidelines” booklet that outlines the following measures:</p> <ul style="list-style-type: none"> • All indoor water fixtures shall be low flow / low flush. • Landscape shall not be irrigated between the hours of 9:00 a.m. and 6:00 p.m. • Residences, buildings, and premises shall be limited to watering landscaping every other day. • Water from landscape irrigation shall not be allowed to run off into streets or other paved areas. • Water leaks are not permitted and must be repaired as soon as practicable. • Sidewalks, paved driveways, and parkways shall not be washed off with hoses, except as required for sanitary purposes. • Washing non-commercial vehicles (cars, boats RVs) is permitted; however, it shall only be permitted with an automatic shut-off nozzle on a hose, or with a bucket. • Turf landscaping shall be limited to 500 square feet on a parcel or lot unless the water purveyor’s regulations allow additional turf area. 	Less than significant impact

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • Turf irrigation shall include an automatic controller that incorporates evapo-transpiration and rain shutoff features. • Sprinklers are only allowed on turf. All other landscape plantings must be irrigated with efficient, low water use devices, such as, drip systems or bubblers. • All outdoor irrigation systems shall be shut off and winterized between November 1st and April 1st of each year. • A model landscaping and irrigation guide shall be prepared for the tract and required by homeowner association rules. The guide shall identify the following conservation measures: Landscaping shall include a plant palate that emphasizes Xeriscape, native plants and cultivars that are suitable for the mountain climate. Plant materials shall be low water consuming and fire resistant. Irrigation shall limit aerial spray methods and shall emphasize drip and bubbler type emitters. The landscaping guidelines shall be reviewed and approved by the Land Use Services Department. • The Project shall comply with the local water agency’s “Model Landscape and Irrigation” ordinance. <p>U-1b Pumping and extraction of groundwater shall be limited to 9 acre-feet per year for Well FP-2, 0 acre-feet per year for Well FP-3 and 5 acre-feet per year for Well FP-4. If the water purveyor desires to extract groundwater from Well FP-2 in excess of 9 acre-feet per year, the purveyor shall conduct an independent environmental analysis to identify and consider potential impacts at that time.</p> <p>U-1c The grant deeds transferring ownership of Wells FP-2, FP-3 and FP-4 shall include the pumping and extraction limitations included in Mitigation Measure U-1b. The grant deeds shall also state that the water purveyor, on January 1st of each year, shall report the amount of the prior year’s annual groundwater production from Wells FP-2, FP-3 and FP-4 to the County Land Use Services Department and the County Health Department.</p>	
Wastewater	<p>The following measures identified for the Original Proposed Project are incorporated into the Proposed Alternative Project, with revisions as appropriate:</p> <p>U-2 Prior to issuance of building permits, the Applicant shall fund all on-site and off-site sewer improvements required to support development of the Project site. Such improvements shall be to the satisfaction of the County Service Area (CSA) 53B.</p>	Less than significant impact.

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>U-3 Prior to issuance of building permits, the Applicant shall provide evidence to the County of San Bernardino that the BBARWA has sufficient transmission and treatment plant capacity to accept sewage flows from the Project site.</p> <p>Solid Waste No mitigation measures are recommended</p> <p>Natural Gas No mitigation measures are recommended</p> <p>Electricity No mitigation measures are recommended</p>	
<p>Mitigation measures for the following issues that were addressed in the 2005 Final EIR for the Original Proposed Project would also apply to the Proposed Alternative Project. Several of these mitigation measures have been revised based on comments received on the project.</p>		
<p>Cultural Resources</p>		
<p>Archaeological/Historical Resources</p>	<p>5.9-1 Project-related grading, grubbing, trenching, excavations, and/or other earth-moving activities in the project area shall be monitored by a qualified archaeologist. In the event that a material of potential cultural significance is uncovered during such activities on the project site, all earth-moving activities in the project area shall cease and the archeologist shall evaluate the quality and significance of the material. Earth-moving activities shall not continue in the area where a material of potential cultural significance is uncovered until resources have been completely removed by the archaeologist and recorded as appropriate.</p>	<p>Less than significant impact.</p>
<p>Paleontological Resources</p>	<p>5.9-2a Grading shall be monitored during excavation in areas identified as likely to contain paleontologic resources by a qualified paleontological monitor. Monitoring shall be accomplished for any undisturbed subsurface older alluvium, which might be present in the subsurface. The monitor shall be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments which are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert grading equipment to allow for removal of abundant or large specimens.</p> <p>5.9-2b Recovered specimens shall be prepared to a point of identification and</p>	<p>Less than significant impact.</p>

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>permanent preservation, including washing of sediments to recover small invertebrates and vertebrates.</p> <p>5.9-2c Identification and curation of specimens into a museum repository with permanent retrievable storage shall occur for paleontological resources.</p> <p>5.9-2d A report of findings shall be prepared with an appended itemized inventory of specimens. The report shall include pertinent discussion of the significance of all recovered resources where appropriate. The report and inventory when submitted to the appropriate Lead Agency, shall signify completion of the program to mitigate impacts to paleontologic resources.</p>	
Burial Sites	<p>5.9-3 In the event human remains are discovered during grading/ construction activities, work shall cease in the immediate area of the discovery and the Project Applicant shall comply with the requirements and procedures set forth in Section 5097.98 of the Public Resources Code, including notification of the County Coroner, notification of the Native American Heritage Commission, and consultation with the individual identified by the Native American Heritage Commission to be the “most likely descendent.”</p>	Less than significant impact.
Geology and Soils		
Slope Stability	<p>GS-1 The stability of south facing cut slopes shall be analyzed as part of the design-level geotechnical investigation. Utilizing 2:1 buttressed slopes using on-site native soil materials, or constructing geotextile-reinforced soil buttresses for planned unstable cut slopes are typical engineering designs for stabilizing slopes. Either of these methods, or other methods, must be approved by the San Bernardino County Department of Building and Safety. (MM 5.10-1 of the 2005 Final EIR was modified in response to comments on the 2005 Draft EIR.)</p>	Less than significant impact.
Soil Erosion	<p>GS-2a Due to the potential for erosion associated with younger alluvial deposits within the two major on-site stream channels, increased surface drainage quantities associated with development on-site shall be directed away from the stream channels. (MM5.10-2a of the 2005 Final EIR.)</p> <p>GS2b Prior to the issuance of Grading Permits, the Project Applicant shall prepare a Soil Erosion and Sedimentation Plan for submittal and approval by the County Building and Safety Department. (MM 5.10-2b of the 2005 Final EIR.)</p>	Less than significant impact.
Ground Shaking	<p>GS-3 Engineering design for all structures and roadways shall be based on the current California Uniform Building Code at the time of project development. Construction plans shall be in accordance with seismic design standards set forth by</p>	Less than significant impact.

Table ES-3 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	the County's Development Code and Uniform Building Code. (MM 5.10-3 of the 2005 Final EIR.)	
Seiche	GS-4 Residential structures shall be located in areas which provide a minimum of five feet of freeboard above the high water line for any structures. (MM 5.10-4 of the 2005 Final EIR.)	Less than significant impact.
Expansive Soils	GS-5 Prior to grading permit issuance, a quantitative geotechnical analysis and design-level geotechnical engineering report shall be required and submitted to the County of San Bernardino Department of Building and Safety for their approval. (MM 5.10-5 of the 2005 Final EIR has been modified in response to comments on the 2005 Final EIR.)	Less than significant impact.
Recreation		
Expansion and/or Construction of Recreational Facilities	No mitigation measures are recommended	
Public Access	R-1 The proposed project shall be conditioned to provide the right of way to allow future construction of a pedal path along the south side of North Shore Drive, prior to map recordation. The right-of-way is included in the 66-foot offer of dedication included on the Site Plan. (MM 5.2-2 of the 2005 Final EIR has been modified in response to public comments to provide access.)	Less than significant impact.

SECTION 1: INTRODUCTION

1.1 - Purpose of the EIR

The County of San Bernardino is the Lead Agency under the California Environmental Quality Act (CEQA) and is responsible for preparing the Environmental Impact Report (EIR) for the Moon Camp Residential Subdivision, Tentative Tract No. 16136 Project (State Clearinghouse No. 2002021105). This EIR has been prepared in conformance with CEQA (California Public Resources Code Section 21000 et. seq.), the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et. seq.), and the rules, regulations, and procedures for implementation of CEQA, as adopted by the County of San Bernardino. The principal CEQA Guidelines sections governing content of this document are Sections 15120 through 15132 (Content of an EIR), Section 15161 (Project EIR), and Section 15088.5 (Recirculation of an EIR Prior to Certification).

The County of San Bernardino (County) has prepared this Revised and Recirculated Draft EIR to provide responsible and trustee agencies, interested parties, and the public with information about the potential environmental effects associated with the Revised Moon Camp Residential Subdivision Project (Proposed Alternative Project) on approximately 62.43 acres located in the Community of Fawnskin in San Bernardino County, California. The revised tract map shows 50 numbered lots and seven lettered lots for Open Space/Conservation, a parking lot and boat ramp for the proposed 55-slip marina, three water well sites, and a potential reservoir site. The Fawnskin Community is located in the San Bernardino Mountains along the north shore of Big Bear Lake.

As described in the CEQA Guidelines Section 15121(s), an EIR is a public information document that assesses potential environmental impacts of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid adverse impacts. A Final EIR evaluating the original Moon Camp 92-lot residential subdivision (Original Proposed Project) was completed in December 2005, in compliance with CEQA (Public Resources Code §§21000 et seq.), and the CEQA Guidelines (California Code of Regulations (CCR), Title 14, §§15000 et seq.).

Subsequent to the completion of the 2005 Final EIR, and in response to public comments received on the document, the Applicant revised the project. As discussed in detail below, the Applicant revised numerous aspects of the project, including reducing the proposed density by 46 percent, increasing the minimum lot size to one-half acre, eliminating development south of State Route 38 (SR-38) along the shore of Big Bear Lake, including neighborhood access to the lakefront, eliminating the realignment of SR-38, preserving 5.73 acres of open space areas to conserve valuable biological habitat, purchasing/conserving 10 acres of offsite Pebble Plain, and reducing the size of and relocating the Marina.

As discussed in detail in this Revised and Re-circulated Draft EIR, the Applicant has proposed an alternative (i.e., Proposed Alternative Project) to the original project that substantially reduces and

avoids (in some cases) the significant environmental impacts that were identified in the 2005 Final EIR. Although the Proposed Alternative Project is environmentally superior to the Original Proposed Project analyzed in the 2005 Final EIR, due to the scope of the project revisions and alterations, the County, as CEQA Lead Agency, has decided to prepare this Revised and Recirculated Draft EIR to fully disclose and analyze the potential environmental impacts of this alternative. Additionally, recirculation of the EIR will further the basic purpose of CEQA to inform decision makers and the public about the potential significant environmental effects of proposed activities.

This Revised and Recirculated Draft EIR evaluates the potential environmental effects of the Proposed Alternative Project to the degree of specificity appropriate to the current proposed actions, as required by Section 15146 of the CEQA Guidelines. The analysis considers the actions associated with the Proposed Alternative Project, to determine the short-term and long-term effects of its implementation. This EIR discusses both the direct and indirect impacts of the Proposed Alternative Project, as well as the cumulative impacts associated with other past, present, and reasonably foreseeable future projects. The severity of these impacts are compared to those identified for the Original Proposed Project (92 lots) that was evaluated in the 2005 Final EIR. This EIR also provides a comparison of the Proposed Alternative Project to the Original Proposed Project and the alternatives evaluated in the 2005 Final EIR.

CEQA requires the preparation of an objective, full disclosure document to inform agency decision makers and the general public of the direct and indirect environmental effects of a proposed action; provide mitigation measures to significantly reduce or eliminate significant adverse effects; and identify and evaluate reasonable alternatives that could avoid or substantially lessen one or more of such effects to the proposed project. The subject of this Revised and Recirculated Draft EIR is such an alternative project.

1.2 - Compliance with CEQA

For the convenience of the EIR reviewer, the entire 2005 Final EIR, including technical appendices, is included in this Revised and Recirculated Draft EIR on a CD at the back of the document. References are made throughout this document to that previous document, which can be viewed on the attached CD.

Like the 2005 Final EIR, this Revised and Recirculated Draft EIR is subject to a 45-day review period by responsible and trustee agencies and interested parties. In accordance with the provision of Sections 15085(a) and 15087(a)(1) of the CEQA Guidelines, as amended, the County of San Bernardino, serving as the Lead Agency, will: 1) publish a notice of availability of a Draft Recirculated EIR in newspapers of local and general circulation, respectively; and, 2) will prepare and transmit a Notice of Completion (NOC) to the State Clearinghouse. (Proof of publication is available at the offices of the Lead Agency.)

Any public agency or members of the public desiring to comment on the Revised and Recirculated Draft EIR must submit their comments in writing to the individual identified herein prior to the end of the public review period. Upon the close of the public review period, the Lead Agency will then proceed to evaluate and prepare responses to all relevant comments received from both citizens and public agencies during the public review period.

Comments on the Revised and Recirculated Draft EIR should be addressed to the following:

County of San Bernardino
Land Use Services Department
385 North Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182
Attention: Matt Slowik, Senior Planner

The 2010 Final EIR will consist of the 2005 Final EIR, the 2010 Revised and Recirculated Draft EIR, comments on and responses to the 2010 Revised and Recirculated Draft EIR, and the Mitigation Monitoring and Reporting Program (MMRP). After the Final EIR is completed and at least 10 days prior to action, a copy of the specific response to comments made by public agencies on this Revised and Recirculated Draft EIR will be provided to the respective agency.

1.3 - EIR Scoping Process

In compliance with the CEQA Guidelines, the County of San Bernardino has taken steps to maximize opportunities to participate in the environmental process. During the preparation of the 2004 Draft EIR, an effort was made to contact various federal, State, regional, and local government agencies and other interested parties to solicit comments and inform the public of the proposed project. This included the distribution of an Initial Study and Notice of Preparation (NOP), publication and posting of the NOP, and a Public Scoping Meeting that was held on March 2, 2002.

1.3.1 - Initial Study

In accordance with Section 15063(a) of the CEQA Guidelines, as amended, the County undertook the preparation of an Initial Study. The Initial Study determined that a number of environmental issue areas may be impacted by the construction and build-out of the project and that the 2004 Draft EIR should address the project's potentially significant impacts on a variety of environmental issue areas. These issue areas were addressed in Section 5.0, Description of Environmental Setting, Impacts and Mitigation Measures, of the 2005 Final EIR.

Based on the Initial Study, no impacts upon agricultural resources or mineral resources were anticipated to result from the proposed development. As a result, these issues were addressed in Section 10.0, Effects Found Not to be Significant, of the 2004 Draft EIR.

1.3.2 - Notice of Preparation

Pursuant to the provision of Section 15082 of the CEQA Guidelines, as amended, the County of San Bernardino circulated a NOP via newspaper publication and local posting to public agencies, special districts, and members of the public requesting such notice, for a 30-day period commencing February 21, 2002, and ending March 22, 2002. The purpose of the NOP was to formally convey that the County was preparing a Draft EIR for the Moon Camp Tentative Tract Map No. 16136 and General Plan Land Use Amendment, and that as Lead Agency, was soliciting input regarding the scope and content of the environmental information to be included in the EIR. The Initial Study was circulated with the NOP. The NOP, Initial Study, and comments received in response to the NOP are provided in Appendices 15.1 and 15.2 of the 2004 Draft EIR.

1.3.3 - Early Consultation (Scoping)

During the NOP circulation period, the County of San Bernardino advertised a public scoping meeting. The meeting was held on March 2, 2002, at the North Shore Elementary School at Big Bear Lake and was intended to facilitate public input. The meeting was held with the specific intent of affording interested individuals/groups and public agencies and others a forum in which to orally present input directly to the Lead Agency in an effort to assist in further refining the intended scope and focus of the Project EIR as described in the NOP and Initial Study.

NOP and Scoping Results

The specific environmental concerns raised by those who commented and responded to the NOP for the project were enumerated in Section 1.0, Introduction, of the 2005 Final EIR. The location within the document where these comments were addressed was also identified. The NOP responses, and written comments received at the meeting are contained in Appendix 15.2 of the 2005 Final EIR.

1.3.4 - 2005 Final EIR Findings of Significant Impacts

The 2005 Final EIR focused primarily on changes in the environment that would result from the proposed 92-lot residential subdivision, 100-slip marina, related infrastructure, and the realignment of SR-38. The EIR identified potential impacts that could result from the construction and operation of the Original Proposed Project and provided measures to mitigate potential significant impacts. Those impacts that would remain significant and unavoidable after implementation of all feasible mitigation measures were also identified. They are as follows:

Aesthetics/Light and Glare

Significant and unavoidable impacts related to Aesthetics/Light and Glare were identified for viewshed alterations involving existing residents to the north, east and west of the project site. Additionally, significant and unavoidable impacts were identified for views from SR-38, a scenic highway, to the south and from the south shore of Big Bear Lake.

Air Quality

Air quality impacts that would remain significant and unavoidable following mitigation were the following:

- **Construction Activities:** Reactive Organic Gases (ROG) and Nitrogen Oxides (NO_x) emissions during site preparation and construction from equipment and vehicles would be significant in the short-term; and
- **Project Operations:** Long-term use of the project site would result in an overall increase in the local and regional pollutant load due to direct impacts from vehicle emissions, and indirect impacts from electricity and natural gas consumption. Combined mobile and area source emissions would exceed South Coast Air Quality Management District (SCAQMD) thresholds of ROG, carbon monoxide (CO) and 10 micron or less particulate matter (PM₁₀).

Biological Resources

Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to less than significant levels with the exception of the bald eagle. Impacts to this species were considered significant and unavoidable due to short-term construction noise and long-term residential noise, as well as the removal of potential perch trees.

Hydrology and Drainage

Due to inconclusive testing of potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit, project and cumulative impacts were considered significant and unavoidable.

Public Services and Utilities

Due to the inability of water providers to confirm service to the project, the impacts of the Original Proposed Project as well as cumulative impacts on public services and utilities were considered to be significant and unavoidable. This conclusion was further supported by the significant and unavoidable conclusion cited in Section 5.11, Hydrology and Drainage, due to inconclusive testing of potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit.

Revised Project Description

The findings of the 2005 Final EIR indicated that there would be a number of project-related impacts that remained significant and unavoidable. Subsequent to the distribution of the 2005 Final EIR, and partially in response to public comments received on the document, the Applicant made the decision to look at additional alternatives that would reduce the impacts that remained significant and unavoidable and to address other concerns raised in comments received on the 2004 Draft EIR. Table 1-1 of this Revised and Recirculated Draft EIR shows a brief comparison between the Original Proposed Project and the Proposed Alternative Project. Please refer to Section 2, Project Description, for a complete discussion.

Table 1-1: Comparison between the 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 less than 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 – 4.91-acre Open Space/Conservation (OS/C) easement to preserve Pebble Plain habitat	4.91 acres of Open Space for habitat conservation
	Lot B – a 1.4-acre strip of land between State Route 38 and the private street south of the highway	Lot B – 0.82-acre/891 lineal feet strip of land to remain OS/C between State Route 38 and the lakefront for open space and aesthetics	0.82 acre / 891 lineal feet of Open Space for neighborhood access and preservation of lake views
	Lot C – a gated entrance, south of State Route 38, a parking lot and access to the marina	Lot C – 2.90-acre strip of land to be used as an HOA parking lot and boat launch and open space	Similar size of area and proposed uses
		Lot 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	Common areas within lettered lots would be maintained by a homeowner’s association	No change
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
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.			

1.3.5 - 2007 Public Meeting on the Revised Project Description

Due to the amount of time between the public review of the 2004 Draft EIR and the substantial revisions to the Tentative Tract Map, the County provided an opportunity for the public to review the revised plans and provide comment on the Proposed Alternative Project. The forum was a local community meeting held on March 31, 2007. Prior to the meeting, a Notice of Community Meeting was published in the local newspapers and mailed to Responsible Agencies, nearby homeowners, and other interested parties.

The Community Meeting was held at 10:00 a.m. at North Shore Elementary School, located at 765 North Stanfield Cutoff, Big Bear Lake, approximately 2 miles from the project site. In addition to providing comments at the meeting, residents were given an additional two weeks to provide comments, in writing, to the County. Comments received at this meeting are enumerated within each section of the Revised and Recirculated Draft EIR. With this information, the County determined the scope of this Revised and Recirculated Draft EIR.

1.3.6 - Focus of the Revised and Re-circulated Draft EIR

Based on the comment letters received on the 2004 Draft EIR, the findings of the 2005 Final EIR and the applicants revised proposed project, the County determined that a Revised and Re-circulated Draft EIR must be prepared that would accomplish the following:

1. Conduct technical studies for the Proposed Alternative Project to update existing studies, particularly focused surveys for sensitive species and habitat; and water supply;
2. Evaluate the Proposed Alternative Project against the findings of the 2005 Final EIR for those impacts that remained significant and unavoidable impacts after mitigation measures have been implemented; and
3. Evaluate the Proposed Alternative Project in relation to the original proposed project and alternatives considered in the 2005 Final EIR.

The Revised and Recirculated Draft EIR focuses on the Proposed Alternative Project in light of the findings of the 2005 Final EIR regarding environmental issues where impacts remained significant and unavoidable, and in response to comments received at the 2007 public meeting. These are as follows:

1. **Aesthetics** - views of the site from adjacent residential uses and the state highway, and from the lake.
2. **Air Quality** - update air quality analysis to include consistency with 2007 Air Quality Management Plan (AQMP) and to address global climate change.
3. **Biological Resources** - conduct new surveys for sensitive species and to assess the pebble plain habitat on-site.

4. **Hydrology and Water Quality** - address potential water quality impacts to Big Bear Lake from runoff from the site.
5. **Land Use and Planning** - evaluate the Proposed Alternative Project using the 2007 General Plan and Development Code.
6. **Noise** - address construction noise and long-term residential noise from the project site.
7. **Public Services and Utilities** - address emergency evacuation of the site, provide an analysis of water supply and wastewater treatment.
8. **Traffic and Circulation** - update the traffic study to address revisions to the project's circulation plan and to capture the most recent cumulative projects in the vicinity.
9. **Cumulative Impacts** - evaluate potential environmental effects of the Proposed Alternative Project, in conjunction with other proposed or recently approved projects in the vicinity, that together could result in significant and unavoidable cumulative impacts.
10. **Alternatives** - evaluate the Proposed Alternative Project, comparing the potential environmental effects to the Original Proposed Project and other alternatives identified in the 2005 Final EIR.

This Revised and Recirculated Draft EIR does not include an additional evaluation of the impacts of the Proposed Alternative Project in the areas of Recreation, Cultural Resources and Geology and Soils. The 2005 Final EIR concluded that the Original Proposed Project analyzed therein would not result in any potentially significant impacts with regard to those specific environmental areas. Considering the Proposed Alternative Project represents a development that is less intense, compared to the Original Proposed Project analyzed in the 2005 Final EIR, the findings made in that document are adequate and show that the revised Proposed Alternative Project would similarly have less than significant impacts

1.4 - Authority under CEQA

CEQA Section 21002.1(a) states that “the purpose of an EIR is to identify the significant effects of a project on the environment, to identify alternatives to the Project, and to indicate the manner in which such significant effects can be mitigated or avoided.”

This EIR does not express County policy about the desirability of the proposed project, but is an informational document to be used by decision makers, public agencies, and the general public in their review of the requested entitlements to develop the project. During the development review process, the County, as Lead Agency, must consider implementation of all feasible mitigation measures and alternatives developed to substantially lessen anticipated environmental impacts of the project. To that end, the Proposed Alternative Project represents an Alternative to the Original Proposed Project and should be reviewed within that context.

CEQA Guidelines Section 15088.5 discusses the requirements for the recirculation of an EIR prior to certification. Under subsection (a), “a lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification.” After reviewing the proposed revisions to the Moon Camp residential subdivision project, the County of San Bernardino determined that these revisions represent a new Alternative to the Original Proposed Project and that these revisions constituted significant new information that should be made public.

As indicated in Section 1.1.2, above, the Proposed Alternative Project analyzed in this Revised and Recirculated Draft EIR substantially differs from the Original Proposed Project that was analyzed in the 2005 Final EIR. The main revisions to the project are: (1) revision of Tentative Tract Map 16136 to provide for 50 residential lots instead of 92 residential lots; (2) elimination of the realignment of SR-38; (3) elimination of residential development south of SR-38; (4) creation of open space and neighborhood lakefront access areas; (5) relocation and reduction of the size of the Marina, and (6) increasing the minimum lot size from 7,200 square feet to 20,000 square feet.

Although the revisions significantly reduce the scope and intensity of development, and as discussed in detail in this Revised and Recirculated Draft EIR, significantly reduce and/or eliminate most of the significant environmental impacts identified in the 2005 Final EIR, the County has nevertheless determined that the identified project revisions constitutes significant new information, pursuant to CEQA Guidelines, Section 15088.5, requiring recirculation of the Draft EIR.

Therefore, in accordance with CEQA Guidelines Section 15088.5(a), the County has recirculated the Draft EIR, as revised. CEQA Guidelines Section 15088.5(c) states that, “if the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified.” Even though the affected chapters are identified in Section 1.3 above, San Bernardino County nevertheless is recirculating the entire EIR.

This Revised and Recirculated Draft EIR was prepared in compliance with the CEQA of 1970 (Public Resources Code §§ 21000 et seq.), and the CEQA Guidelines (California Code of Regulations (CCR), Title 14, §§15000 et seq.). As described in the CEQA Guidelines Section 15121(a), an EIR is a public information document that assesses potential environmental impacts of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts. CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. It is not the purpose of the EIR to recommend approval or denial of a project. Rather, an EIR serves to provide full disclosure of potential environmental impacts of a proposed project for review and consideration by the Lead Agency.

1.5 - Determination of the Lead Agency and Responsible Agencies

CEQA requires that the agency with the broadest land use permitting authority over a private project should act as the Lead Agency in processing the EIR. The Moon Camp residential development project Tentative Tract Map and General Plan Amendment is proposed outside of any city boundaries, within the boundaries of the San Bernardino County; therefore, the County is the most appropriate authority to act as lead agency for this project. Additionally, other agencies may have authority over resources that may be affected by the project, or may be required to issue permits or give other input on implementation of the project. These are referred to as “responsible agencies” and “trustee agencies” and include the following:

- Big Bear Municipal Water District - A Dock System and License Agreement, Yacht Club Dock License, and/or a shore alteration permit can be obtained at their discretion.
- California Department of Fish and Game (CDFG) - 1602 Streambed Alteration Agreement.
- California Division of Forestry - Timber Harvest Plan approval.
- California State Water Resources Control Board -- General Storm Water Permit for Construction and Storm Water Pollution Prevention Plan.
- California Regional Water Quality Control Board (RWQCB) - Clean Water Act Section 401 Permit.
- California Department of Transportation - Project Study Report (PSR) and Traffic Impact Study (TIS) for SR-38 Encroachment Permit.
- City of Big Bear Lake, Department of Water and Power, or the County of San Bernardino Special Districts Department (CSA 53C) - water service permits and approvals.
- County of San Bernardino Special Districts Department (CSA 53B) - sewer service permits and approvals.
- South Coast Air Quality Management Agency – Authority to Construct/Operating Permits.
- U.S. Army Corps of Engineers (USACE) - Clean Water Act Section 404 Permit.
- U.S. Forest Service - Trustee Agency located in the vicinity of the Project Site.
- San Bernardino Associated Governments (SANBAG) - Regional agency.
- Southern California Association of Governments (SCAG) - Regional agency.

1.6 - Organization of the EIR

The Revised and Recirculated Draft EIR is organized as follows, and can be cross-referenced with information presented below.

Executive Summary: This revised section presents a summary of the proposed revisions to the Project Description for the Moon Camp Residential Development Project, which constitutes the Proposed Alternative Project to the Original Proposed Project, includes a table that summarizes potential environmental impacts associated with the Proposed Alternative Project, and identifies mitigation measures for any new impacts identified. It lists all mitigation measures recommended to reduce potentially significant environmental impacts associated with the Proposed Alternative Project.

Section 1 - Introduction: This revised section describes the purpose and organization of the EIR and how CEQA allows for the recirculation of a revised Draft EIR prior to certification.

Section 2 - Project Description: This revised section provides a detailed description of the revisions the Applicant has proposed to the design and density of the Moon Camp Residential Development Project.

Section 3 - Environmental Setting: This revised section outlines the existing environmental conditions of the Project area. This revised section describes the environmental setting for each topical area that must be revisited, evaluates the changes that may result from proposed revisions to the Original Proposed Moon Camp Residential Development Project, and identifies whether any changes may produce significant adverse environmental impacts. This revised section is limited to those issues identified above in Section 1.3.

Section 4 - Impact Analysis: This section explains the organization and evaluation process used in determining the environmental impacts.

Section 5 - Cumulative Impacts: The Cumulative Project List has been updated for this Revised and Recirculated Draft EIR and hence there is a new cumulative analysis for the Proposed Alternative Project.

Section 6 - Other CEQA Analysis: This revised section describes the significant environmental effects and irreversible environmental changes and describes the growth-inducing impacts associated with implementation of the Proposed Alternative Project.

Section 7 - Alternatives to the Proposed Alternative Project: This revised section provides a comparison between the Proposed Alternative Project and the Original Proposed Project and the Alternatives evaluated in the 2005 Final EIR.

Sections 8 and 9 - Report Preparation Sources and References: These revised sections outline the resources used in preparation of the Revised and Recirculated Draft EIR, including reports, organizations and persons consulted, and provide a list of all persons who directly participated in the preparation of the Revised and Recirculated Draft EIR.

Appendices: The Revised and Recirculated Draft EIR includes a compact disk (CD) at the back of the document that contains the 2005 Final EIR and technical studies that were used to prepare the environmental analysis for the proposed project. A second CD includes the technical studies prepared for this Revised and Re-circulated Draft EIR.

1.7 - Incorporation by Reference

Pertinent documents relating to this EIR have been cited in accordance with Section 15148 of the CEQA Guidelines, which encourages “incorporation by reference” as a means of reducing redundancy and length of environmental reports. The following documents, which are available for public review at the County of San Bernardino, are hereby incorporated by reference into this EIR. Information contained within these documents has been utilized for each section of this EIR. A brief synopsis of the scope and content of these documents is provided below:

- **County of San Bernardino General Plan, adopted March 2007.** The County of San Bernardino General Plan is the long-range planning guide for growth and development for the County of San Bernardino. The General Plan has two basic purposes: (1) to identify the goals for the future physical, social and economic development of the County; and (2) to describe and identify policies and actions adopted to attain those goals. It is a comprehensive document that addresses seven mandatory elements/issues in accordance with State law. These elements include Land Use, Housing, Circulation, Conservation, Open Space, Noise and Safety. Other optional issues that affect the County have also been addressed in the Plan. The County General Plan was utilized throughout this EIR as the fundamental planning document governing development on the project site. Background information and policy information from the Plan are cited in several sections of the EIR.
- **County of San Bernardino General Plan EIR, certified March 2007.** The purpose of the General Plan EIR, a Program EIR, is to provide basic analysis of the potentially significant effects on the human and natural environment that may occur during the implementation of the General Plan Update. The General Plan implementation program incorporates mitigation measures. However, project-specific impacts are assessed at the application stage. The General Plan Program EIR provides a fundamental base from which environmental review will occur.

The most important feature of the General Plan EIR is its thresholds. The thresholds provide a commonly acceptable level for assessing project impacts on the environment. A project which has impacts below the threshold may be reviewed using the Mitigated Negative Declaration (MND) process. Projects which have impacts above the thresholds provide advance information allowing an applicant to submit the necessary information to determine if the impact can be mitigated through conventional means. If an impact cannot be mitigated through accepted practices, then normally, an environmental impact report for that project will be required.

- **County of San Bernardino Development Code, adopted March 2007.** The County Development Code provides the regulations which must be followed by every project within the County's jurisdictional area. Information within the Development Code was utilized in various sections of this EIR, particularly as it relates to the range of permitted uses within the BV/RS-20M designation (Single Residential, minimum 20,000 square foot lots) and for the identification of additional constraints and requirements that govern development.

1.8 - Project Sponsors and Contact Persons

The County of San Bernardino is the lead agency directing the environmental review of the proposed project. Preparers and contributors to this EIR are listed in Section 8, Report Preparation Sources. Key contract persons are as follows:

Project Applicant/Property Owner:	Tim Wood/RCK Properties, P.O. Box 6820 Big Bear Lake, CA 92315
Lead Agency:	County of San Bernardino Land Use Services Department 385 North Arrowhead Avenue, 1st Floor San Bernardino, CA 92415-0182 Phone: 909.387.4147 Mr. Matt Slowik, Senior Planner
Environmental Consultant:	Michael Brandman Associates 340 South Farrell Drive, Suite A-210 Palm Springs, CA 92262 Phone: 760.322.8847 Kerri Mikkelsen Tuttle, Branch Manager

1.9 - Public Review of the Revised/Re-circulated Draft EIR

This document is being recirculated to state, regional, and local agencies and to interested organizations and individuals that may wish to review and comment on the Revised and Recirculated Draft EIR. Publication of this Revised and Re-circulated Draft EIR marks the beginning of a 45-day public review period. Copies of the document are available for review at the following locations:

County of San Bernardino Public Library – Big Bear Lake Branch
41930 Garstin Drive
Big Bear Lake, CA 92315
909.866.5571
Hours: M-T 12-8, W-F 12-6, Sat 9-5, closed Sunday

County of San Bernardino Big Bear Office
477 Summit Boulevard
Big Bear Lake, CA 92315
909.866.1070
Hours: M-F 8-5

County of San Bernardino Land Uses Services Department
385 North Arrowhead Avenue, First Floor
San Bernardino, CA 92415
909.387.8311
Hours: M-F 8-5

Or online at: www.co.san-bernardino.ca.us/landuseservices.

The County will receive written comments on the Revised and Recirculated Draft EIR during this 45-day public review period. Written comments received in response to the Revised and Recirculated Draft EIR will be addressed in the Final EIR and Responses to Comments. The County's Planning Commission and Board of Supervisors will review the documentation, including the Final EIR, County of San Bernardino staff recommendations, and public testimony, to decide whether to certify the EIR and approve the Proposed Alternative Project.

SECTION 2: PROJECT DESCRIPTION

2.1 - Project Location and Setting

The proposed 62.43-acre Moon Camp project site is located on the north shore of Big Bear Lake, in the unincorporated community of Fawnskin, County of San Bernardino (refer to Exhibit 2-1, Regional Location, and Exhibit 2-2, Local Vicinity). The Big Bear Lake area is primarily a resort community where a major portion (approximately two thirds) of the residences are second homes. The south shore contains commercial and recreational facilities, including ski areas, hotels and restaurants, within the incorporated City of Big Bear Lake. By comparison, the north shore area in the vicinity of the project is less populated and primarily residential, with a small commercial component westerly of the project site.

State Route 38 (SR-38), also known as North Shore Drive, provides access to the project site; the road actually transects the property. The project site is roughly bounded to the north by Flicker Road, to the south by Big Bear Lake, to the east by Polique Canyon Road, and to the west by Canyon Road. In the Township and Range nomenclature system, the project site is described as being located in the northern half of Section 13, Township 2 North, Range 1 West, San Bernardino Baseline and Meridian (SBBM). San Bernardino County parcel numbers for the site include Assessor's Parcel Numbers (APN) numbers 0304-082-04, 0304-091-12, 0304-091-22, and 0304-091-21. According to the legal description, the site includes Tracts 108, 109, 117 and 118, Township 14 South, Range 14 East, and SBBM. The study area is specifically located at coordinates 34.264 degrees latitude and 116.933 degrees longitude.

2.2 - Project Site Characteristics

In addition to SR-38, several dirt trails (generally associated with unauthorized off-road vehicle use) traverse the project site, which is located approximately 1 mile south of the Pacific Crest Trail; a trail that stretches between the US/Mexican border and the US/Canadian border. Site elevations range from approximately 6,744 feet above mean sea level (msl) at the lakeshore to 6,960 feet above msl at the northeast corner of the site. Individual slopes on-site range from 5 percent to 40 percent. Slope orientation is generally from north to south toward the lake, except for three natural ravines on the project site that contain eastern and western slopes. Vegetation and habitat types in the project area include open Jeffery Pine forest (with an average density of 44.4 trees per acre) and unique pebble plains habitat in the western portion, which is a priority for preservation according to the California Natural Diversity Database (CNDDDB).

2.2.1 - Existing Land Use

The project site is currently undeveloped and is designated in the County of San Bernardino, Bear Valley Community Plan (BV) as Rural Living with minimum 40-acre lots (BV/RL-40) (refer to Exhibit 2-3, Land Use Designations). The RL-40 land use designation is identified as a "Holding

Zone” within the Bear Valley Community Plan, which states: future development proposals (such as Moon Camp) within the RL-40 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. Table 2-1, Existing Land Use and Land Use Designations, identifies the land use category of the site and surrounding properties, as well as the current land use designations.

Table 2-1: Existing Land Use and Official Land Use Zoning District

Existing Land Use		Official Land Use Zoning District (Bear Valley Community Plan)
Project Site	Vacant	Rural Living (BV/RL-40). This district provides sites for open space and recreational activities, single-family homes on very large parcels and similar and compatible uses. Minimum parcel size is 40 acres; 1 dwelling unit per parcel. 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 within the RL-40 designation 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.
North	Residential (N and NW), Forest (N and NE)	Residential (BV/RS). One dwelling unit per 0.25 acre and a minimum lot size of 7,200 square feet. US Forest Service administered land.
South	Big Bear Lake, Residential (SE)	Floodway (FW). Uses permitted at owners risk; minimum parcel size is 10 acres. Single Residential (BV/RS). Four dwelling units per acre, minimum lot size is 7,200 square feet.
East	Vacant, Residential (SE) Forest (N and NE)	Single Residential (BV/RS). One dwelling unit per 0.25 acre and a minimum lot size of 7,200 square feet. Resource Conservation (BV/RC). Minimum parcel size is 40 acres; 1 dwelling unit per parcel. US Forest Service administered land.
West	Vacant, Residential	Special Development (BV/SD-RES). Minimum parcel size 40 acres. This District provides sites for a combination of residential uses. Single Residential (BV/RS). Four dwelling units per acre, minimum lot size is 7,200 square feet.
Sources: Bear Valley Community Plan, 2007. County of San Bernardino Development Code, 2007.		



Source: Census 2000 Data, The CaSIL, MBA GIS 2009.



Michael Brandman Associates

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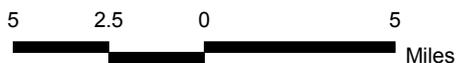


Exhibit 2-1 Regional Location Map

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: National Agriculture Imagery Program, San Bernardino County (2005).



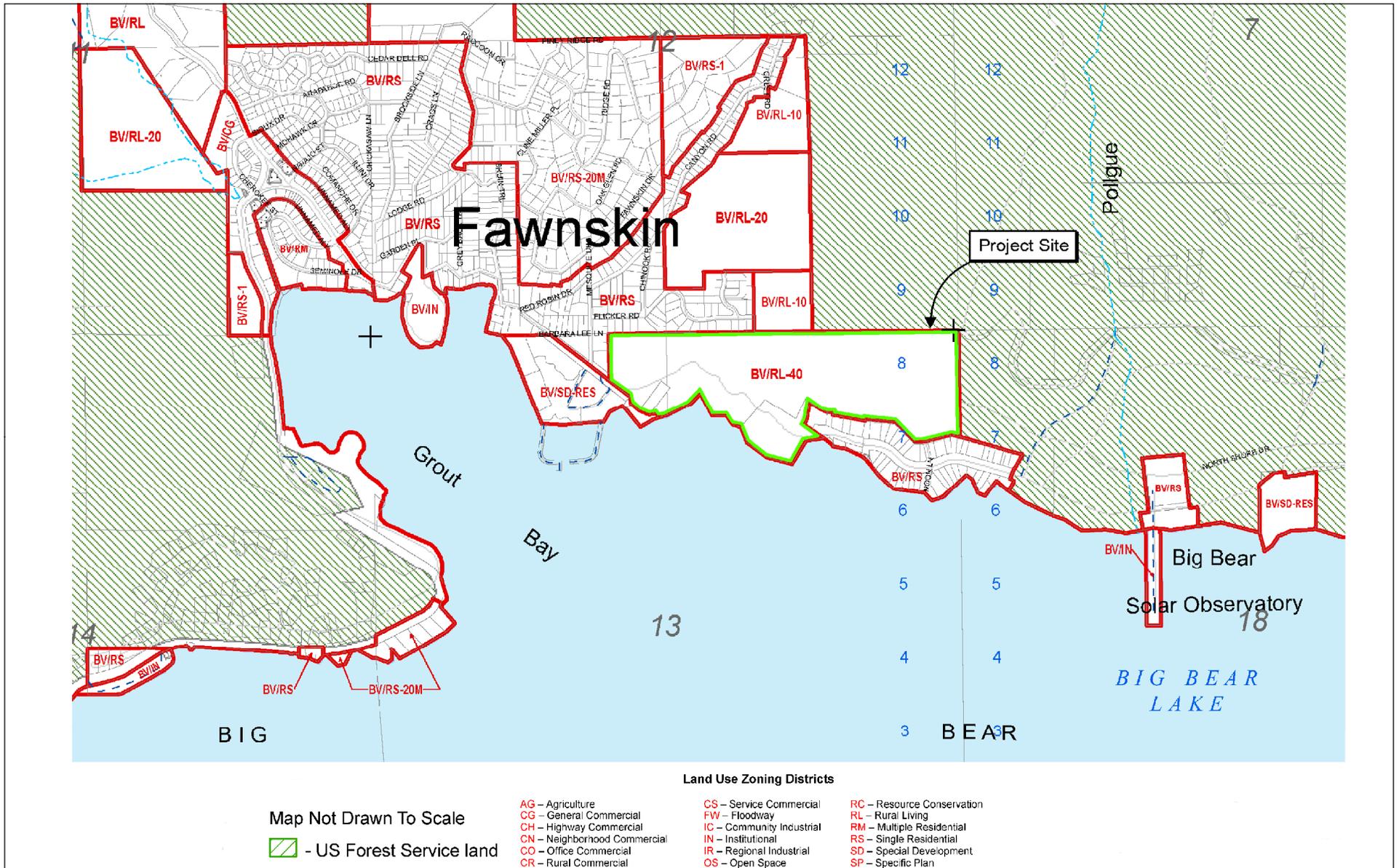
Michael Brandman Associates

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Exhibit 2-2 Project Vicinity Map - Aerial Base

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



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

2.2.2 - Site History

A marshy portion of the nearly flat Bear Valley was dammed in 1884 to provide a reservoir (Big Bear Lake) to retain irrigation water for release to the Redlands area of the eastern San Bernardino Valley. In 1912, a larger 72-foot multiple arch dam was constructed about 300 feet downstream of the old dam, increasing the lake capacity to 73,000 acre feet. Tourism in the area began with the onset of the automobile age and the eventual establishment of highways accessing the relatively remote area.

Maximum elevation at the lake surface is 6,744 feet above msl, but the actual level fluctuates according to annual snowmelt and runoff. The dam is owned by the Big Bear Municipal Water District. The lake has an east-west length of approximately 7 miles and is approximately 2.5 miles at its widest, though most of the lake's width averages a little more than 1 mile. Big Bear Lake measures 72 feet deep at the dam. It is completely rain- and snow-fed, having no other source of tributary or mechanical replenishment other than natural precipitation.

The Community of Fawnskin was founded in 1916, and by 1928, there were at least nine resort camps in the area, including Moon Camp, which was built in 1919. The project site has remained primarily vacant since destruction of the original camp in 1951. The current property owner purchased the marina permit along with the property in 1969. Site improvements currently include three water wells and SR-38, which transects the property from east to west.

In 2003, the Applicant proposed Tentative Tract Map No. 16136 for the subdivision of the approximately 62.43-acre site into 95 lots comprised of 92 residential lots and three lettered lots (Original Proposed Project). Exhibit 2-4, Moon Camp Tentative Tract Map No 16136 - Original Proposed Project, shows the configuration of the Project as originally proposed. Under the Original Proposed Project, a segment of SR-38 would be realigned in order to establish an area to develop lakefront residential lots. The three lettered lots are for private streets, a remainder strip of land between lakefront lots and the realigned segment of SR-38, and a gated entrance to the project. The 2005 Final Environmental Impact Report (Final EIR) determined that there were significant unavoidable impacts associated with the proposed project as follows:

Aesthetics/Light and Glare

Significant and unavoidable impacts related to Aesthetics/Light and Glare were identified for viewshed alterations involving existing residents to the north, east and west of the project site. The proposed 92 dwelling units would adversely impact existing views of the lake and surrounding mountain peaks from some existing adjacent residences. Additionally, significant and unavoidable impacts were identified for views from SR-38, a scenic highway, to the south and from the south shore of Big Bear Lake.

Air Quality

Air quality impacts that would remain significant and unavoidable following mitigation were:

- **Construction Activities:** Reactive Organic Gases (ROG) and nitrogen oxides (NO_x) emissions during site preparation and construction from equipment and vehicles would be significant in the short-term; and
- **Project Operations:** Long-term use of the project site would result in an overall increase in the local and regional pollutant load due to direct impacts from vehicle emissions, and indirect impacts from electricity and natural gas consumption. Combined mobile and area source emissions would exceed South Coast Air Quality Management District (SCAQMD) thresholds of ROG, carbon monoxide (CO) and 10 micron or less particulate matter (PM₁₀).

Biological Resources

Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to less than significant levels with the exception of the bald eagle. Impacts to this species were considered to be significant and unavoidable due to short-term construction noise and long-term residential noise, as well as the removal of potential perch trees, particularly in the westerly portion of the project site.

Hydrology and Drainage

Due to inconclusive testing of potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit, the 2005 Final EIR concluded that the potential for the project to have an adequate water supply was uncertain. Accordingly, project and cumulative impacts were considered to be significant and unavoidable.

Public Services and Utilities

Due to the inability of water providers to confirm service to the project, the proposed project, as well as cumulative impacts, was considered to be significant and unavoidable. This conclusion was further supported by the significant and unavoidable conclusion cited in 2005 Final EIR Section 5.11, Hydrology and Drainage, due to inconclusive testing of potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit.

In response to comments on the 2004 Draft EIR and 2005 Final EIR, the Applicant developed a revised tract map to reduce the density and intensity of the project, which in turn, would likely eliminate or to the extent feasible, reduce the severity of the impacts identified as remaining significant and unavoidable after implementation of mitigation measures.



Source: Hicks & Hardwick, Inc.



Not to Scale

Michael Brandman Associates
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Exhibit 2-4
Moon Camp TTM No 16136 Original Proposed Project

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

2.3 - Project Characteristics (Proposed Alternative Project)

The revised project description (Proposed Alternative Project) consists of the subdivision of the site into 57 lots—50 numbered lots (residential lots) to be sold individually and developed into custom homes; and seven lettered lots, two of which would be designated as Open Space/Conservation easements and Neighborhood Lake Access, three are well sites, one is a potential reservoir site, and one would be developed as the marina parking lot with a boat ramp. The marina parking lot also includes some open space for the preservation of existing trees; however, because of the development of the parking lot and boat ramp, the lot would not be considered Open Space. Exhibit 2-4, Original Proposed Project, and Exhibit 2-5, Proposed Alternative Project, are included herein and show the following differences between the plans:

- The Tentative Tract Map has been revised to reduce the number of residential lots from 92 lots to 50 lots by: (1) proposing larger lot sizes (minimum 20,000-square-foot lots – BV/RS-20M); (2) eliminating residential development along the shoreline; and 3) creating two distinct on-site conservation areas—one covering a portion of the shoreline south of SR-38 – to include neighborhood lake access, and the other encompassing the pebble plain habitat and bald eagle perches on the west end of the site. A third lettered lot consists of the parking lot/boat launch ramp, which also includes some open space, but because of the proposed use, cannot be referred to as Open Space/Conservation. Finally, there would be three lettered lots for the existing well sites and one lettered lot for the potential reservoir site. The Proposed Alternative Project also includes a 10-acre off-site Pebble Plain Conservation easement in the Sugarloaf area of Big Bear Valley that will be dedicated to a conservation management organization.
- The request for a General Plan Amendment has been revised to reflect the larger minimum lot size and to re-designate the site from BV/RL-40 (minimum lot size 40 acres) to BV/RS-20M (minimum lots size 20,000 square feet) instead of the original BV/RS (minimum lot size 7,200 square feet).
- The proposed marina has been moved from the lake shore near the west side of the site to the east side of the site, and the size of the marina has been reduced from 103 slips to 55 slips to reflect the proposed reduction in the number of residential lots to be developed. For the proposed marina parking lot, direct access from SR-38 is required, whereas under the Original Proposed Project, access to the marina parking lot was from private street A.
- The realignment of a segment of SR-38 has been deleted from the Proposed Alternative Project and no changes in the road configuration are now proposed. Because the road segment would not be realigned, the proposed removal of approximately 665 trees of the 2,772 trees identified on-site would not occur. The incidence of tree removal to develop lots would also be reduced because there are only 50 lots, versus the original 92 lots, and the larger lot sizes would allow home builders greater options in siting the homes to avoid trees. Although trees have been removed from the project site for fire safety/fuel reduction reasons, these tree removals are not related to the proposed development of the project.

- No direct access to SR-38 from individual lots is proposed. Access to individual lots would be from the proposed public streets (A and B). Also, with the deletion of residential lots south of SR-38, the need for five points of ingress/egress from the south side has been reduced to two (refer to Exhibits 2-4 and 2-5), to allow traffic through the marina parking lot to flow. Residents' access to the project site north of SR-38 has been reduced from three streets to two, with the third street shown on the original site plan now proposed to be used for emergency access only.

Infrastructure

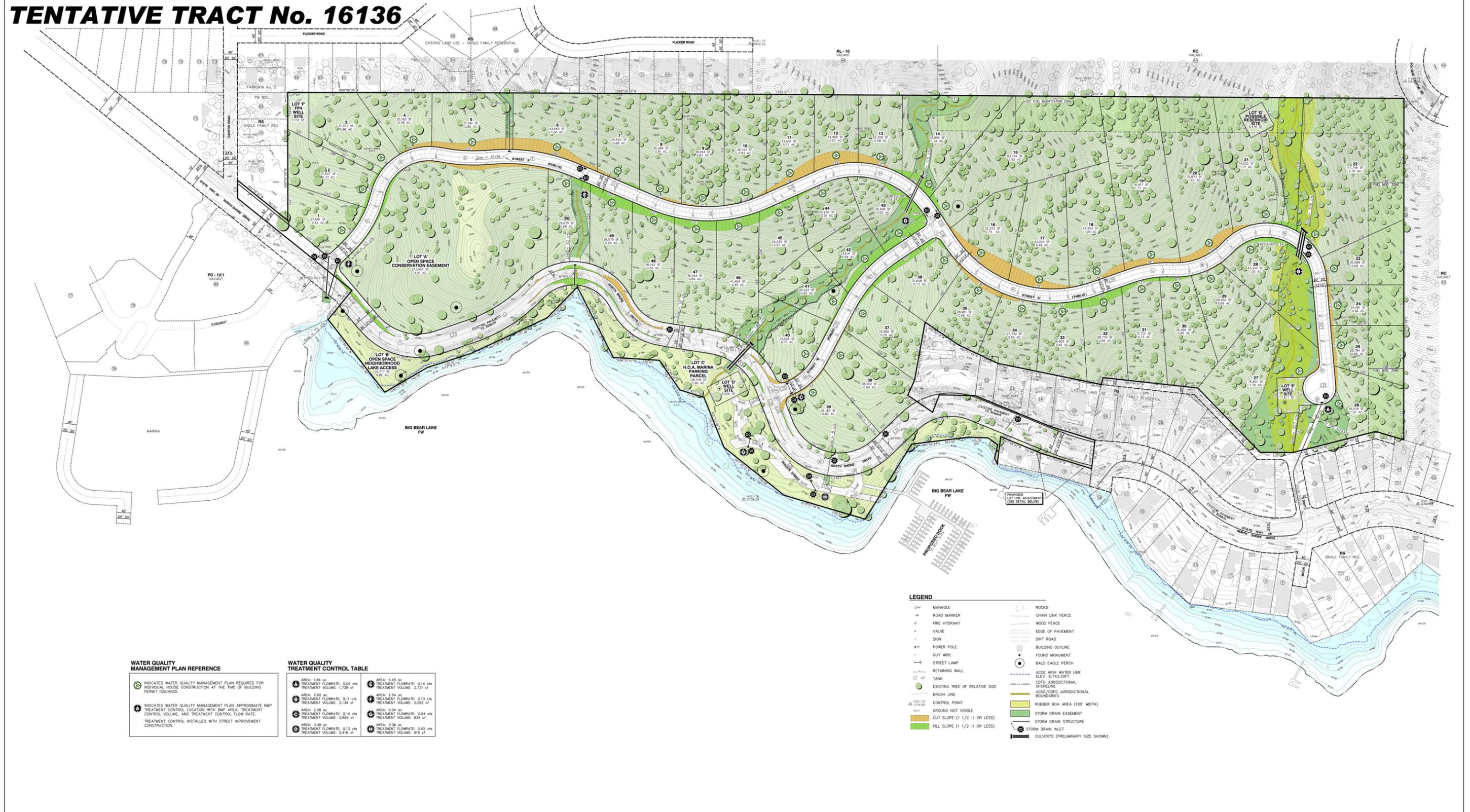
A water service feasibility study entitled "Final Feasibility Study to Serve the Proposed Moon Camp Residential Development (Tentative Tract Map No. 16163)," was prepared by Alda Engineering, Inc., in March 2007, to address issues raised in comments received on the 2005 Final EIR. In addition, the sewer feasibility study prepared by So & Associates was updated to reflect the revisions to the Moon Camp site plan. This study entitled, "County Service Area 53, Improvement Zone B (CSA 53-B) Updated Sewer Feasibility Study for APN's 0304-091-12, -21, -22, and 0304-082-04, TTM 16136 RCK Properties, Inc./Moon Camp," prepared April 11, 2007, and the water service feasibility study are included in this Revised and Recirculated Draft EIR in Appendix G.

Water Service

Although water service is not presently provided to the project site, the site is immediately adjacent to the Big Bear Department of Water and Power (DWP) and annexation to the DWP's authorized service area is one of three possible water service alternatives. DWP has conducted a Water Feasibility Study (Alda 2007), and provided a conditional will serve letter to the Applicant. However, the majority of the project site is outside of the DWP authorized service area as well as the City's Sphere of Influence. DWP cannot provide water service without first complying with the provisions of Government Code Section 56133, which pertains to the Local Area Formation Commission (LAFCO) annexation process. In order for the DWP to provide water service to the project site and to own and operate the Proposed Alternative Project's water system, LAFCO would have to approve an expansion of the City of Big Bear Lake's Sphere of Influence to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site. The developer would be required to construct the on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda 2007). This is Water Service Alternative #1 (see Section 4.9 for details).

Significant transmission improvements in the Fawnskin system would be needed to provide fire flow to the project site. Individual pressure regulators would be required for all lots with static pressures exceeding 80 psi. The future home owners would install and fund the individual pressure regulators as required for specific lots. Currently there are three groundwater wells on-site (constructed by the project's property owner and developer), Wells FP2, FP3 and FP4. Alternative #1 involves wells FP2, FP3, and FP4 being deeded to the DWP at the time the tract map is recorded.

TENTATIVE TRACT No. 16136



WATER QUALITY MANAGEMENT PLAN REFERENCE

⊕ INDICATES WATER QUALITY MANAGEMENT PLAN REQUIRED FOR INDIVIDUAL HOUSE CONSTRUCTION AT THE TIME OF BUILDING PERMIT ISSUANCE.

⊕ INDICATES WATER QUALITY MANAGEMENT PLAN APPROXIMATE BMP TREATMENT CONTROL LOCATION WITH BMP AREA, TREATMENT CONTROL VOLUME, AND TREATMENT CONTROL FLOW RATE.

⊕ TREATMENT CONTROL INSTALLED WITH STREET IMPROVEMENT CONSTRUCTION.

WATER QUALITY TREATMENT CONTROL TABLE

AREA: 1.84 ac TREATMENT FLOWRATE: 0.09 cfs TREATMENT VOLUME: 1,728 cf	AREA: 4.45 ac TREATMENT FLOWRATE: 0.14 cfs TREATMENT VOLUME: 2,721 cf
AREA: 2.60 ac TREATMENT FLOWRATE: 0.11 cfs TREATMENT VOLUME: 2,134 cf	AREA: 2.54 ac TREATMENT FLOWRATE: 0.13 cfs TREATMENT VOLUME: 2,052 cf
AREA: 2.38 ac TREATMENT FLOWRATE: 0.14 cfs TREATMENT VOLUME: 2,688 cf	AREA: 0.34 ac TREATMENT FLOWRATE: 0.04 cfs TREATMENT VOLUME: 854 cf
AREA: 3.08 ac TREATMENT FLOWRATE: 0.13 cfs TREATMENT VOLUME: 2,416 cf	AREA: 0.36 ac TREATMENT FLOWRATE: 0.05 cfs TREATMENT VOLUME: 919 cf

LEGEND

⊕	MANHOLE	⊕	ROCKS
⊕	ROAD MARKER	⊕	CHAIN LINK FENCE
⊕	FIRE HYDRANT	⊕	WOOD FENCE
⊕	VALVE	⊕	EDGE OF PAVEMENT
⊕	SIGN	⊕	DIRT ROAD
⊕	POWER POLE	⊕	BUILDING OUTLINE
⊕	GLY WIRE	⊕	FOUND MONUMENT
⊕	STREET LAMP	⊕	BALD EAGLE PERCH
⊕	RETAINING WALL	⊕	ACOE HIGH WATER LINE ELEV. 6,743.20FT
⊕	TANK	⊕	CDPG JURISDICTIONAL SHORELINE
⊕	EXISTING TREE OF RELATIVE SIZE	⊕	ACOE/CDPG JURISDICTIONAL BOUNDARIES
⊕	BRUSH LINE	⊕	RUBBER BOA AREA (100' WIDTH)
⊕	CONTROL POINT	⊕	STORM DRAIN EASEMENT
⊕	GROUND NOT VISIBLE	⊕	STORM DRAIN INLET
⊕	CUT SLOPE (1 1/2 : 1 OR LESS)	⊕	STORM DRAIN STRUCTURE
⊕	FILL SLOPE (1 1/2 : 1 OR LESS)	⊕	CULVERTS (PRELIMINARY SIZE SHOWN)

Source: Hicks & Hartwick, Inc. (July, 2009).

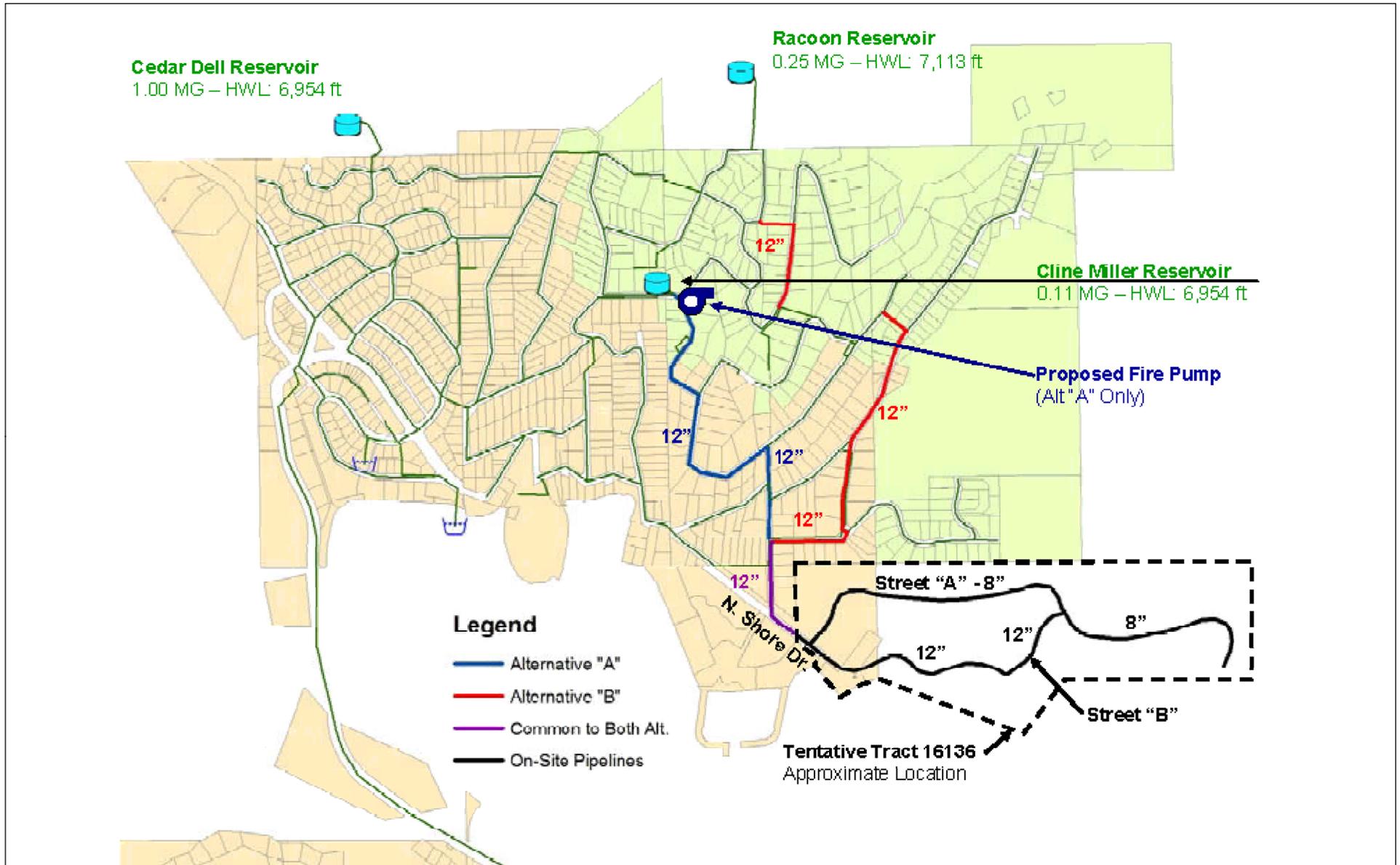


Michael Brandman Associates

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Exhibit 2-5 Moon Camp TTM No 16136 Proposed Alternative Project

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: ALDA Engineering Inc.



Not to Scale

00520089 • 07/2009 | 2-6_prop_water_facilities.mxd

Exhibit 2-6 Proposed Water Facilities

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

The Water Feasibility Study provides two options (A and B) for expanding the existing Fawnskin Water System infrastructure. Option B has been chosen by DWP and the Applicant as the preferred Water Feasibility Study alternative for Water Service Alternative #1. In either case, the Applicant would install all common infrastructures, including fire hydrants, and would also install the water main lines within the project site. The water improvements will primarily occur within existing paved roads. Nearby residents are not required to tie into the proposed DWP water system. See Exhibit 2-6 for the proposed water facilities and improvements.

Water Service Alternative #2 (see Section 4.9 for details) would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Instead, County Service Area 53C (CSA 53C) would own and operate the water facilities within the project site and contract with the DWP for a water interconnection to the existing Fawnskin water system. The developer would be required to construct the same on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda 2007). The water improvements for Water Service Alternative #2 would primarily occur within existing paved roads.

Under Water Service Alternative #3 (see Section 4.9 for details), instead of constructing the off-site water facilities (within the Fawnskin Water System) identified in the DWP's Water Feasibility Study Option B (Alda, 2007, which is the basis for Water Service Alternatives #1 and #2, above), the Proposed Alternative Project's developer would construct an on-site reservoir (238,600 gallons) and an on-site booster station capable of providing the daily water supply flow and the required 1,750 gallons per minute fire flow. The reservoir and booster station would be sized based upon the same demand calculations contained in the Water Feasibility Study and Water Service Alternatives #1 and #2. Water Service Alternative #3 would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. The developer would also construct the same on-site (within the project site) water facilities (water main lines, fire hydrants, etc) identified in the Alda Water Feasibility Study. Existing water wells FP2 and FP4 would be connected to the on-site water system and pump their water into the 238,600 gallon on-site reservoir. The on-site booster station would produce the Average and Maximum Daily Demand flows (8.68 gpm and 15.27 gpm) and the Fire Flow of 1,750 gpm for the 2-hour duration. The booster station would include an emergency electrical generator to allow the station to operate during a power outage. The water improvements for Water Service Alternative #3 will primarily occur within the Proposed Alternative Project's paved roads and at the Proposed Alternative Project's reservoir site. The construction of the reservoir would include grading an approximately 75-foot-diameter pad for the reservoir. CSA 53C would own and operate this independent water system.

Projected water demand for the proposed Moon Camp 50-lot subdivision (Proposed Alternative Project) is based on the Water Feasibility Study's consumption rate of 250 gallons per day (gpd) per connection. Exhibit 2-6, Proposed Water Supply Lines, shows the Water Feasibility Study's proposed Moon Camp water system. Maximum day demand is estimated based on information provided in the recently completed DWP Water Master Plan and it is equivalent to 1.76 times the

average day demand. Therefore, the average and maximum day demands for the Proposed Alternative Project are estimated as follows:

- Average Day Demand (ADD) = 12,500 gpd or 8.68 gpm
- Maximum Day Demand (MDD) = 15.27 gpm

Based on an estimated average day demand of 12,500 gallons, the annual water demand for the Proposed Alternative Project is estimated at 4.56 million gallons or 14.0 acre-feet per year.

Wastewater Service

The project site is located within County Service Area 53, Improvement Zone B (CSA 53B) administered by the County of San Bernardino Special Districts Department. The Sewer Feasibility Study indicated that the existing sewer system located adjacent to the project site to the southeast and southwest is capable of handling the wastewater flows from the Proposed Alternative Project.

The Applicant would be responsible for all plumbing and sewer facilities located within the site, including manholes and connection to the CSA 53B system at locations that have been approved by CSA 53B. Exhibit 2-7, Proposed On-site Sewer Facilities, shows the preliminary system. The Moon Camp developer would also be responsible for an off-site sewer extension of approximately 1,200 linear feet along North Shore Drive to connect to an existing CSA 53B collector sewer to the southwest of the property. This extension would accommodate the westerly lots; the easterly lots would be served by a gravity sewer extended to the existing CSA 53B Pump Station B to the southeast of the property. Depending upon where some of the houses are built, some lots may require a residential sewage pump station to transport the lot's sewage up to the sewer line in the street adjoining the property. The wastewater conveyance system on-site would be designed to accommodate these conditions and would be subject to review and approval by the County Special District's Engineer. In addition, regional connection fees would be imposed by the Big Bear Area Regional Wastewater Authority (BBARWA).

2.3.1 - Proposed Alternative Project Attributes and Design Features

The Proposed Alternative Project represents a reduced density alternative to the Original Proposed Project. A comparison of the attributes of the Original Proposed Project and the Proposed Alternative Project are presented above and summarized here. The Proposed Alternative Project would:

- Provide a 46 percent reduction in the number of residential lots that could be developed;
- Increase the minimum lot size and that could be developed on-site from 7,200 square feet to 20,000 square feet;
- Set aside approximately 5.73 acres of the 62.43-acre site as Open/Space Conservation, and a drainage easement;
- Set aside a 10-acre off-site Pebble Plain Conservation easement in the Sugarloaf area of Big Bear Valley that will be dedicated to a conservation management organization;

- Reduce the number of access points onto SR-38 by half from eight to four; and
- Relocate the proposed marina and reduce its size from 103 to 55 boat slips.

Design features built into this Proposed Alternative Project that would reduce the significant unavoidable impacts identified for the original proposed project in the 2005 Final EIR are presented here.

Aesthetics

1. View envelopes for the existing residences on properties adjacent to and the proposed residences on the project site are kept open to the greatest extent possible by reducing the number of lots by 46 percent and increasing the minimum lot size to one-half acre;
2. View corridors are established on-site across the areas to be set aside as Open Space/Conservation, including the entire lakefront area of the site, as well as along drainages that traverse the project site from north to south;
3. Conservation easements, Lots A and B located on the west side of the project site on either side of SR-38 would remain undeveloped open space. Although primarily intended for conservation of wildlife and vegetative resources, they also serve as preservation of visual aesthetics in their natural state. These lots would provide a buffer between the existing residences in Fawnskin, the proposed residential lots on the west side of the Moon Camp Project and the waterline of the lake.

Biological Resources

1. In addition to the proposed 5,73-acre pebble plain/eagle perch tree conservation easements in Lots A and B, the proposed alternative includes a drainage easement through lots 21, 22 and 26 through 29. This easement coincides approximately with a 100-foot wide area that is suitable for the southern rubber boa on-site. This drainage area and the rubber boa area identified on the site plan would not be developable and would remain a drainage feature and rubber boa area. Please note that focused intensive surveys for the southern rubber boa did not locate any occurrences of this species and the species was determined to have a low potential to occur on the project.
2. The Proposed Alternative Project also includes a 10-acre off-site Pebble Plain Conservation easement in the Sugarloaf area of Big Bear Valley that will be dedicated to a conservation management organization.

Cultural Resources

The Archaeological Survey Report prepared for the Original Proposed Project concluded that no historic resources requiring preservation were found on-site during the field survey; therefore, no specific Project Design Features have been identified.

Geology and Soils

The Original Proposed Project's Geotechnical Report included recommendations for developing the project site. No specific Project Design Features have been identified.

Hydrology and Drainage

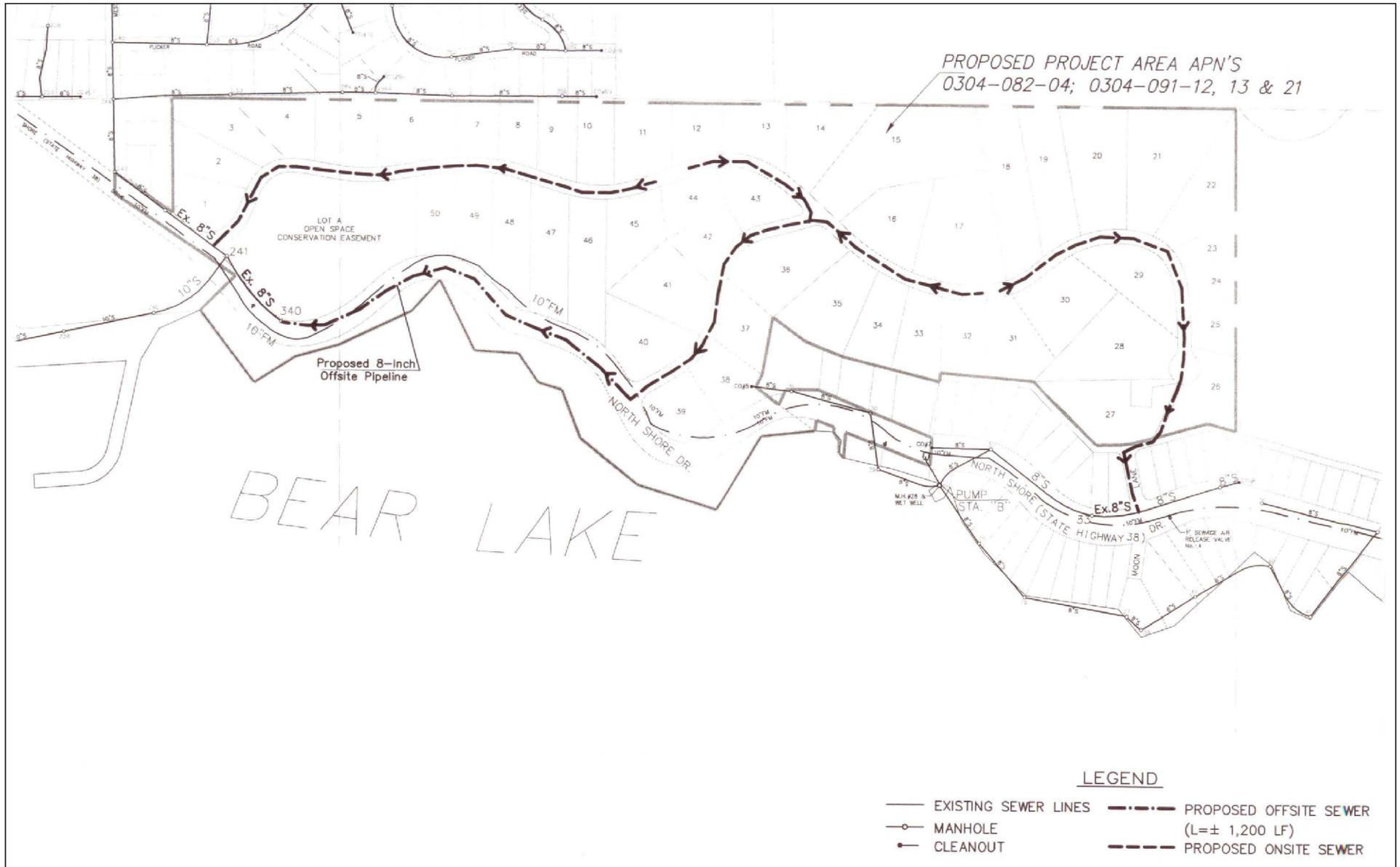
Existing Hydrological Conditions were described in detail in the 2005 Final EIR and have not changed. Storm water treatment under the National Pollution Discharge Elimination System (NPDES) Permit and the future Total Maximum Daily Load (TMDL) requirements shall include the construction of treatment Best Management Practices (BMPs). Treatment BMPs appropriate for on site use shall include infiltration trenches and basins, swales, inlet filtration, and/or water quality basins.

Land Use and Relevant Planning

1. Residences will be custom built by individual lot owners; the Applicant has indicated that lots will not be sold to "tract" homebuilders to develop as a large scale development. Individual lots have been laid out on the revised Alternative 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 residential lots identified in the Original Proposed Project with a minimum lot size of 7,200 square feet, the Proposed Alternative Project, with 50 residential lots, allows a minimum lot size of 20,000 square feet, with 22,120 (one-half acre) being the actual size of the smallest lot.

Noise

1. A 46 percent reduction in the number of residences proposed in this Proposed Alternative to the original project would reduce the duration of construction noise that would occur on-site.
2. Because the Original Proposed Project and Proposed Alternative Project both state that only custom homes would be built on-site and lots would not be sold to a developer to create a "tract" of houses, the Applicant estimates that it would take approximately 5-10 years to sell the individual lots and that based on similar projects in the Valley, it is likely to take 15 to 20 years for the 50 residences to ultimately be built. Therefore, the likelihood that a number of houses would be built simultaneously, thus increasing short-term noise during construction, is small.
3. The Applicant will prepare Conditions, Covenants, & Restrictions (CC&Rs) for the project that would preclude the short-term rental (less than 30 days) of residences.
4. A reduction in the number of boat slips in this Proposed Alternative Project would reduce the amount of noise associated with motor-driven boats docked at the marina.



Source: ALDA Engineering Inc.



Not to Scale

Michael Brandman Associates

00520089 • 07/2009 | 2-7_prop_sewer_facilities.mxd

Exhibit 2-7 Proposed Sewer Facilities

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Public Services and Utilities

1. The Applicant will be responsible for developing the public infrastructure from public systems to each lot. This includes water lines (including fire hydrants), sewer lines, natural gas, electrical, telephone, and cable.
2. Although water service is not presently provided to the project site, the site is immediately adjacent to the jurisdiction of the DWP and annexation to the DWP's authorized service area is one of three possible water service alternatives. Under Water Service Alternative #1, in order for the DWP to provide water service to the project site and to own and operate the Proposed Alternative Project's water system, LAFCO would have to approve an expansion of the City of Big Bear Lake's Sphere of Influence to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site. The developer would be required to construct the on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007). Water Service Alternative #2 would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Instead, County Service Area 53C (CSA 53C) would own and operate the water facilities within the project site and contract with the DWP for a water interconnection to the existing Fawnskin water system. The developer would be required to construct the same on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007). Water Service Alternative #3 would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Alternative #3 would involve the developer constructing an independent water system completely within the project site. The developer would construct the same on-site water lines as in Water Alternatives #1 and #2, and, in addition the required water reservoir and water booster station would be constructed by the developer on the project site (rather than constructing the off-site water facilities identified in the DWP's Water Feasibility Study). CSA 53C would own and operate this independent water system.

Recreation

1. The Proposed Alternative Project includes a marina with 55 boat slips for residents, as well as a parking lot and boat launch.
2. The Proposed Alternative Project also includes the dedication of a 66-foot wide road easement for SR-38 that could be developed as part of the public multi-use trail system along the lakefront.

Traffic and Circulation

1. Parking – each residence would have at least a two-car garage with an additional two parking spaces in the driveway for guest parking. Parking for residences using the marina would be provided in the private/gated parking lot south of SR-38.

2. Access – access to the project site would be via two access points on the north side of SR-38 leading to the residences, and two access points south of SR-38 leading to/from the parking lot and boat launch.
3. Emergency Access – in addition to the aforementioned access points, a third access from SR-38 to the north side is shown on the site plan at the cul-de-sac between Lots 26 and 27. From these access points, residents would follow the emergency evacuation procedures for the Big Bear Valley, as discussed in Emergency Evacuation section of the Public Services Section.

2.4 - Project Phasing / Construction

The Applicant plans to put the entire tract infrastructure in place as part of a single phase of construction.

The exact details of each custom home would be evaluated by the County on an individual basis because the 50 lots would be sold individually and constructed when the purchaser is ready. The Applicant has indicated that like other similar tracts in the area, it is likely to take 5-10 years or more to sell the lots. Construction of individual homes would be intermittent and would likely occur over the next 20 years.

2.5 - Intended Uses of This EIR

This document is intended as an informational document for use in decision making by the County of San Bernardino and other responsible agencies, trustee agencies, and interested parties.

2.5.1 - Lead Agency

The County of San Bernardino is the lead agency in charge of approving this Proposed Alternative Project, and therefore has discretionary authority. The County Board of Supervisors will consider a General Plan Amendment to change the Land Use Designation from BV/RL-40 to BV/RL-20M, Conditional Use Permit for Marina and Parking Lot, Tentative Tract Map, and Certification of the Environmental Impact Report.

2.5.2 - Responsible Agencies

Agencies that are responsible for review of the Proposed Alternative Project and/or to issue permits include:

- LAFCO – Approval of a possible request for annexation of the DWP’s Fawnskin Water Service Area and the project site into the City of Big Bear Lake’s Sphere of Influence.
- Big Bear Municipal Water District – A Dock System and License Agreement, Yacht Club Dock License and/or a shore alteration permit.
- City of Big Bear Lake DWP and/or CSA 53C – Water service design approval and permits.

- County Service Area 53B – Sewer service design approval and permits.
- California Department of Fish and Game (CDFG) – 1602 Streambed Alteration Agreement.
- California Division of Forestry – Timber Harvest Plan approval.
- California State Water Resources Control Board – General Storm Water Permit for Construction and Storm Water Pollution Prevention Plan.
- California Regional Water Quality Control Board (RWQCB) – Clean Water Act (CWA) Section 401 Permit.
- California Department of Transportation – Project Study Report (PSR) and Traffic Impact Study (TIS) for SR-38 Encroachment Permit.
- SCAQMD – Authority to Construct/Operating Permits.
- U.S. Army Corps of Engineers (USACE) – CWA Section 404 Permit.
- U.S. Forest Service – Trustee Agency located in the vicinity of the project site.
- San Bernardino Association of Governments (SANBAG) – Trustee of interagency cooperation.
- Southern California Association of Governments (SCAG) – Trustee oversees regional housing needs and interagency cooperation.

SECTION 3: ENVIRONMENTAL SETTING

Big Bear Lake is located in the mountainous portion of San Bernardino County (see Exhibit 2-1, Regional Location Map). The Moon Camp Project is located on the north shore of Big Bear Lake, in the community of Fawnskin. The project site is bounded on the south by the lake and sparsely populated residential lakefront property, on the north by the San Bernardino National Forest and a residential area, on the west by a residential area, and on the east by the San Bernardino National Forest.

3.1 - Area Characteristics and Climate

Big Bear Lake experiences an alpine climate where the lake is at an altitude of 6,750 feet above mean sea level (msl). Winter months are characterized by snowstorms of varying intensity, but most days are cool and clear. Summers are mild and include occasional rainfall. The sun shines around 300 days a year. Average temperatures reach about 81 degrees in the summer and drop to around 20 degrees in the winter. Average annual precipitation is about 22 inches of rain and 62 inches of snow.

The project area is covered with Jeffery pine forest, from sparse to thick in concentration, and has small clearings with pebble plains. The forest does not have much understory vegetation in areas near the lake. Topography relief is primarily characterized by undulations carved by drainage, into a moderate slope rising away from the lake, but there are some slopes up to 40 percent.

3.2 - Existing Site Characteristics

The site, which occupies an area of 62.43 acres, is characteristic of the surrounding area. It supports a complement of wildlife and vegetation. As described in the original 2005 Final Environmental Impact Report (EIR), the project site consists of 62.43 undeveloped acres located along the north shore of Big Bear Lake on the eastern edge of the unincorporated community of Fawnskin (refer to the 2005 Final EIR, Exhibit 3.9-1, Local Vicinity). The site is bordered by Flicker Road on the north, Big Bear Lake on the south, Polique Canyon Road on the east, and Canyon Road on the west. The property is adjacent to the boundaries of the San Bernardino National Forest (USFS), which lies mostly to the north and east. The property requires no USFS permitting. State Route 38 (North Shore Drive/SR-38) traverses the southern portion of the property near the lakeshore.

3.3 - Land Use and Zoning

3.3.1 - Current Land Use Status

The 2005 Final EIR authored by RBF similarly addresses the current land uses on and off the project site, and the site has remained relatively undisturbed. Michael Brandman Associates' (MBA's) peer review of the biological studies included a site visit on December 15, 2006. During the site visit, the biologist observed that willow scrub habitat on the lake shoreline had grown up since the site was

studied in 2002. The willow scrub habitat could provide support for the sensitive species willow flycatcher. Additionally, the northern half of the project currently supports habitat suitable for flying squirrel species.

The site continues to be rural in character, and surrounding land uses are primarily vacant land owned by the USFS and by residential landowners. The site is currently zoned RL-40, or Rural Living 40 acre minimum lot size

3.3.2 - Surrounding Land Use and Zoning

Off-site, land uses involve a mix of resource conservation, floodway, and single-family residential. To the north, land use includes some County land zoned RC Resource Conservation (USFS land) and RS single-family residences along Flicker Road and Deer Trail Lane. On the south is Big Bear Lake and to southeast there are single-family residences along the shoreline of the lake on both sides of SR-38. To the west is also existing RS residential. To the east is USFS land.

SECTION 4: PROJECT IMPACTS

As allowed by the California Environmental Quality Act (CEQA) Guidelines, only environmental topics which require further discussion, based on their relevance to the changes in the project description (i.e., changes from the Original Proposed Project to the Proposed Alternative Project), or at the request of the County of San Bernardino, are discussed in this Revised and Recirculated Draft Environmental Impact Report (EIR). These topics include Aesthetics/Light and Glare, Air Quality, Biological Resources, Hydrology and Drainage (including water quality), Land Use and Planning, Noise, Public Services (including water procurement), Traffic and Circulation, and Utilities. All other topics will be addressed as to the relevance and accuracy of the 2005 Final EIR.

The purpose of this Revised and Recirculated Draft EIR is to evaluate the potential environmental effects of the proposed Moon Camp project (Proposed Alternative Project) as is described in the Section 2, Project Description. Sections 4.1 through 4.9 of this EIR examine the potential environmental impacts associated with implementation of the Proposed Alternative Project. This analysis focuses on the following specific issues:

- Aesthetics/Light and Glare
- Air Quality
- Biological Resources
- Hydrology and Drainage
- Land Use and Planning
- Noise
- Public Services
- Traffic and Circulation
- Utilities

For each environmental issue in this section, the following subjects will be addressed:

Existing Conditions: This will contain a discussion of the existing conditions, services, and physical environment of the project site and vicinity as it relates to the topic. Specific references to literature or persons consulted during preparation of the Revised and Recirculated Draft EIR are indicated by their last name or firm acronym, with pages referenced to Section 8, Report Preparation Sources, or Section 9, References, as appropriate. The Existing Conditions section also indicates if or what comments were received from agencies or the public during circulation of the NOP.

Thresholds of Significance: Here we provide the environmental thresholds against which project impacts must be compared to determine whether an impact is significant. If locally established standards are not available, these criteria will be based on information from the CEQA Checklist, CEQA Guidelines, and/or other acceptable standards.

Project Impacts: This contains discussion of the impacts of the Proposed Alternative Project in qualitative and quantitative terms. The environmental analysis contained in this Revised and Recirculated Draft EIR uses the words “adverse” and “significant” in the discussion of potential environmental impacts. This section will also evaluate the Proposed Alternative Project’s consistency

with applicable General Plan goals and/or policies. The following adjectives are used specifically to define the degree of impact.

An “**adverse**” impact is any negative result of the project, however small. As a disclosure document, the finding of an impact as “adverse” merely indicates that the project will cause an impact to increase by some less than significant level compared to existing conditions. For example, removal of healthy, non-native trees from a vacant site might be considered adverse (i.e., “negative”) but it may not exceed a local threshold such as loss of native trees. Therefore, an impact may be adverse but it may not necessarily be significant (see below).

A “**significant**” impact is considered a substantial negative effect, one that exceeds some critical and accepted threshold for negative environmental effects. CEQA defines a significant effect on the environment as “...a substantial, or potentially substantial, adverse (i.e., negative) change in any of the physical conditions within the area by the project, including land, air, water, flora, fauna, ambient noise, and objects of historic or aesthetic significance” (CEQA Guidelines, §15382). As recommended in the new CEQA Guidelines, impacts are also identified as “**potentially significant**” prior to mitigation.

Standard Conditions and Uniform Codes: The Proposed Alternative Project will incorporate, where necessary or required, the standard conditions and uniform codes as required by the County and/or other responsible agency, except for those identified by separate agreement. For analytical purposes, compliance with these regulatory requirements is not considered mitigation. Where an otherwise significant impact is avoided, in whole or in part, due to the application of standard regulatory requirements or project features, the text will note that an issue of environmental concern exists and that it is addressed by a standard regulatory requirement. This precludes the use of mitigation measures that are a mere repetition of common practice, county planning/approval procedures, or laws that are applicable to the Proposed Alternative Project regardless of the CEQA process. This allows the document to focus on substantive mitigation measures.

Project Design Features: Through the evolutionary process of developing the Proposed Alternative Project land use plan, certain features to avoid or minimize environmental impacts have been incorporated into the Proposed Alternative Project; these are referred to as “project design features.”

Under each environmental issue area addressed in the Revised and Recirculated Draft EIR, all project design features that relate to the potential effects are clearly identified. To ensure implementation of project design features, these measures will be made conditions of project approval by the County. The County shall ensure compliance with all project design features through its standard procedures for the approval of permits and applications.

Mitigation Measures: These are measures to mitigate, avoid, or substantially lessen impacts identified as significant or potentially significant. For some impacts that have been identified as less

than significant, mitigation measures may be recommended to further lessen potential project impacts. As required by CEQA, this section will address all reasonably feasible mitigation measures that can reduce adverse impacts to below a level of significance. According to CEQA, the term “mitigation measures” refers to those items that are in addition to standard conditions, uniform codes, or project design features that may also reduce potential impacts. This section will also indicate if any of the proposed mitigation measures also have significant impacts.

Summary of Impact after Mitigation: An indication of whether or not any significant impacts remain following implementation of all reasonable and feasible mitigation measures.

Note that the cumulative impacts for each environmental topic are discussed in Section 5, Cumulative Impacts.

4.1 - Aesthetics

This section evaluates the potential impacts of the Proposed Alternative Project on scenic vistas or views and on any nearby scenic highways or corridors, and evaluates whether the Proposed Alternative Project would create a significant amount of light or glare in an area.

Visual resources are the natural and cultural features of the environment that can be seen by the public, and influence the aesthetic appeal an area may have for viewers. Visual resource impacts are normally associated with the visible contrast between proposed facilities and the existing elements of the surrounding landscape. They are especially important to areas where outdoor recreation draws tourism, as these places tend to also have unique natural resources which are enjoyed by people who specifically come to the area to experience these resources in their natural state.

The overall objective of this section is to describe existing landscape and visual resource conditions at the affected portions of the Proposed Alternative Project site and surrounding vicinity, to describe how changes in the Proposed Alternative Project have altered the effects to the aesthetic resources as compared to the Original Proposed Project, and to identify the impacts that could result from the implementation of the Proposed Alternative Project.

4.1.1 - Existing Conditions

The Moon Camp project site (Tentative Tract No. 16136) is located approximately midway along the north shore of Big Bear Lake, at the eastern edge of the Fawnskin Community. The 62.43-acre site slopes upward from the lakeshore and State Route 38 (SR-38) (Lakeshore Drive) from a lake surface elevation of approximately 6,747 feet above mean sea level (msl) to approximately 6,960 feet msl at the northeast boundary. Slopes vary from 5 to 40 percent and continue upward beyond the property to a ridgeline exceeding 7,800 feet msl on the north. The on-site variation in elevation is approximately 213 feet. The entire area is within a County of San Bernardino Scenic Resources Overlay, the purpose of which is to “provide development standards that will protect, preserve and enhance the aesthetic resources of the County.”

The site is endowed with a variety of flora and fauna, including Jeffrey pine forest, pebble plain habitat, and numerous species of birds, mammals, reptiles, amphibians, and insects. Man-made modifications of the site include SR-38, three non-operational water wells, dirt roads, numerous footpaths and trails.

The Jeffrey pine forest is moderately open (40-59 percent coverage) with scattered trees and very limited understory growth. A total of 2,772 trees with trunk diameters of 6 inches or more have been counted from aerial photographs. The understory growth consists of scattered chaparral shrubs and grasses. The overall visual effect is almost a park-like atmosphere rather than wild in nature. Houses and structures built on neighboring properties are also visible through the trees.

A small area (0.69 acre) of pebble plain habitat exists on a hillside near the western end of the project site. This endangered habitat consists of small cushion-forming plants, annuals, grasses and succulents that are well-spaced on a surface of clay soil mixed with pebbles and gravel. The area has been disturbed by unauthorized off-road traffic.

The lakeshore area nearest Big Bear Lake consists primarily of herbaceous species typical of saturated soils and several seeding cottonwood trees. Vegetation is patchy above the high-water level, where small stands of Jeffrey pine are interspersed with open meadows and grasslands and scattered patches of willow.

SR-38, which winds along the shoreline in an east-west direction through the site, has been designated by both the State of California and the County of San Bernardino as a “Scenic Highway.” In addition, the U. S. Forest Service (USFS) has designated SR-38 as a “scenic byway.” The meandering nature of the roadway paralleling the waterfront results in slower vehicle speeds and provides numerous vistas, through the trees, of the lake and surrounding mountains. At present, the roadway is narrow and there are few opportunities to park and view the lake.

Directly west and north of the site, along Canyon Road and Flicker Road, single-family homes are visible. Likewise, homes can be observed to the east and southeast of the site along SR-38 on both sides of the road. Views from Big Bear Lake toward the project site consist primarily of undeveloped lakefront and open pine forest and vacant land on gently sloping mountainside; however, at least a third of the site on the east lies behind the existing lakeshore residential development along SR-38.

Because the project site is currently undeveloped, there is no light or glare generated on the site. At night, headlights on vehicles traveling along SR-38 are visible on and off the site.

Scoping Meeting Comments

During the March 31, 2007, scoping meeting, questions and comments regarding aesthetics included the following:

- Will the building footprint and heights affect/impact views from existing neighboring homes?
- Address the proposed location of the marina and impacts to surrounding properties from light, noise, trash, and other issues.
- Will there be restrictions on building footprints?
- Address how 50 new homes will contribute to increased ambient noise and light in the vicinity.

Responses to these comments are included in the text of this section.

4.1.2 - Thresholds of Significance

The significance of potential aesthetic impacts was determined based upon the California Environmental Quality Act (CEQA) Guidelines (CCR §§ 15000-15387, Appendix G). The Proposed

Alternative Project would be considered to have a significant adverse aesthetic or visual impact if it were to result in any of the following:

- A substantial adverse effect on scenic vistas;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantial degradation of the existing visual character or quality of the site and its surroundings; or
- Creation of a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.1.3 - Project Impact Analysis

The impact analysis focuses on the degree to which the Proposed Alternative Project could directly or indirectly diminish or enhance the existing visual quality and character of the area from public viewing areas, such as SR-38 or Big Bear Lake.

Views

The Proposed Alternative Project differs substantially from the Original Proposed Project in the way it affects both the short range views and the long range views.

The views in the Original Proposed Project were significantly disrupted by the introduction of 31 residences to the lakefront and along the highway. These residences were highly visible from the lake, from the road, and in the view shed of existing residences situated above. In contrast, the Proposed Alternative Project has eliminated the lakeshore residences and a number of lots on the north side of the highway due to the introduction of almost 6 acres of open space conservation easements and a minimum lot size of one half acre. Another major difference between the Original Proposed Project and the Proposed Alternative Project is the removal of the highway realignment segment of the Original Proposed Project. The realignment would have dramatically affected the aesthetics, both by destroying the rural, undulating character of the scenic highway and by removal of significantly more trees to achieve the objective. Over 600 trees were spared with the elimination of the realignment feature.

View Looking West along Highway 38. Exhibits 4.1-1 and 4.1-2 show the view along SR-38 for existing conditions and simulated project conditions without a landscape buffer. The view is taken from the east side of the project as SR-38 enters the site. Lots 37, 38, and 39 are partially visible from this viewpoint. As indicated in the simulations, the lakeshore remains undisturbed. In this first impression of the project from the eastern approach, partial views of only 3 houses are visible in Exhibit 4.1-2. The winding configuration of SR-38 results in no more than 3 or 4 houses visible in one glance. Only 9 lots actually touch the SR-38 right-of-way and one third of the route through the site has no development on either side. With the eye drawn to the lake, the actual visual impression of added residential development will be relatively insignificant.

Views of the Marina. A principal visual alteration from the Original Proposed Project is the proposed marina, which has been reduced in size from the original 103 slips to only 55. The proposed marina will consist of roofless, floating docks that will be seasonally located at the site. During winter months, these floating docks will be stored off-site. The marina has also been relocated from the east to the west side of the project area. Relocation of the marina will result in less of an obstruction in the view from the existing residences in the most densely populated Fawnskin area, but will be more visible to the residences in the outlying areas where impacts are reduced by distance. Exhibit 4.1-3 is a view of the proposed marina site looking south from North Shore Drive towards the shoreline as it currently exists. Exhibit 4.1-4 is a simulated view of the proposed floating marina and associated parking and walkways looking south from North Shore Drive. Exhibit 4.1-5 is a “before” view of the marina site looking north from Big Bear Lake, and Exhibit 4.1-6 shows the simulated view of the marina in place with its associated boat launching ramp. As can be seen in these Exhibits, the proposed marina is a moveable floating facility with a low profile. The addition of boats in season will add dimension and height, but will also introduce color and interest to the shoreline. To the average recreationist, boats and activity are positive visual experiences.

Views from Flicker Road. The density of the units has been decreased in the Proposed Alternative Project and the units have been repositioned. As a result, the proposed lots are now arranged so that views of them are restricted to the area near the access roads, where one can look up the street and see houses but still experience the woodland. There would be very few houses visible from the water, as the shoreline set-back would give to homes within cover of the trees. With decreased density, the view of individual residences are also more open. Exhibits 4.1-7 and 4.1-8 illustrate the differences in the two projects (Original Proposed Project and Proposed Alternative Project) as seen from Flicker Road. Exhibit 4.1-7 demonstrates the Proposed Alternative Project with larger, more open lots. Exhibit 4.1-8 indicates the density of the Original Proposed Project. These exhibits demonstrate that views of the lake and SR-38 would be much more visible from the properties along Flicker Road with the revised / reduced density.

Views from Big Bear Lake. Perhaps the most significant visual difference in the Proposed Alternative Project is the elimination of all lakefront residential development south of SR-38. A visual simulation of the Proposed Alternative Project from the lake with and without development (as shown in Exhibits 4.1-9 through 4.1-10) demonstrates how much scenic vista has been preserved in the Proposed Alternative Project. The entire foreground south of SR-38 is relatively unaltered. Seen from a distance, development is very unobtrusive. With the addition of a landscape buffer, development will be minimally obtrusive even in the closer views, as demonstrated in Exhibit 4.1-10. The landscape buffer, coupled with the reduction of the overall density of the lots helps blend the sparse development into the trees and natural landscape.

Lighting

The Proposed Alternative Project would result in additional light sources during nighttime operation hours in an area where there are currently no sources of light. This project has the potential to affect both wildlife and the rural residential quality of the area. In order to diminish this effect, mitigation measures were introduced which include stricter control of light sources than provided by County ordinances. To minimize light pollution, lighting in the project area will be directed downward, be fully shielded and will be the minimum amount necessary for safe operations. Even with these measures, light pollution will remain an unavoidable impact, but at a greatly reduced level from the Original Proposed Project.

Temporary Impacts

Temporary impacts are generally associated with construction activities. The visual appearance of the site would be temporarily altered by grading and construction activity. The primary impact will be from construction of the access roads and improvement of SR-38. Since the residential lots will be sold for custom residences, construction activity on houses will be intermittent and individual. With custom housing lots, there is less likelihood of concurrent construction of multiple structures. Standard conditions and uniform codes help to preclude construction activities from causing excessive impacts, as they limit construction hours and impose dust and noise control measures. Additional mitigation measures were added to the 2005 Final Environmental Impact Report (EIR), including measures to locate the construction staging area away from the existing residential uses.

Summary of Impacts

Using the thresholds of significance identified in Section 4.1.2 above, aesthetic impacts are considered potentially significant. However, the Proposed Alternative Project would have substantially fewer aesthetic impacts than the Original Proposed Project. As mentioned previously, the attributes of the Proposed Alternative Project, including reduction in development intensity, elimination of the development of lakefront lots, elimination of the realignment of SR-38, reduction and relocation of the proposed marina, increase in permanently protected open space, and reduction in the number of trees removed from the site, enhance the aesthetic values of the project to reduce aesthetic impacts. With the implementation of Mitigation Measures A-1 through A-4, implementation of the Proposed Alternative Project would result in less than significant aesthetic impacts.

Level of Significance before Mitigation

Potentially Significant.

4.1.4 - Standard Conditions and Uniform Codes

As previously stated, the County of San Bernardino identifies the Moon Camp site within a Scenic Resources (SR) Overlay District and SR-38 as a County Scenic Highway. The State of California has also designated this portion of SR-38 as a "Scenic Highway," and the USFS has designated SR-38 as

a “scenic byway.” The intent of the SR Overlay District is to “provide development standards that will protect, preserve and enhance the aesthetic resources of the County.” The SR Overlay District also implements state and federal programs regarding scenic highway routes.

Provisions of the SR Overlay District apply to the following:

- Areas with unique views of the County’s desert, mountain and valley areas or any other aesthetic natural land formations; and
- An area extending 200 feet on both sides of the ultimate right-of-way of State or County designated Scenic Highways as set forth in the County General Plan (the area may vary with vegetation and topography along the right-of-way).

According to the provisions of the SR Overlay District, the following development standards and criteria are used to evaluate compliance with the intent of the SR Overlay District:

- **Building and Structure Placement.** Placement of buildings and structures shall be compatible with and should not detract from the visual setting or obstruct significant views.
- **Review Area.** The proposed project shall be designed to blend into the natural landscape and maximize visual attributes of the natural vegetation and terrain. Project design should also provide for the maintenance of a natural open space, which should be visible from the right-of-way.
- **Access Drives.** Right-of-way access drives should be avoided.
- **Landscaping.** The removal of native vegetation, especially trees, shall be minimized and replacement vegetation and landscaping shall be compatible with the local environment and, where practicable, capable of surviving with a minimum of maintenance and supplemental water. Landscaping and plantings should not obstruct significant views, either when installed or when they reach maturity.
- **Roads, Pedestrian Walkways, Parking and Storage Areas.** Any large scale development should restrict the number of access points by providing common access road. Parking and outside storage areas should be screened from view to the maximum extent possible from a Scenic Highway, by the placement of buildings and structures, or by landscaping and plantings which are compatible with the local environment. Where practicable, landscaping plantings must also be capable of surviving with a minimum of maintenance and supplemental water.
- **Above Ground Utilities.** Utilities shall be constructed and routed underground except in those situations where natural features prevent the underground siting or where safety considerations necessitate above ground construction and routing. Aboveground utilities shall be constructed and routed to minimize detrimental effects on the visual setting of the designated area. Where it is practical, above ground utilities shall be screened from view of the Scenic Highway by existing topography, or by placement of buildings and structures.

- **Grading.** The alteration of the natural topography of the site shall be minimized and shall avoid detrimental effects to the visual setting of the designated area and the existing natural drainage system. Alterations of the natural topography should be screened from view from either the scenic highway or the adjacent scenic or recreational resource by landscaping and planting which harmonize with the natural landscape of the designated area and which are capable of surviving with a minimum of maintenance and supplemental water.
- **Signs.** Primary freestanding signs greater than 18 square feet are prohibited in the SR Overlay District.

General Plan Goals, Policies, and Actions

The San Bernardino County General Plan lists several Goals, Policies and Actions related to the Aesthetics for this project and they will be incorporated into the development plan for this project. In the February 2007 Final Program EIR it states that:

“Many of the vistas that have been deemed as ‘scenic’ are located along roadways, especially throughout the Mountain and Desert regions. To ensure the quality and character of these locations are not compromised through obtrusive development, improvements of any kind are subject to additional land use and aesthetic controls outlined under the County’s Scenic Highway Overlay.”

These controls include, but are not limited to, the following:

- Review of proposed development along scenic highways to ensure preservation of scenic values for the traveling public and those seeking a recreational driving experience.
- Expanding the established right-of-way of a designated Scenic Corridor to extend 200 feet to either side, measured from the outside edge of the right-of-way.
- Development along these corridors will be required to demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present.
- More restrictive sign ordinance standards regarding visual quality and size will be imposed.
- New development will be required to provide ample recreation and scenic opportunities along Scenic Corridors.
- Development will be restricted along prominent ridgelines and hilltops.
- Site plans will be reviewed to determine that specific architectural design, landscaping and grading are done to prevent obstruction of scenic views and to blend with surrounding landscape.
- Off-site advertising signs (i.e., billboards) will be prohibited within and adjacent to all scenic corridors.

4.1.5 - Project Design Features

The Proposed Alternative Project has included design features intended to reduce aesthetic impacts, which the Original Proposed Project did not incorporate. These include:

- View envelopes for the existing and proposed residences are kept open to the greatest extent possible;
- View corridors are established; and
- Conservation easements, LOT A and LOT B on the Tentative Tract Map, although primarily intended for conservation of wildlife and vegetative resources, also serve as preservation of visual aesthetics in their natural state. They provide a buffer between the existing residences in Fawnskin, the proposed residential lots on the west side of the Moon Camp Project, and the waterline.

4.1.6 - Mitigation Measures

The following mitigation measures were developed in the December 2005 Final EIR and are included and modified as a result of the reduced density and redesign of the Proposed Alternative Project:

Short-Term Aesthetic/Light and Glare Impact Mitigation

- **A-1a** - Construction equipment staging areas shall be located away from existing residential uses. Appropriate screening (i.e., temporary fencing with opaque material) shall be used to buffer views of construction equipment and material, when feasible. Staging locations shall be indicated on Project Grading Plans.
- **A-1b** - All construction-related lighting associated with the construction of new roadways, improvements to SR-38 and the installation of utilities shall be located and aimed away from adjacent residential areas. Lighting shall use the minimum wattage necessary to provide safety at the construction site. A construction safety lighting plan shall be submitted to the County for review along with Grading Permit applications for the subdivision of the lots.

Long-Term Aesthetic Impact Mitigation

- **A-2a** - All homes shall provide a two-car garage with automatic garage doors.
- **A-2b** - New development shall be subordinate to the natural setting and minimize reflective surfaces. Building materials including siding and roof materials shall be selected to blend in hue and brightness with the surroundings. Colors shall be earth tones: shades of grays, tans, browns, greens, and pale yellows; and shall be consistent with the mountain character of the area.
- **A-2c** - Outside parking/storage areas associated with the boat dock activities shall be screened from view by the placement of landscaping and plantings which are compatible with the local

environment and, where practicable, are capable of surviving with a minimum of maintenance and supplemental water.

- **A-2d**- Construction plans for each individual lot shall include the identification and placement of vegetation with the mature height of trees listed. Landscaping and plantings should not obstruct significant views, within or outside of the project, either when installed or when they reach maturity. The removal of existing vegetation shall not be required to create views.
- **A-2e** - A Note shall be placed on the Composite Development Plan stating that during construction plans review and prior to issuance of building permits for each lot, the building inspector shall refer to the Mitigation Monitoring and Compliance Program regarding these aesthetic impact mitigation measures. The building inspector shall coordinate with the Advance Planning Division the review and approval of building plans in relation to these aesthetic impact mitigation measures, prior to approval and issuance of building permits.

Long-Term Scenic Highway Impact Mitigation

- **A-3a** - Any entry sign for the development shall be a monument style sign compatible with the mountain character, preferably, rock or rock appearance.
- **A-3b** - Prior to recordation of the tract map (and/or any ground disturbance, whichever occurs first), landscaping or revegetation plans for lettered lots (A through D) shall be submitted to and approved by the San Bernardino County Land Use Services Department.

Long-Term Light and Glare Impacts

- **A-4a** - All exterior lighting shall be designed and located as to avoid intrusive effects on adjacent residential properties and undeveloped areas adjacent to the project site. Low-intensity street lighting and low-intensity exterior lighting shall be used throughout the development to the extent feasible. Lighting fixtures shall use shielding, if necessary to prevent spill lighting on adjacent off-site uses.
- **A-4b** - Lighting used for various components of the development plan shall be reviewed for light intensity levels, fixture height, fixture location and design by an independent engineer, and reviewed and approved by the County Building and Safety Division to ensure that light emitted from the proposed project does not intrude onto adjacent residential properties.
- **A-4c** - The project shall use minimally reflective glass. All other materials used on exterior buildings and structures shall be selected with attention to minimizing reflective glare.
- **A-4d** - Vegetated buffers shall be used along SR-38 to reduce light intrusion on residential development and on forested areas located adjacent to the project site. The vegetation buffers shall be reflected on the master landscape plan submitted to and approved by the County Land Use Services Department prior to the issuance of the first grading permit.

- **A-4e** - All outdoor light fixtures shall be cutoff luminaries and only high- or low-pressure sodium lamps shall be used.
- **A-4f** - Mitigation Measures A-4a thru 4e shall be included within the Conditions, Covenants, and Restrictions (CC&Rs) of the Home Owner's Association (HOA).

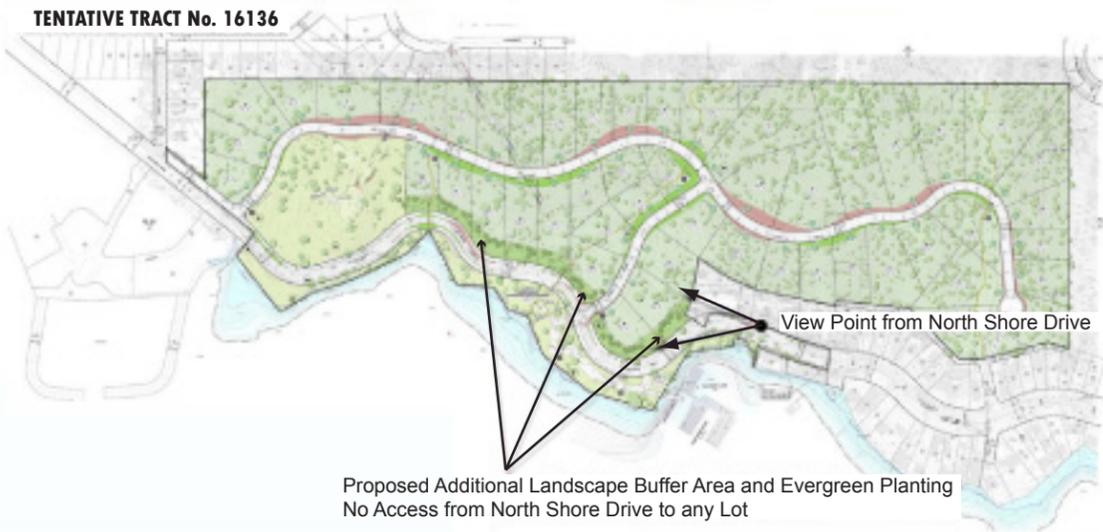
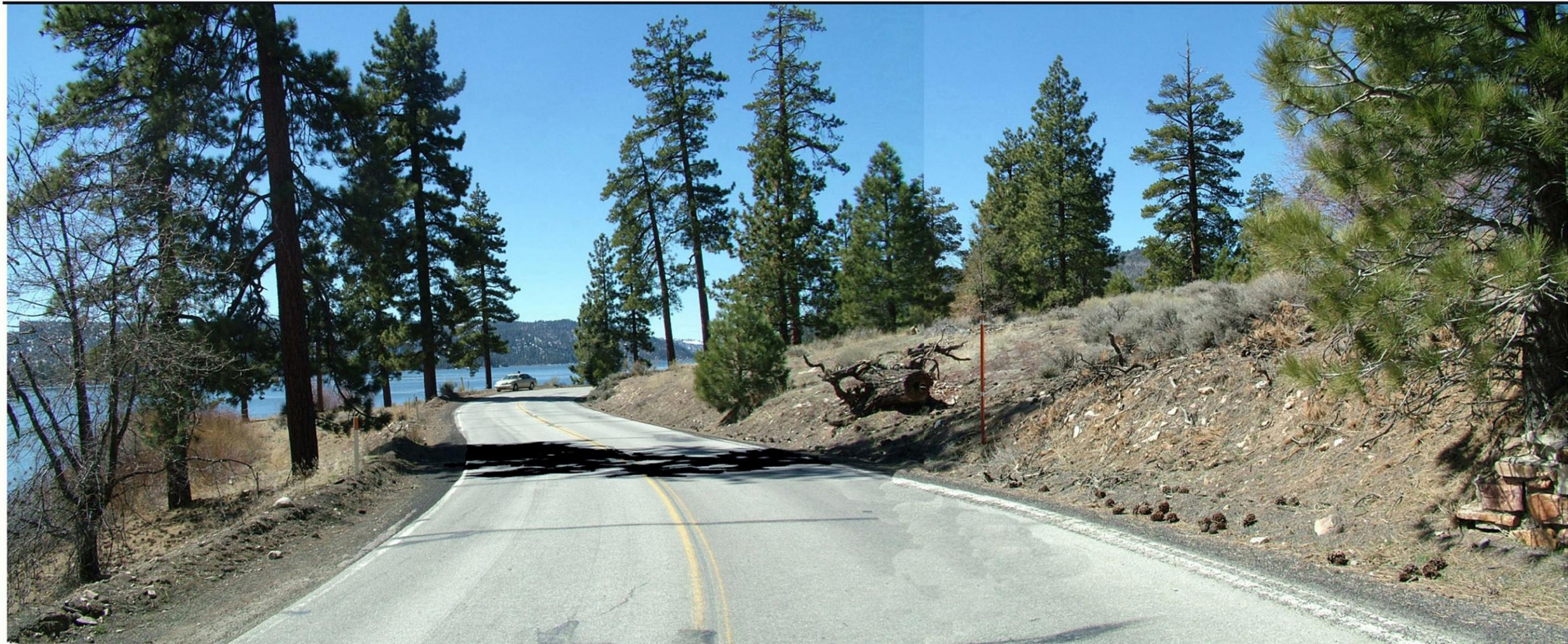
Cumulative Impact Mitigation

No mitigation measures are recommended for cumulative impacts.

No additions to the mitigation measures proposed in the 2005 Final EIR (as modified) are required.

4.1.7 - Level of Significance after Mitigation

Less than significant. The Proposed Alternative Project will permanently alter the aesthetics of the area near the lake and the scenic highway from natural open space to low density residential use. Implementation of mitigation measures along with standard conditions and CC&Rs will assist in blending this new neighborhood into the overall general character of the Fawnskin Community and reduce overall impacts to less than significant.



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



Not To Scale

Michael Brandman Associates

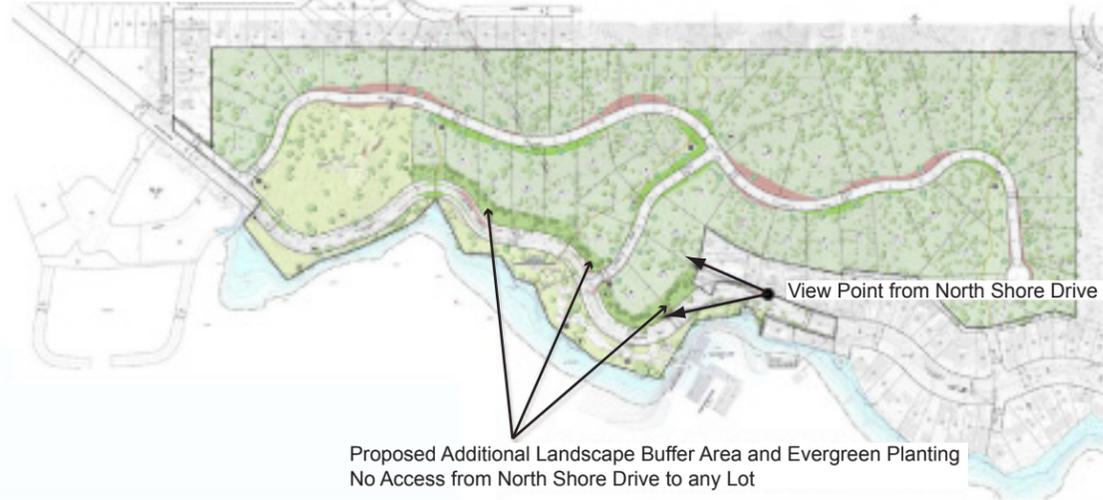
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Exhibit 4.1-1
Existing View Looking West from North Shore Drive

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



TENTATIVE TRACT No. 16136



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



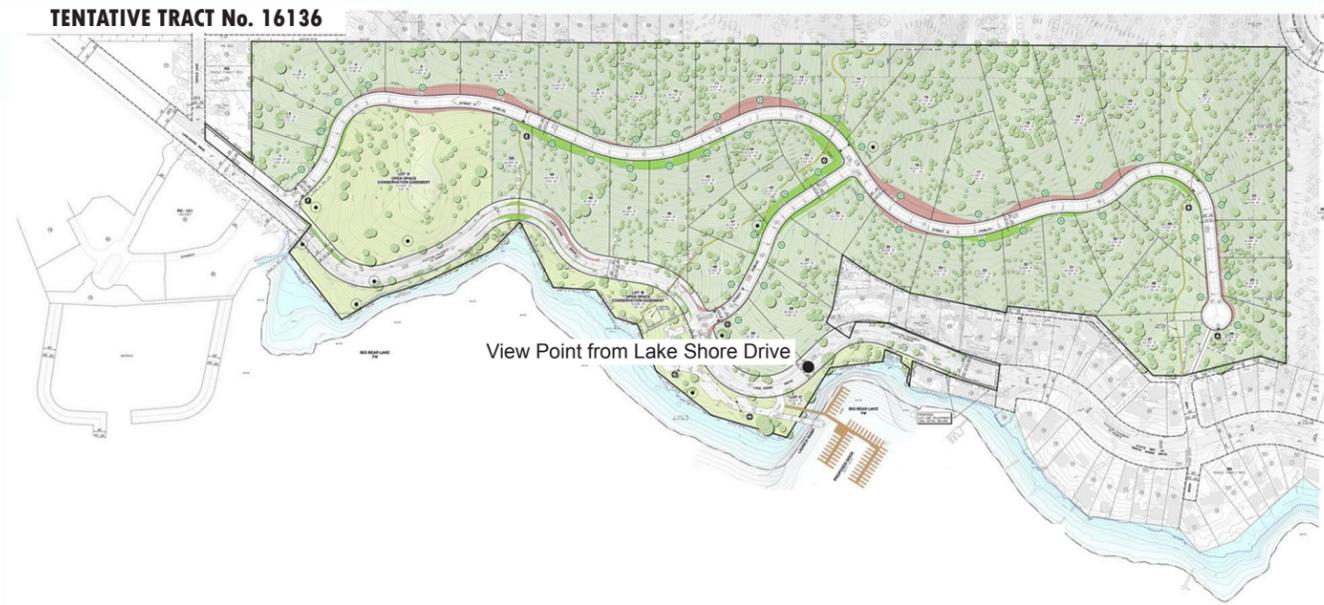
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Michael Brandman Associates

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Exhibit 4.1-2
Simulated View Looking West from North Shore Drive

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



Not To Scale

Michael Brandman Associates

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Exhibit 4.1-3
Existing View of Proposed Marina Looking South from North Shore Drive

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



Not To Scale

Michael Brandman Associates

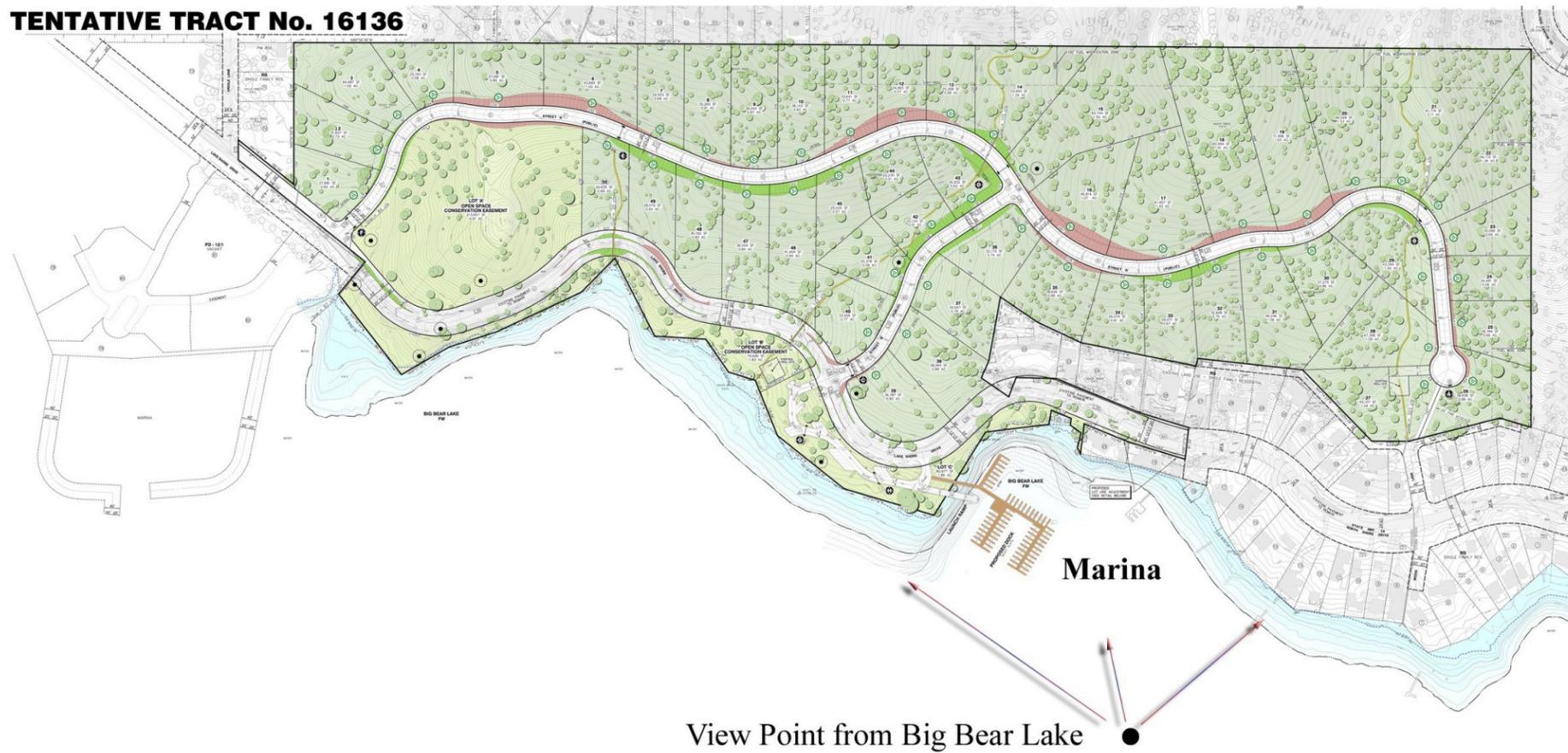
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Exhibit 4.1-4
Simulated View of Proposed Marina Looking South from North Shore Drive

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



TENTATIVE TRACT No. 16136



View Point from Big Bear Lake ●

Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



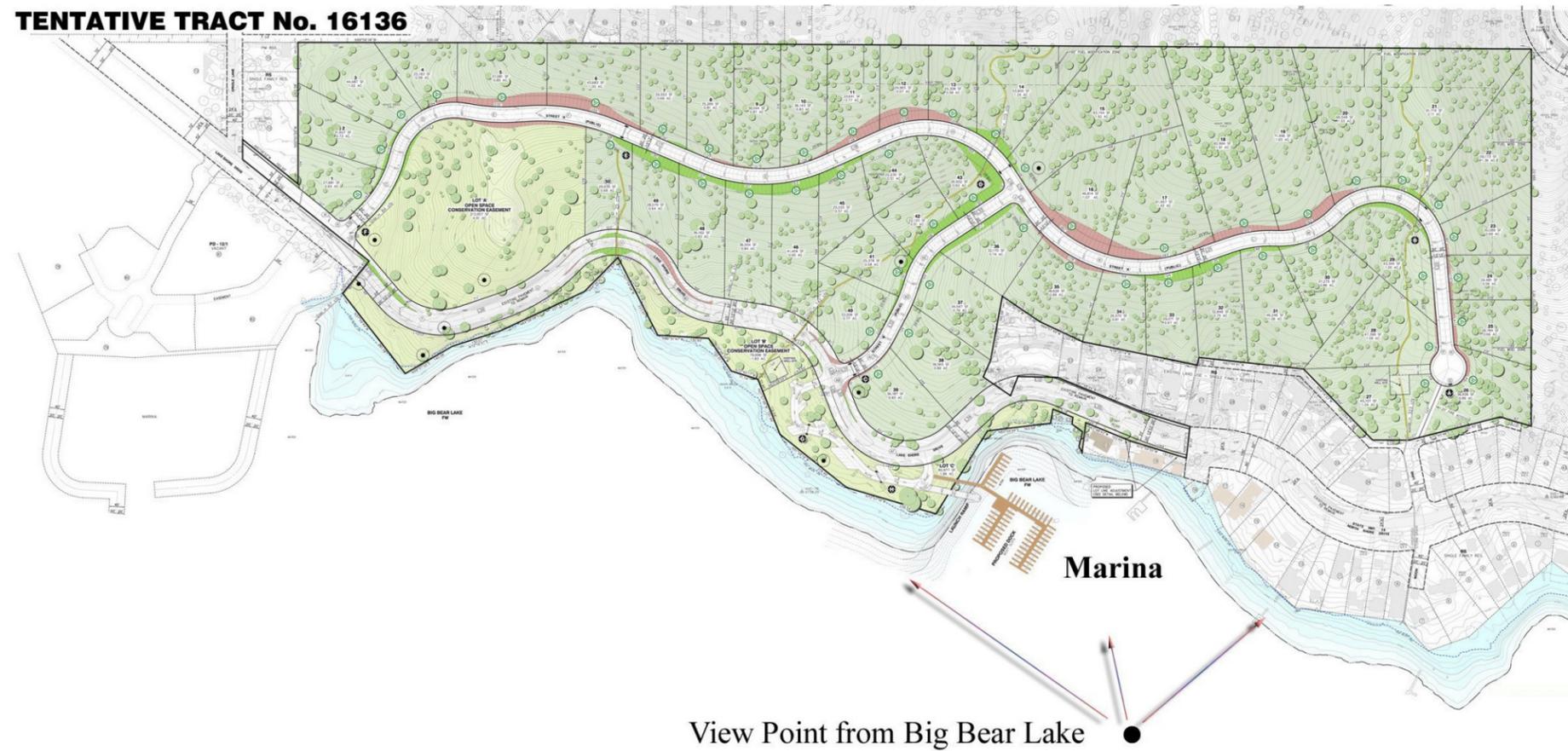
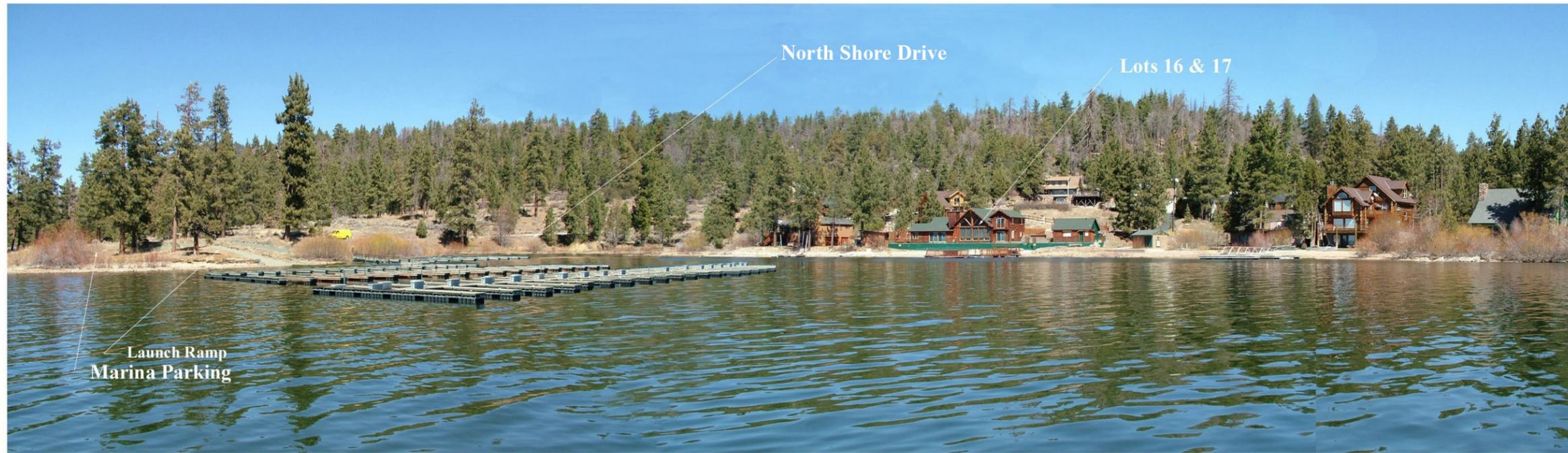
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Michael Brandman Associates

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Exhibit 4.1-5
Existing View of Proposed Marina Looking North from Big Bear Lake

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



Not To Scale

Michael Brandman Associates

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Exhibit 4.1-6
 Simulated View of Proposed Marina Looking North from Big Bear Lake

SAN BERNARDINO COUNTY
 MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



LOT 53

LOT 54



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



Not To Scale

Michael Brandman Associates

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Exhibit 4.1-7
Existing View Looking South from Flicker Road between Lots 53 & 54

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



LOT 53

LOT 54



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



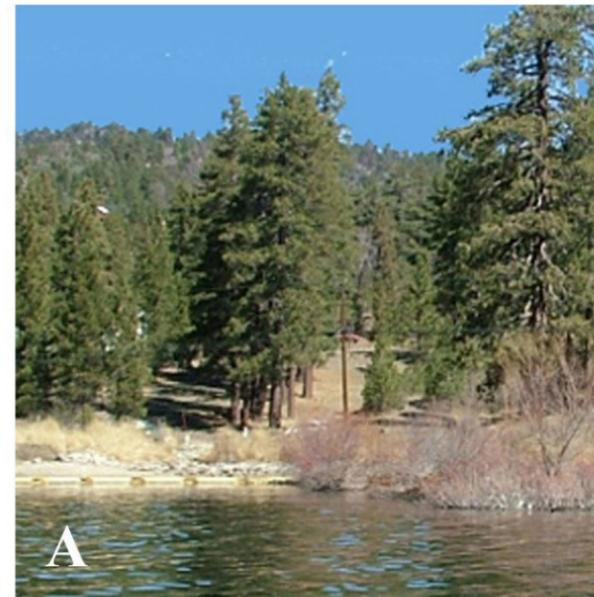
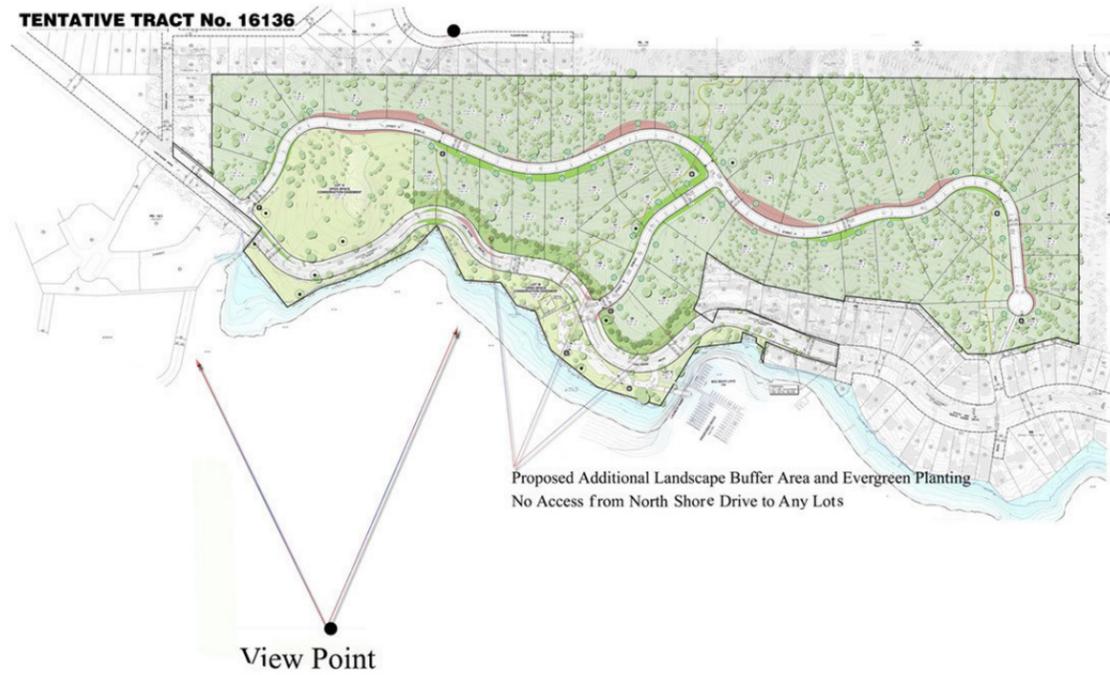
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Michael Brandman Associates

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Exhibit 4.1-8
Simulated View Looking South from Flicker Road between Lots 53 & 54

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



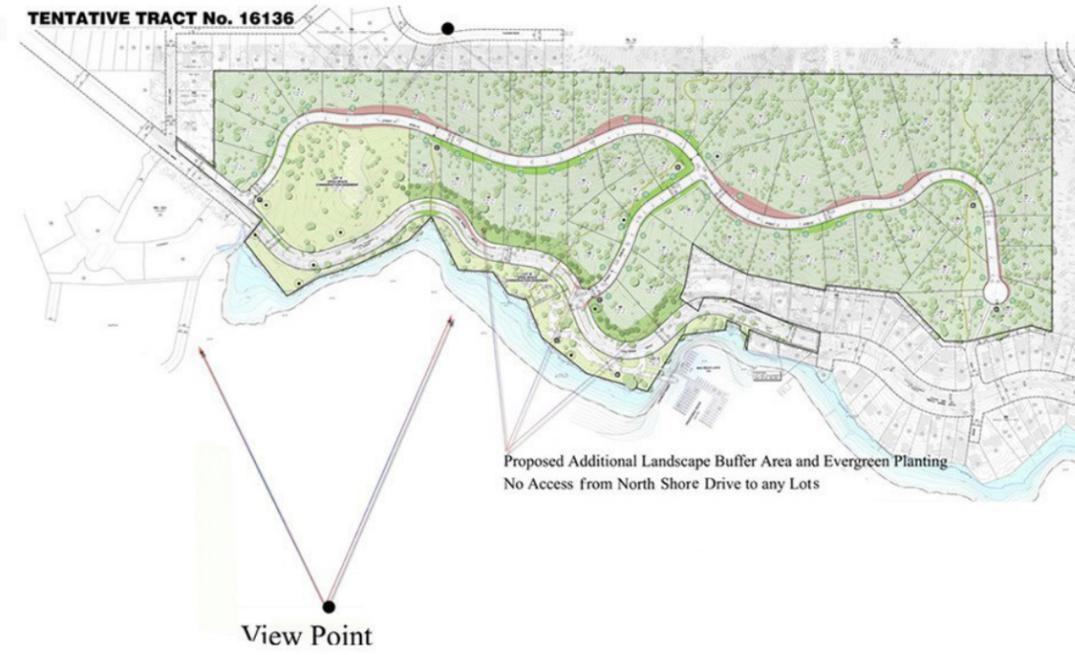
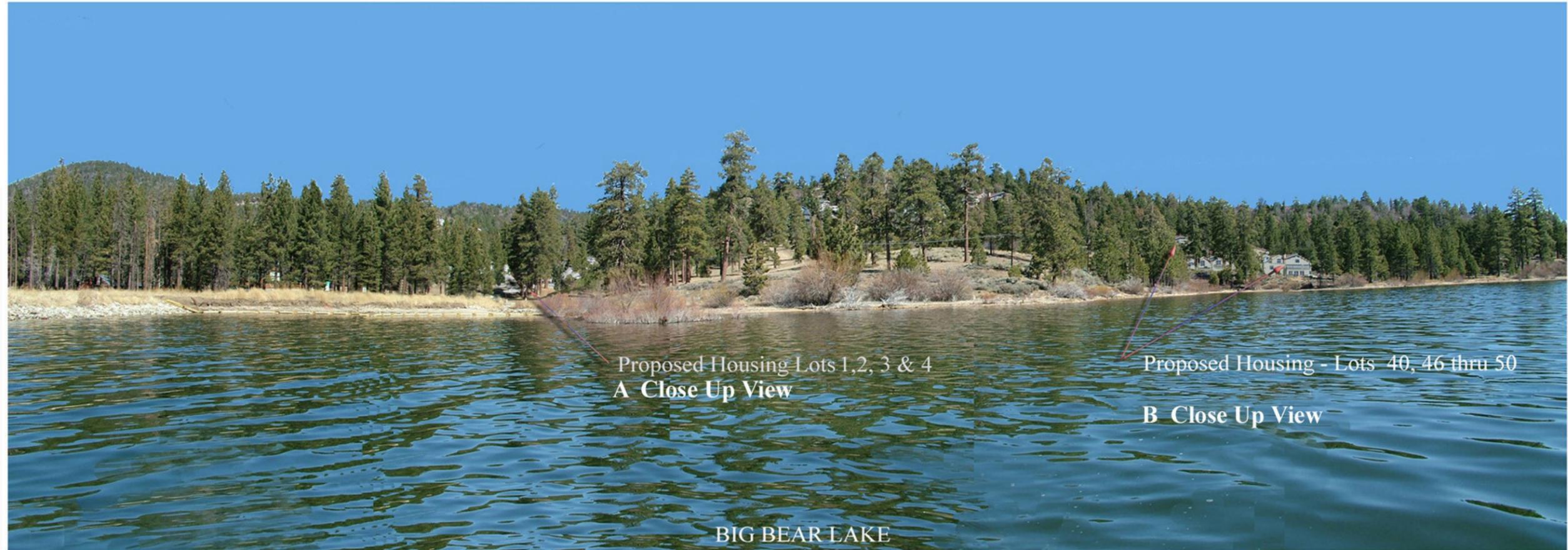
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Michael Brandman Associates

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Exhibit 4.1-9
Existing View Looking North from Big Bear Lake

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: Bauer Planning & Environmental Services Inc (September 26, 2007).



Not To Scale

Michael Brandman Associates

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Exhibit 4.1-10
 Simulated View Looking North from Big Bear Lake Landscape Buffer

SAN BERNARDINO COUNTY
 MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

4.2 - Air Quality

This section analyzes the potential air quality impacts that would result from the development of the Moon Camp Residential Development Proposed Alternative Project (50 residential lots) and is based on the “Air Quality Analysis Report, Moon Camp Tentative Tract, Community of Fawnskin, San Bernardino County, California” (MBA 2008) included as Appendix A of this document. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 et seq.). The methodology follows the CEQA Air Quality Handbook prepared by the South Coast Air Quality Management District (SCAQMD) for quantification of emissions and evaluation of potential impacts to air resources. As recommended by SCAQMD staff, URBEMIS 2002 version 8.7.0, developed and approved by the California Air Resources Control Board (CARB), was used to quantify some project-related emissions.

4.2.1 - Existing Conditions

The 62.43-acre project site is located adjacent to the northwest shore of Big Bear Lake, in the eastern portion of Fawnskin (refer to Exhibit 2-1, Regional Location 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 would construct a proposed subdivision consisting of 50 residential lots and seven lettered lots for open space, conservation, neighborhood lake access, well sites, a potential reservoir, and common area. Proposed lot sizes range from one half acre to over 2 acres, and the subdivision would be developed for custom lot sales. Overall density of the Proposed Alternative Project is 0.90 dwelling units per acre. Even though project-specific grading 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 of air quality assumes the construction of the homes.

4.2.2 - Regulatory Setting

Air pollutants are regulated at the international, national, state, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (EPA) regulates at the national level. CARB regulates at the state level and the SCAQMD regulates at the air basin level.

International Regulation and the Kyoto Protocol

Although there is no regulation of the emission of criteria pollutants regulated under the Federal Clean Air Act and California Clean Air Act regulations, there is a history of international regulation of greenhouse gas (GHG) emissions. In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States (U.S.) joined other countries around the world in signing the United Nations’ Framework Convention on Climate

Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan currently consists of more than 50 voluntary programs. The Kyoto protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. Some have estimated that if the commitments outlined in the Kyoto protocol are met, global GHG emissions could be reduced an estimated 5 percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the U.S. is a signatory to the Kyoto protocol, Congress has not ratified the Protocol and the U.S. is not bound by the Protocol's commitments.

Federal and State Regulatory Agencies

The EPA sets national vehicle and stationary source emission standards; oversees approval of all State Implementation Plans (SIPs); provides research and guidance in air pollution programs; and sets National Ambient Air Quality Standards (NAAQS), also known as federal standards. There are NAAQS for six common air pollutants, called criteria air pollutants, which were identified resulting from provisions of the Clean Air Act of 1970.

The six criteria pollutants are:

- Ozone;
- Particulate matter (PM₁₀ and PM_{2.5});
- Nitrogen dioxide;
- Carbon monoxide (CO);
- Lead; and
- Sulfur dioxide.

The NAAQS were set to protect the health of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants.

CARB has overall responsibility for statewide air quality maintenance and air pollution prevention. The SIP for the State of California is administered by CARB. A SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain NAAQS. CARB also administers California ambient air quality standards, or state standards, for the ten air pollutants designated in the California Clean Air Act (CCAA). All of the national criteria pollutants are also regulated by the State, with four additional pollutants added in California. These additional State air pollutants are:

- Visibility reducing particulates;
- Hydrogen sulfide;
- Sulfates; and
- Vinyl chloride.

The national and state ambient air quality standards and the most relevant effects are summarized in Table 4.2-1.

Regulatory Setting

In order to determine the significance of air quality impacts that would result from project implementation, those impacts, along with existing air quality levels, must be compared to ambient air quality standards. These standards represent the levels of air quality considered safe, with an adequate margin of safety to protect the public health and welfare.

South Coast Air Quality Management District (SCAQMD)

The air pollution control agency for the South Coast Air Basin (Basin) is the SCAQMD. SCAQMD is responsible for controlling emissions primarily from stationary sources, and maintains air quality monitoring stations throughout the Basin. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the Basin. An AQMP is a plan prepared by an air pollution control district for a county or region designated as a nonattainment area for bringing the area into compliance with the requirements of the national and/or California ambient air quality standards. The term “nonattainment area” is used to refer to an air basin where ambient air quality standards are exceeded. In conjunction with CARB and Southern California Association of Governments (SCAG), SCAQMD prepared the 2007 revisions to its AQMP.

The 2007 AQMP employs up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources.

The 2007 AQMP demonstrates attainment with the federal 8-hour ozone standard and for PM_{2.5}, replaces the 2003 attainment demonstration for the federal CO standard and maintenance plan for CO for the future; and updates the maintenance plan for the federal NO₂ standard that the Basin has met since 1992.

The 2007 AQMP also addresses several state and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP is consistent with and builds upon the approaches taken in the 2003 and 1997 AQMP and the 1999 Amendments to the SCAB SIP for the attainment of the federal ozone air quality standard.

Each revision of the AQMP represents a snapshot in time, based on the best available information. Generally, the 2007 AQMP is very similar in structure to the 2003 AQMP, the 1997 AQMP, and the 1999 Amendments to the SIP, but like all new editions it includes significant enhancements. The key updates incorporated in the 2007 AQMP are summarized as follows:

- Revised emissions inventory projections using 2002 as the base year, the CARB on-road motor vehicle emissions model EMFAC2007, and SCAG 2004 Regional Transportation Plan (RTP) forecast assumptions;

- Revised control strategy that updates remaining control measures from the 2003 AQMP, 1997/1999 SIP, and incorporation of new control measures toward attainment of the federal 8-hour ozone and PM_{2.5} standards based on current technology assessments;
- Reliance on updated modeling tools for attainment demonstration relative to ozone,
- PM₁₀ and PM_{2.5}; and
- Attainment demonstration of the federal 8-hour ozone and PM_{2.5} standards.

The 2007 AQMP employs up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. While many technical tasks are still underway to complete the Plan revision, there is sufficient information to begin framing policy discussions on clean air strategies. Hence, the Draft Plan has been prepared and is being released for early public review and participation.

The 2007 AQMP proposes attainment demonstration of the federal PM_{2.5} standards through a more focused control of SO_x, directly emitted PM_{2.5}, and NO_x supplemented with volatile organic compound (VOC) by 2014. The 8-hour ozone control strategy builds upon the PM_{2.5} strategy, augmented with additional VOC reductions to meet the standard by 2020. An extended attainment date (i.e., additional three years) is allowed under the Clean Air Act if a “bump-up” request is made by the state showing the need for such extension.

The 2007 AQMP proposes policies and measures currently contemplated by responsible agencies to achieve federal standards for healthful air quality in the Basin. The 2007 AQMP also addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

Local Government

Jurisdiction over the Proposed Alternative Project resides in San Bernardino County. The County of San Bernardino adopted a General Plan in 2007. The General Plan contains the goals, policies, and implementing actions for a variety of issues including natural and man-made hazards and natural and man-made resources; sets the framework for decision-making regarding the County's long-term development and utilization of resources; provides the data and analyses to support that decision-making framework; provides the rules by which land can be developed (what, where, and under what conditions); provides a consensus vision of what the citizens and Board of Supervisors want for the County's future; and establishes the operating rules for achieving that vision. Listed below are policies and programs contained in the General Plan that are pertinent to the protection of air quality.

Land Use Element

- **LU 8.1** – Potentially polluting, hazardous, and other health risk facilities should be located no closer than one-quarter mile to a sensitive receptor and vice versa.
- **LU 8.2** – Review development proposals to minimize impacts, such as air emissions, on sensitive receptors.
- **LU 9.2** – Discourage leap-frog development and urban sprawl by restricting the extension or creation of new urban services or special districts to areas that cannot be sustained in a fiscally responsible manner.

Circulation and Infrastructure Element

- **CI 3.1** – Encourage the reduction of automobile usage through various incentive programs.
- **CI 4.2** – To reduce the dependence on the automobile for local trips, integrate transportation and land use planning at the community and regional levels by promoting transit-oriented development (TOD), where appropriate and feasible.
- **CI 6.1** – Require safe and efficient pedestrian and bicycle facilities in residential, commercial, industrial, and institutional developments to facilitate access to public and private facilities and to reduce vehicular trips. Install bicycle lanes and sidewalks on existing and future roadways, where appropriate and as funding is available.
- **CI 6.3** – Retain residual road dedication that may result whenever a road is changed to a lower highway designation, thus reducing the required right-of-way, until it is determined that such dedication will not be needed for bicycle, pedestrian or equestrian trail purposes.
- **M/CI 1.10** – Support the development of park and ride transit service in the mountain communities.
- **M/CI 1.11** – When population and residential densities permit or warrant, develop shuttle services from residential neighborhoods to recreational areas and major commercial centers.

Housing Element

- **H 2.5** – Continue to evaluate residential developments with emphasis on energy-efficient design and siting options that are responsive to local climatic conditions and applicable laws.
- **H 2.10** – Encourage the use of energy conservation features in residential construction, remodeling, and existing homes.

Conservation Element

- **CO 4.1** – Because developments can add to the wind hazard (due to increased dust, the removal of wind breaks, and other factors), the County will require either as mitigation measures in the appropriate environmental analysis required by the County for the development proposal; or as conditions of approval if no environmental document is required; and that developments in areas identified as susceptible to wind hazards to address site-specific analysis of:

- a.) Grading restrictions and/or controls on the basis of soil types, topography, or season.
 - b.) Landscaping methods, plant varieties, and scheduling to maximize successful revegetation.
 - c.) Dust-control measures during grading, heavy truck travel, and other dust generating activities.
- **CO 4.2** – Coordinate air quality improvement technologies with the SCAQMD and the Mojave Air Quality Management District (MAQMD) to improve air quality through reductions in pollutants from the region.
 - **CO 4.3** – The County will continue to ensure through coordination and cooperation with all airport operators a diverse and efficient ground and air transportation system, which generates the minimum feasible pollutants.
 - **CO 4.4** – Because congestion resulting from growth is expected to result in a significant increase in the air quality degradation, the County may manage growth by insuring the timely provision of infrastructure to serve new development.
 - **CO 4.5** – Reduce emissions through reduced energy consumption.
 - **CO 4.6** – Provide incentives such as preferential parking for alternative-fuel vehicles (e.g., Compressed Natural Gas (CNG) or hydrogen (H₂)).
 - **CO 4.8** – Replace existing vehicles in the County fleet with the cleanest vehicles commercially available that are cost-effective and meet the vehicle use needs.
 - **CO 4.9** – Manage the County’s transportation fleet fueling standards to improve the number of alternative fuel vehicles in the County fleet.
 - **CO 4.10** – Support the development of alternative fuel infrastructure that is publicly accessible.
 - **CO 4.11** – Establish programs for priority or free parking on County streets or in County parking lots for alternative fuel vehicles.
 - **CO 4.12** – Provide incentives to promote siting or use of clean air technologies (e.g., fuel cell technologies, renewable energy sources, UV coatings, and hydrogen fuel).
 - **CO 8.6** – Fossil fuels combustion contributes to poor air quality. Therefore, alternative energy production and conservation will be required, as follows:
 - a) New developments will be encouraged to incorporate the most energy-efficient technologies that reduce energy waste by weatherization, insulation, efficient appliances, solar energy systems, reduced energy demand, efficient space cooling and heating, water heating, and electricity generation.
 - b) All new subdivisions for which a tentative map is required will provide, to the extent feasible, for future natural heating or cooling opportunities in the subdivision. This can be accomplished by design of lot size and configuration for heating or cooling from solar exposure or shade and breezes, respectively.

- c) For all new divisions of land for which a tentative map is required, a condition of approval will be the dedication of easements, for the purpose of assuring solar access, across adjacent parcels or units.
- **CO 8.8** – Promote energy-efficient design features, including appropriate site orientation, use of lighter color roofing and building materials, and use of deciduous shade trees and windbreak trees to reduce fuel consumption for heating and cooling.
 - **CO 8.9** – Promote the use of automated time clocks or occupant sensors to control central heating and air conditioning.

4.2.3 - Air Pollutants

Criteria air pollutants are those pollutants that have been determined by EPA or CARB to have detrimental health effects for “sensitive” populations such as people with asthma, children, and older adults and for which health criteria have been established. Criteria air pollutants have historically been reported in three main categories – stationary sources, areawide sources, and mobile sources. Stationary sources are those that generate emissions from a stationary location, usually associated with manufacturing and industrial sources. Areawide sources are sources of emissions which are widely distributed and produce many emissions, individually small but collectively significant, such as consumer products, fireplaces, and solvent evaporation. Mobile source emissions are associated with motor vehicles and include on-road and off-road sources. On-road sources are emissions from vehicles, trucks, motorcycles, buses, etc. Off-road sources include equipment and vehicles in the following sectors: recreational, construction, mining, industrial, lawn and garden, farm, airport service, and rail. A brief summary of most recognized pollutants of concern follows:

- **Carbon Monoxide (CO):** A colorless, odorless toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline or diesel fuel). CO levels tend to be highest during the winter months, when the meteorological conditions favor the accumulation of the pollutants.
- **Ozone:** A photochemical oxidant that is formed when reactive organic gases and oxides of nitrogen (both byproducts of internal combustion engines) react in the presence of ultraviolet sunlight. Ozone is a very energetic combination of three oxygen atoms that, when it comes into contact with a surface, releases its force as chemical energy. When this happens to biological systems (i.e., the respiratory tract and plants), this energy can cause damage to sensitive tissues.
- **Oxides of nitrogen (NO_x):** NO_x is a mixture of nitric oxide and nitrogen dioxide in the atmosphere. Nitric oxide is from a byproduct of fuel combustion and quickly reacts with oxygen to form nitrogen dioxide. NO_x emissions contribute to the formation of ozone and particulate matter. The only form of NO_x that exists at a level to cause public health concerns is nitrogen dioxide.
- **Sulfur dioxide and sulfates:** In California, sulfur is emitted during the combustion of petroleum-derived fuels (i.e., gasoline and diesel fuel) that contain sulfur. During combustion,

sulfur is oxidized to sulfur dioxide (a colorless pungent gas). The sulfur dioxide is then converted to sulfate compounds in the atmosphere.

- **Lead:** Lead is a heavy metal that can accumulate in bone, soft tissue, and blood and can damage the kidneys, liver, and nervous system, and can result in learning disabilities, seizures, and death. Lead concentrations once exceeded the state and national air quality standards by a wide margin, but have not exceeded state or national air quality standards in the area for at least 10 years. Lead is no longer an additive in gasoline, which is the main reason the concentration of lead in the air is low.
- **Suspended PM₁₀ and PM_{2.5}:** Particulate matter is a mixture of small particles that consists of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM₁₀ refers to particulate matter that is 10 microns or less in diameter (1 micron is one-millionth of a meter). PM_{2.5} refers to particulate matter that is 2.5 microns or less in diameter. Sources include road dust, diesel soot, erosion of soil, combustion particles (ashes and soot), and tire and brake abrasion.
- **Volatile organic compounds (VOCs):** VOCs are organic compounds that readily evaporate. Reactive organic gases (ROGs) consist of nonmethane and oxygenated hydrocarbons. Although all VOCs are not necessarily ROGs, the terms are often interchanged. There are no state or national ambient air quality standards for VOCs; however, they are regulated because they are involved in chemical reactions that contribute to the formation of ozone. In addition, some hydrocarbon components classified as VOCs (i.e., benzene) are thought or known to be hazardous. Sources of VOCs include adhesives, solvents, paints, cooking, fuel, and combustion. VOC can interfere with oxygen uptake and can cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis.
- **Diesel particulate matter (DPM):** A subset of particulate matter that is a matter of concern is DPM. Diesel exhaust is a mixture of many particles and gases that is produced when an engine burns diesel fuel. Many compounds found in diesel exhaust are carcinogenic, including sixteen that are classified as possibly carcinogenic by the International Agency for Research on Cancer. DPM includes the particle-phase particles in diesel exhaust. Components of DPM include elemental and organic carbon. Elemental carbon is carbon that has had hydrogen taken from it. Organic carbon contains molecules containing carbon and hydrogen, and can also contain oxygen, sulfur, and nitrogen. Exposure to diesel exhaust can cause immediate health effects. Some of the health effects include eye, nose, and throat irritation as well as cough, nausea, and phlegm. The elderly, children, people with allergies, and those with asthma, emphysema, and chronic heart and lung disease are more susceptible to the effects of diesel exhaust is a mixture of many particles and gases that is produced when an engine burns diesel fuel. Many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase particles in diesel exhaust. Some of the health effects of DPM include eye, nose, and throat irritation as well as cough, nausea, and phlegm.

- GHGs: Certain atmospheric gases act as an insulating blanket for solar energy to keep the global average temperature in a suitable range, and help to regulate the climate by absorbing infrared radiation in the atmosphere and allowing incoming solar radiation to pass through the atmosphere. These gases are called “greenhouse gases” (GHGs) because they trap heat like the glass walls of a greenhouse. Some GHGs include water vapor, methane, carbon dioxide (CO₂), nitrous oxide, ozone, halogenated fluorocarbons, perfluorinated carbons, and hydrofluorocarbons. The most common GHG is CO₂, which constitutes approximately 84 percent of all GHG emissions in California (CEC, 2006).
 - Water vapor (H₂O) is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to ‘hold’ more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a “positive feedback loop.” The extent to which this positive feedback loop will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth’s surface and heat it up). There are no health effects from water vapor itself; however, when some pollutants come in contact with water vapor, they can dissolve and the water vapor can then act as a pollutant-carrying agent. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include: evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.
 - Carbon dioxide (CO₂) is an odorless and colorless GHG. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. Carbon dioxide is emitted from natural and manmade sources. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood. Carbon dioxide is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks. Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in

scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30 percent. Left unchecked, the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources.

- Methane (CH₄) is an extremely effective absorber of radiation, though its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (10-12 years), compared to other GHGs. No health effects are known to occur from exposure to methane. Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil fuel combustion and biomass burning.
- Nitrous oxide (N₂O), also known as laughing gas, is a colorless GHG. Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's Lesions (brain damage). Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). Nitrous oxide is produced by microbial processes in soil and water, including those reactions, which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant (i.e., in whipped cream bottles). It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction.
- Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C₂H₆) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs are no longer being used; therefore, it is not likely that health effects would be experienced. Nonetheless, in confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation. CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady

or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

- Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a ($\text{CF}_3\text{CH}_2\text{F}$), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were of HFC-23. HFC-134a emissions are increasing due to its use as a refrigerant. The U.S. EPA estimates that concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each; and that concentrations of HFC-152a are about 1 ppt. No health effects are known to result from exposure to HFCs, which are manmade for applications such as automobile air conditioners and refrigerants.
- Perfluorocarbons (PFCs) have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above Earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The U.S. EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt. No health effects are known to result from exposure to PFCs. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.
- Visibility reducing particles: Visibility reducing particles are suspended particulate matter. Visibility is the distance through the air that can be seen without the use of instrumental assistance. The 8-hour state standard is the extinction coefficient of 0.23 kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent. Visibility reducing particles are not assessed in this report; however, particulate matter is assessed.
- Vinyl chloride: Vinyl chloride is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride is a known carcinogen. The 24-hour state standard for vinyl chloride is 0.01 ppm. The proposed project is not expected to generate or be exposed to vinyl chloride because its uses do not include the chemicals processes that create this pollutant. Therefore, it is not assessed in this report.
- Hydrogen sulfide: Hydrogen sulfide is a flammable, colorless, poisonous gas that smells like rotten eggs. It can irritate the eyes and respiratory tract and cause symptoms like headache, nausea, vomiting, and cough. The 1-hour state standard for hydrogen sulfide is 0.03 ppm. Sources include the combustion of sulfur containing fuels (oil and coal) and organic matter that undergoes putrefaction. It is used in the production of heavy water for nuclear reactors, the manufacture of chemicals, in metallurgy, and as an analytical reagent. The proposed project is

not expected to cause exposure to hydrogen sulfide because it will not generate hydrogen sulfide in any substantial quantity. Therefore, hydrogen sulfide is not assessed in this analysis.

4.2.4 - Physical Setting

Local Climate

Ambient Air Quality Standards

The national and state standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. The health effects of a pollutant are a factor of the dose of the pollutant, the length of exposure, the pollutant's properties, and the body's ability to excrete the pollutant. Table 4.2-1 refers to the current national and state standards, as well as the relevant health effects.

Local Climate

As previously stated, the Proposed Alternative Project is located near the community of Fawnskin, on the north shore of Big Bear Lake in San Bernardino County. This region is located within the Basin. Regional and local air quality is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day.

The presence and intensity of sunlight are necessary prerequisites for the formation of ozone. Under the influence of the ultraviolet radiation of sunlight, certain primary pollutants (mainly VOC and NO_x) react to form a secondary pollutant – ozone. Since this process is time dependent, ozone can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time-delayed nature of ozone, concentrations are highest in the inland areas of Southern California. However, a majority of the smog in the Big Bear Valley is created by the transport of pollutants from Los Angeles, Riverside, and San Bernardino counties, as opposed to local sources.

The climate in the Basin is characterized by moderate temperatures and comfortable humidity with precipitation generally limited to a few storms during the winter season (November through April). The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit (°F). More specifically, the Community of Fawnskin enjoys an Alpine climate. The Community is located in an area that intercepts water-laden clouds that can result in rainfall and/or snow. Precipitation at Big Bear Lake's National Weather Service station from 1960 to 2006 averaged about 18 inches for the six-month period from November to April and the average snowfall for January, February, and March is above 14 inches per month. The area's watershed is mountainous with steep upper slopes leading to a mildly sloping valley. The coolest month of the year is January, with a mean monthly temperature of 33.7 °F. The warmest month is July, with a mean monthly temperature of 63.9 °F.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Los Angeles region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal areas and around the Los Angeles area is

transported inland until it reaches the mountains where the combination of mountains and inversion layers generally prevent further dispersion. The area in which the Community of Fawnskin is located offers approximately 300 days/year of clear skies and sunshine and is above the typical inversion altitudes of the Los Angeles area; however, it is still susceptible to air inversions. This traps a layer of stagnant air near the ground where it is further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, wood stoves, and other sources.

Local Air Quality

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. SCAQMD has divided the basin into 38 Source Receptor Areas (SRA) for evaluation purposes and operates monitoring stations within each one. Existing levels of ambient air quality and historical trends and projections of air quality in the project area are best documented from measurements made near the project site. SCAQMD operates an air monitoring station in Big Bear City, approximately 4 miles east of the project, but it only measures PM_{2.5}. The nearest site that measures PM₁₀, which is operated by the MDAQMD, is located approximately 10 miles north of the project in Lucerne Valley at the Middle School. The nearest ozone monitor is operated by the SCAQMD located at Lake Gregory – Crestline, approximately 20 miles west of the project site. Table 4.2-2 summarizes 2004-2006 published monitoring data for the nearest monitors. The SCAQMD and CARB have decided that the only pollutant of concern enough to be monitored in the area where the project is located is PM_{2.5}. PM₁₀ and ozone monitoring information are supplied for informational purposes but may not represent accurate localized conditions of the project site.

Table 4.2-2: San Bernardino Mtn. Air Quality Monitoring Summary

Air Pollutant, Averaging Time (Units)	2004	2005	2006
Ozone - Crestline			
Max 1 Hour (ppm)	0.163	0.182	0.164
Days > CAAQS (0.09 ppm)	75	80	73
Days > NAAQS (0.12 ppm)*	9	18	–
Max 8 Hour (ppm)	0.145	0.145	0.142
Days > CAAQS (0.070 ppm)*	–	119	103
Days > NAAQS (0.08 ppm)	66	69	59
Particulate Matter (PM₁₀) – Lucerne Valley			
Mean (µg/m ³)	18.1	19.1	23.0
24 Hour (µg/m ³)	47	57	50
Days > CAAQS (50 µg/m ³)	0	1	0
Days > NAAQS (150 µg/m ³)	0	0	0
Particulate Matter (PM_{2.5}) – Big Bear City			
Mean (µg/m ³)	NA	NA	NA
24 Hour (µg/m ³)	28.6	38.7	40.0
Days > NAAQS (35 µg/m ³)	0	0	0

Table 4.2-2 (cont.): San Bernardino Mtn. Air Quality Monitoring Summary

Air Pollutant, Averaging Time (Units)	2004	2005	2006
Abbreviations:			
> = exceed	ppm = parts per million	$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter	
NA = not available	max = maximum	Mean = Annual Arithmetic Mean	
CAAQS = California Ambient Air Quality Standard	NAAQS = National Ambient Air Quality Standard		
Note: NAAQS for 1-hour ozone and the CAAQS for 8-hour are presented for the years the standards were in effect			
Source: CARB Air Quality Data/Statistics/Top 4 Summary, 6/1/2007.			

Local Sources of Air Pollutants

The project area is primarily a resort area with recreational activities for all four seasons. The primary source of local pollution is vehicular in both summer and winter, with the addition of wood smoke during the winter. Recreational boating is also a CO and VOC source.

Rules Applicable to the Proposed Alternative Project

The rules and regulations that apply to this project include but are not limited to the following:

- SCAQMD Rule 403, which governs emissions of fugitive dust. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour (mph), sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites.
- SCAQMD Rule 1108 governs the sale, use, and manufacturing of asphalt and limits the ROG content in asphalt used in the South Coast Air Basin. Although this rule does not directly apply to the Proposed Alternative Project, it does dictate the ROG content of asphalt available for use during the construction.
- SCAQMD Rule 1113 governs the sale, use, and manufacturing of architectural coating and limits the ROG content in paints and paint solvents. Although this rule does not directly apply to the Proposed Alternative Project, it does dictate the ROG content of paints available for use during the construction of buildings.
- SCAQMD Rule 402 governs the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Alternate Forms of Transportation

The Mountain Area Regional Transit Authority (MARTA) is the primary public transportation provider on the mountaintop, providing local and off-the-mountain bus service to the Big Bear Valley, Running Springs, Lake Arrowhead, Crestline, and San Bernardino. The agency operates both fixed route and demand-response services (Dial-A-Ride). MARTA has connecting services to Metrolink, Omnitrans, and Greyhound.

Attainment Status

Air basins where ambient air quality standards are exceeded are referred to as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are classified as severe, serious, or moderate as a function of deviation from standards.

The current attainment designations for the project area are shown in Table 4.2-3. The “attainment year” is the goal of the existing 2003 AQMP and 2007 AQMP. The basin is in state non-attainment for ozone, PM₁₀, and PM_{2.5}, and is in federal nonattainment for ozone, CO, PM₁₀, and PM_{2.5}. Note that CO is still classified as “serious nonattainment” for the federal CO standard even though the attainment date has passed and the basin met the CO standard by December 2002. In 2004, SCAQMD requested that EPA re-designate the basin as in attainment with the CO ambient air quality standard, but EPA has not made a formal action to do so. The 2003 AQMP served as a maintenance plan for CO, and the 2007 AQMP is an update to that maintenance plan.

Table 4.2-3: SCAB Attainment Status

Pollutant	State Status	National Status [Attainment Year]
Ozone (1-hour)	Non-attainment	Not Subject
Ozone (8-hour)	Non-attainment	Severe Non-attainment [2021]
Carbon Monoxide	Attainment	Serious Non-attainment [2000]
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
PM ₁₀	Non-attainment	Serious Non-attainment [2006]
PM _{2.5}	Non-attainment	Non-attainment [2015]
Source: State Status from CARB, 2006. National Status from U.S. EPA, 2007.		

4.2.5 - Global Climate Change

Gases that trap heat in the atmosphere are called GHGs. The greenhouse effect is analogous to the way a greenhouse retains heat, and raises the temperature of the earth’s surface by about 60 °F. With the natural greenhouse effect, the average temperature of the earth is about 45 °F; without it, the earth

would be about -15 °F. Global warming is an average rise in the earth's temperature, which can cause changes in climate. It is normal for the earth's temperature to fluctuate over extended periods of time. Over the past one hundred years, however, the earth's average global temperature has generally increased by 1 °F. Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect. While the increase in temperature is known as "global warming", the resulting change in weather patterns is known as "global climate change." Global climate change is evidenced in changes to wind patterns, storms, precipitation, and air temperature. Historical records have shown that temperature changes have occurred in the past, such as during previous ice ages, but some data indicates that the current temperature record differs from previous climate changes in rate and magnitude.

Common GHGs include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Both natural processes and human activities emit GHGs. However, it is believed that emissions from human activities, such as electricity production and vehicle exhaust, have elevated the concentration of these gases in the atmosphere, leading to a trend of unnatural warming of the Earth's climate, known as global warming or climate change.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of GHGs at 400-450 ppm carbon dioxide-equivalent concentration is required to keep global mean warming below 2 degrees Celsius, which is assumed to be necessary to avoid dangerous climate change (IPCC 2001).

The State of California is a substantial contributor of global GHGs as it is the second largest contributor in the U.S. and the sixteenth largest in the world (CEC 2006). The California Energy Commission calculated that in 2004 California produced 492 million metric tons of carbon dioxide equivalent (CEC 2006).

An individual project cannot generate enough GHG emissions to effect a discernible change in global climate. However, the Proposed Alternative Project may participate in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on global climate change. Because these changes may have serious environmental consequences, this section will evaluate the potential for the Proposed Alternative Project to have a significant effect upon California's environment as a result of its potential contribution to the enhanced greenhouse effect.

Federal Regulation

In the past, the U.S. EPA has not regulated GHGs under the Clean Air Act because it asserted that the Act did not authorize it to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the

increase in global surface air temperatures. However, the U.S. Supreme Court recently held that the EPA must consider regulation of motor-vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, twelve states and cities, including California, together with several environmental organizations, sued to require the EPA to regulate GHGs as pollutants under the Clean Air Act (127 S. Ct. 1438 (2007)). The Court ruled that GHGs fit within the Clean Air Act's definition of a pollutant and that the EPA did not have a valid rationale for not regulating GHGs. Despite the Court's ruling, to date the EPA has not promulgated regulations on GHG emissions; however, Congress is currently working on legislation that would address GHGs.

State Regulation

There has been significant legislative activity regarding global climate change and GHGs in California. California Assembly Bill 1493 (Pavley), enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by the ARB would apply to 2009 and later model year vehicles. The ARB estimates that the regulation would reduce climate change emissions from the light-duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030.

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S 3-05, the following GHG emission reduction targets:

1. By 2010, reduce GHG emissions to 2000 levels;
2. By 2020, reduce GHG emissions to 1990 levels; and
3. By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Climate Action Team

To meet these targets, the Governor directed the Secretary of the Cal EPA to lead a Climate Action Team (CAT) made up of representatives from the Business, Transportation and Housing Agency; the Department of Food and Agriculture; the Resources Agency; the Air Resources Board; the Energy Commission; and the Public Utilities Commission. The CAT's Report to the Governor in 2006 (2006 CAT Report) contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

AB 32

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. In adopting this legislation (commonly known as AB 32), the State initiated a long-term program for the development of GHG emissions reduction measures. AB 32 focuses on reducing GHG emissions in California and requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. GHGs, as defined under AB 32, include carbon dioxide, methane, nitrous oxide, HFCs, PFCs, and SF₆. The ARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming in order to reduce emissions of

GHGs. AB 32 required ARB to determine what the statewide GHG emissions level was in 1990 and approve a statewide GHG emissions limit by January 1, 2008, so it may be applied to the 2020 benchmark. Currently, GHG levels have been estimated at 600 MMTs of CO₂ equivalent, while 1990 levels have been estimated to be 427 MMTs. Accordingly, emissions need to be reduced by 173 MMTs by 2020.

On December 11, 2008, CARB adopted a scoping plan to reduce GHG emissions to 1990 levels. The Scoping Plan's recommendations for reducing GHG emissions to 1990 levels by 2020 include emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, as well as Voluntary Early Actions and Reductions. CARB has until January 1, 2011, to adopt the necessary regulations to implement that plan. Implementation of individual measures must begin no later than January 1, 2012, so that the emissions reduction target can be fully achieved by 2020. CARB is currently drafting regulations to implement the plan.

SB 97

AB 32, however, did not amend CEQA or establish regulatory standards to be applied to new development or environmental review of projects within the state. Accordingly, the Legislature adopted Senate Bill 97 (SB 97) in August 2007. SB 97 requires the California Office of Planning and Research (OPR) to prepare and transmit new CEQA guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the Resources Agency by July 1, 2009. These guidelines for mitigation must address, but are not limited to, GHG emissions and effects associated with transportation and energy consumption. Following receipt of these guidelines, the Resources Agency must certify and adopt the guidelines prepared by OPR by January 1, 2010.

OPR

OPR released preliminary draft CEQA Guideline amendments for GHG emissions on January 8, 2009, and submitted its final proposed guidelines to the Secretary for Natural Resources on April 13, 2009. Of note, the final proposed guidelines state that a lead agency shall have discretion to determine whether to use a quantitative model or methodology, or in the alternative, rely on a qualitative analysis or performance based standards. Proposed CEQA Guideline § 15064.4(a) "A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project, and which methodology to use; or (2) rely on a qualitative analysis or performance based standards."

In its draft CEQA Guideline amendments, OPR does not identify a threshold of significance for GHG emissions, nor does it prescribe assessment methodologies or specific mitigation measures. Instead, it calls for a "good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions resulting from a project." The draft amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The draft amendments also

encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The Natural Resources Agency will begin a formal rulemaking process to certify and adopt the amendments as part of the state regulations implementing CEQA. Consistent with SB 97, the Natural Resources Agency should complete this process by January 2010. Until these Guidelines are approved, OPR's June 2008 Technical Advisory provides interim advice to lead agencies regarding the analysis of GHG emissions in environmental documents. The Technical Advisory encourages lead agencies to follow three basic steps: (1) identify and quantify the GHG emissions that could result from the proposed project; (2) analyze the effects of those emissions and determine whether the effect is significant, and (3) if the impact is significant, identify feasible mitigation measures or alternatives that will reduce the impact below a level of significance.

CARB's Preliminary Draft Staff Proposal for Interim Significance Thresholds

Although OPR was tasked with updating the CEQA guidelines for GHGs, OPR asked CARB in its Technical Advisory to recommend GHG-related CEQA significance thresholds to assist lead agencies in their significance determination. CARB Staff released a draft proposal on October 24, 2008, with interim guidance on significance thresholds. In its proposal, Staff noted that non-zero thresholds can be supported by substantial evidence, but thresholds should nonetheless be sufficiently stringent to meet the State's interim (2020) and long-term (2050) emissions reduction targets. CARB staff believes that zero thresholds are not mandated in light of fact that: (1) some level of emissions in the near-term and mid-century is still consistent with climate stabilization, and (2) current and anticipated regulations apart from CEQA will proliferate and increasingly will reduce GHG contributions of past, present and future projects. The CARB proposal takes different approaches for different sectors – (1) industrial projects and (2) residential and commercial projects.

CARB Staff has proposed a numerical threshold for the GHG emissions of industrial projects of 7,000 metric tons per year, which is intended to require some form of mitigation from 90 percent of all projects; however, no numerical threshold has been proposed for commercial (and residential) projects. For residential and commercial projects, CARB Staff recommends that if a project complies with a previously approved plan that addresses GHG emissions, it would not have a cumulatively considerable incremental contribution to impacts identified in the previously approved plan, and has a number of specific attributes related to meeting and monitoring GHG targets, then it will not be considered to have significant GHG emissions. Alternatively, if those standards cannot be met, Staff recommends a threshold based on implementation of performance standards, or equivalent mitigation measures, addressing energy use, transportation, water use, waste and construction.

The draft proposal has been very controversial and Staff will be bringing a revised draft to the Board in the future. A key preliminary conclusion from the draft thresholds, however, is that CARB Staff, in setting a numerical threshold for industrial projects and suggesting performance standards, does not believe a "zero threshold" is mandated by CEQA. Similarly, SCAQMD staff, in proposing interim

industrial thresholds, explicitly stated in a December 5, 2008, report that a zero threshold would not be feasible to implement.

SCAQMD

The SCAQMD is currently in the process of developing a threshold of significance for GHG emissions. Although the SCAQMD threshold would technically only apply to projects for which SCAQMD was acting as a CEQA lead agency, the proposed threshold methodology is nonetheless instructive, and is based on a “Tiered Decision Tree” approach based on the concept of business-as-usual (BAU). This approach contains a series of tiers to evaluate a project, starting with exemptions (Tier 1), continuing through consistency with regional plan GHG budgets (Tier 2), quantitative screening level threshold (Tier 3), performance standards (Tier 4), to application of emission offsets (Tier 5).

The SCAQMD’s GHG CEQA Significance Thresholds Working Group released a draft threshold methodology in August 2008 (SCAQMD 2008b), and the most recent screening level proposed by staff was 6,500 metric tons of CO₂ equivalent per year (6,500 MT/year CO₂). This screening level was derived using the SCAQMD’s existing NO_x operational threshold as a basis. The daily NO_x operational significance threshold, 55 pounds per day was annualized, which results in 10 tons of NO_x per year. Projects with GHG emissions less than the screening level are considered to be small projects, that is, they would not likely emit amounts of GHGs to be considered significant pursuant to CEQA.

Senate Bill 375

In September of 2008, the California legislature adopted SB 375, legislation which: (1) relaxes CEQA requirements for some housing projects that meet goals for reducing greenhouse-gas emissions and (2) requires the regional governing bodies in each of the state’s major metropolitan areas to adopt, as part of their regional transportation plan, “sustainable community strategies” that will meet the region’s target for reducing GHG emissions. SB 375 creates incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions. SB 375 also directs CARB to develop regional GHG emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035.

CARB will determine the level of emissions produced by cars and light trucks, including S.U.V.s, in each of California’s 17 metropolitan planning areas. Emissions-reduction goals for 2020 and 2035 would be assigned to each area. CARB appointed a Regional Targets Advisory Committee (RTAC) on January 23, 2009 to provide recommendations on factors to consider and methodologies to use in this target setting process. RTAC must provide recommendations to CARB by September 30, 2009, whereupon CARB must propose draft targets by June 10, 2010 and adopt final targets by September 30, 2010.

Local governments would then devise strategies for housing development, road building and other land uses to shorten travel distances, reduce driving and meet the new targets. If regions develop these integrated land use, housing, and transportation plans, residential projects that conform to the sustainable community strategy (and therefore contribute to GHG reduction) can have a more streamlined environmental review process.

California Air Pollution Control Officers Association White Paper

The California Air Pollution Control Officers Association (CAPCOA) released a white paper in January 2008 entitled “CEQA & Climate Change,” which discussed three alternative thresholds, including a no significance threshold, a zero increase threshold, and a non-zero threshold, as well as multiple analysis options. The white paper is a resource guide developed to support local governments, and details tools for GHG assessment, emission models, and mitigation strategies to reduce potentially significant GHG emissions from a project.

Local Public Agencies

The California Attorney General sued San Bernardino County based on the County’s General Plan Update EIR. That case resulted in a settlement agreement between the County and the California Attorney General’s office, filed with the Central District Superior Court of San Bernardino County on August 28, 2007. Under the settlement agreement, the County agreed to prepare an amendment to the General Plan to add a policy that describes the County’s goal of reducing GHG attributable to the County’s discretionary land use decisions and internal government operations. The County also agreed to prepare a GHG Emissions Reduction Plan. The settlement agreement details the contents of the GHG Emission Reduction Plan, including GHG inventories and emission reduction targets. Both the General Plan amendment and the GHG Emission Reduction Plan should be completed within 30 months of the execution of the settlement agreement. The settlement agreement also contains provisions for diesel engine exhaust control measures to be implemented by the County.

Greenhouse Gases

Potential Environmental Effects

Worldwide, average temperatures are likely to increase by 1.8 degrees Celsius (°C) to 4°C, or approximately 3 °F to 7 °F, by the end of the 21st Century (IPCC 2007a). However, a global temperature increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependant on multiple variables, such as topography. One region of the Earth may experience increased temperature, increased incidents of drought and similar warming effects, whereas another region may experience a relative cooling. According to the IPCC’s Working Group II Report, Climate Change impacts to North America may include (IPCC 2007b): diminishing snowpack; increasing evaporation; exacerbated shoreline erosion; exacerbated inundation from sea level rising; increased risk and frequency of wildfire; increased risk of insect outbreaks; increased experiences of heat waves; and, rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations.

For California, Climate Change has the potential to incur/exacerbate the following environmental impacts (CAT 2006):

- Increased frequency, duration, and intensity of conditions conducive to air pollution formation (particularly ozone);
- Reduced precipitation;
- Changes to precipitation and runoff patterns;
- Reduced snowfall (precipitation occurring as rain instead of snow);
- Earlier snowmelt;
- Decreased snowpack;
- Increased agricultural demand for water;
- Intrusion of seawater into coastal aquifers;
- Increased agricultural growing season;
- Increased growth rates of weeds, insect pests and pathogens;
- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of wildfire events; and,
- Expansion of the range and increased frequency of pest outbreaks.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-laying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

4.2.6 - Thresholds of Significance

The following significance thresholds were derived from Appendix G of the CEQA Guidelines. A significant impact would occur if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or protected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Contribute to a significant global climate change impact by conflicting with GHG emission reduction strategies.
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people; or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone).

While the formulation of the thresholds of significance is within the purview of the lead agency pursuant to §15064(b) of the State CEQA Guidelines, the SCAQMD recommends that the following quantitative air pollution thresholds be used by the lead agencies in determining whether the proposed project could result in a significant impact. If the lead agency finds that a proposed project has the potential to exceed these air pollution thresholds, the project should be considered significant. These thresholds have been defined by SCAQMD for the SCAB based on scientific data the SCAQMD has obtained and factual data within the federal and state Clean Air Acts. Since the Proposed Alternative Project is located within the SCAB and current air quality in the project area is typical of the air basin as a whole, and because the SCAQMD is the regulatory agency that has authority over air quality regulations and has special knowledge in this regard, the thresholds set by the SCAQMD are appropriate to use to determine the significance of air quality impacts resulting from the Proposed Alternative Project. Each of these threshold factors is discussed below.

4.2.7 - Regional Significance Thresholds

The following regional significance thresholds have been established by SCAQMD. Projects within the Basin region with construction- or operation-related emissions in excess of any of the thresholds presented in Table 4.2-4 are considered significant:

Table 4.2-4: SCAQMD Regional Thresholds

Pollutant	Construction (pounds per day)	Operation (pounds per day)
Oxides of Nitrogen (NO _x)	100	55
Volatile Organic Compounds (VOC)	75	55
Particulate Matter (PM ₁₀)	150	150
Particulate Matter (PM _{2.5})	55	55
Oxides of Sulfur (SO _x)	150	150
Carbon Monoxide (CO)	550	550
Source: South Coast Air Quality Management District, 2006.		

4.2.8 - Local Significance Thresholds

Construction

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds (LSTs), which is consistent with SCAQMD's Environmental Justice Enhancement Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable state or national ambient air quality standard. The LSTs are developed based on the ambient concentrations of that pollutant for each source receptor area and are applicable to NO_x, CO, PM₁₀, and PM_{2.5}.

The Proposed Alternative Project is located in Source Receptor Area 38. Even though the Proposed Alternative Project’s construction activity is limited to the construction of the interior streets and infrastructure and no grading of individual lots is proposed, in order to evaluate worst-case conditions, it is assumed that construction on the 50 lots will occur over a 12 month period and that a maximum of 4 acres would be disturbed per day. Using the 2003-2005 look-up tables provided in the LST Guidelines for a conservative 5 acres per day disturbed at a receptor distance of 25 meters, Table 4.2-5 shows the appropriate LSTs for construction activity.

Table 4.2-5: SCAQMD Localized Thresholds for Construction

Pollutant	Localized Significance Threshold (lbs/d)
Nitrogen Dioxide (NO ₂)	439
Carbon Monoxide (CO)	1,363
Particulate Matter (PM ₁₀)	14
Particulate Matter (PM _{2.5})	9
Source: South Coast Air Quality Management District, 2003 and 2006.	

LSTs for operational emissions only apply to onsite sources. Since the primary source of emissions for this project is associated with offsite vehicle trips, an LST analysis of long-term emissions is not required.

Nuisance

The SCAQMD has a regulation that governs the discharge from any source such quantities of air contaminants, which cause a nuisance or annoyance to any considerable number of persons or to the public. Creating the potential for a violation of the SCAQMD’s Nuisance Rule (Rule 402) would create a potentially significant effect.

4.2.9 - Global Warming Project Level Thresholds

There are several unique challenges to analyzing global warming under CEQA, largely because of its “global” nature. Typical CEQA analyses address local actions that have local – or, at most, regional – impacts, whereas global warming presents the considerable challenge of analyzing the relationship between local and global activities and the resulting potential, if any, for local and/or global environmental impacts. Most environmental analyses examine the “project-specific” impacts that a particular project is likely to generate. With regard to global warming, however, it is generally accepted that the magnitude of global warming effects is so substantial and the contribution of an individual project to global warming is so extremely minuscule that direct significant adverse impacts (albeit not necessarily cumulative significant adverse impacts) would be highly unlikely.

The issue of GHG emissions and global climate change (GCC) is also fundamentally different from any other areas of air quality impact analysis, which are all linked to some region or area in which the

impact is significant. Instead, a global climate change analysis must be conducted on a global level, rather than the typical local or regional setting, and requires consideration of not only emissions from the project under consideration, but also the extent of the displacement, translocation, and redistribution of emissions. In the usual context, where air quality is linked to a particular location or area, it is appropriate to consider the creation of new emissions in that area to be an environmental impact whether or not the emissions are truly “new” emissions to the overall globe. In fact, the approval of a new developmental plan or project does not necessarily create new automobile drivers—the primary source of a land use project’s emissions. Rather, new land use projects merely redistribute existing mobile emissions; accordingly, the use of models that measure overall emissions increases without accounting for existing emissions will substantially overstate the impact of the development project on global warming. Overstating the impacts can lead to a misallocation of resources in seeking solutions to GHG emissions and climate change-related problems. This makes an accurate analysis of GHG emissions substantially different from other air quality impacts, where the “addition” of redistributed emissions to a new locale can make a substantial difference to overall air quality.

Generally, the evaluation of an impact under CEQA requires measuring data from a project against a “threshold of significance” (see CEQA Guidelines §15064.7). For global warming, there is not, at this time, an established “threshold of significance” by which to measure an impact. CEQA also requires projects to be evaluated for consistency with “applicable general plans and regional plans” (see CEQA Guidelines §15125(e)). Such plans would include, for example, “the applicable air quality attainment or maintenance plan.” These plans involve legislative or regulatory programs applicable to all projects within the region. They establish standards that are independent of the impact analysis described in the CEQA Guidelines (see provisions beginning with Section 15126). The program for GHG emission reductions and maintenance, which ultimately is intended to result from AB 32, would likely constitute such a regional plan when adopted. However, under AB 32, that program does not yet exist and is not expected to be in place for several years. Therefore, there is no local, regional or statewide plan regulating global warming by which the Proposed Alternative Project can be measured. As stated above, OPR asked CARB to recommend a method for setting thresholds of significance. CARB is in the process of establishing GHG thresholds of significance, but they have not yet been adopted at this time.

Notwithstanding these analytical challenges, CEQA Guidelines §15002(a)(1) states that one of the basic purposes of CEQA is to “[i]nform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.” Therefore, even if not “typical” under CEQA, this evaluation of the Proposed Alternative Project’s potential for contribution to global climate change will analyze that potential in a manner and to an extent reasonably consistent with the policy underpinnings of CEQA.

This analysis is the result of the County’s thorough investigation of the impact of the Proposed Alternative Project on global climate change, including a review of Executive Order S-305, AB 32 and the legislative intent behind AB 32, as well as extensive review of scientific literature regarding global

warming and global climate change. Every effort has been made to maximize the disclosure of information to the public, fairly present the potential for significant adverse effects as a result of global warming, and identify the potential to minimize the potential global warming impacts of the Proposed Alternative Project.

It must be noted that there is great disagreement within the scientific community on any given approach. The County cannot, and need not, under CEQA, review every report from an expert or agency, especially since new reports are released on an almost daily basis. The County has, however, reviewed multiple key advisories, comment letters, and white papers from experts, agencies, and groups such as the Climate Action Team, the California Attorney General, the CAPCOA, CARB, the Center for Biological Diversity, the Sierra Club, and the California Chapter of the American Planning Association. Some of these reports urge “zero emission” thresholds, while others advocate against them. Others evaluate multiple thresholds, such as CAPCOA’s January 2008 white paper, which analyzes: (1) CEQA with no GHG thresholds; (2) CEQA with a GHG threshold of zero; and (3) CEQA with non-zero thresholds. As stated in the CAPCOA white paper, “[m]any legal and policy questions remain unsettled, including the requirements of CEQA in the context of GHG emissions. This paper is provided as a resource for local policy and decision makers to enable them to make the best decisions they can in the face of incomplete information during a period of change.”

After reviewing much of the relevant literature, the County has determined that OPR, as the agency charged with drafting CEQA thresholds, provides the best available guidance.

Given OPR’s current reluctance to create a numerical threshold, the County has also not adopted a numerical threshold. OPR’s Draft CEQA Guideline Amendments for GHG Emissions state that a lead agency may consider the following three (3) issues in assessing the significance of impacts from GHG emissions:

- (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
- (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
- (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The Draft CEQA Guidelines Amendments also state that a lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions associated with a project, including emissions associated with energy consumption and vehicular traffic. Because the methodologies for performing this assessment are anticipated to evolve over time, a lead agency shall have discretion to determine, in the context of a particular project, whether to use a

model or methodology to quantify GHG emissions or to rely on qualitative or other performance based standards for estimating the significance of GHG emissions. (See Draft CEQA Guidelines Amendments § 15064.4(b).)

CEQA defines a “significant effect on the environment” as a substantial, or potentially substantial, adverse change in the environment (Public Resources Code §21068). With respect to global climate change, no one project can individually create a direct impact on what is a global problem (i.e., no project will, by itself, raise the temperature of the planet).

However, a project may be “cumulatively considerable,” meaning “that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of current projects, and the effects of probable future projects” (CEQA Guidelines §15065(a)(3)). OPR’s Draft Guideline Amendments add that a lead agency may determine that a project’s incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, such as a climate action plan, sustainable community strategy, or statewide plan of mitigation for GHG emissions. (See Draft CEQA Guidelines Amendments § 15064(h)(3)).

Based on: (a) the Legislature’s mandate in AB 32; (b) the continued advancements, yet substantial present-day unknowns, in global warming science; (c) the proposed CEQA guidelines prepared pursuant to SB 97; and (d) several published GHG emissions reduction strategies in the scientific literature, the following threshold will be used for the purposes of analyzing the Proposed Alternative Project’s potential to contribute to climate change:

- *Whether the Proposed Alternative Project would conflict with the attainment of the State’s goals of reducing GHG emissions as dictated by AB 32.* The Proposed Alternative Project will be deemed to have a less-than-significant impact on global climate change on a cumulative basis if (1) it does not result in GHG emissions that are considerable when compared to the existing environmental setting, and (2) it is consistent with emissions reduction strategies included in local, regional, or statewide planning documents and from reputable published sources such as the California Climate Action Team’s (CAT) Report to the Governor, CARB Early Action Measures, and OPR’s June 19, 2008 Technical Advisory Memorandum.

4.2.10 - Cumulative Impact Thresholds

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts: Either a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or a summary of projections contained in an adopted general plan or related planning

document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts incorporates a summary of projections. The following tiered approach is to assess cumulative air quality impacts. This approach includes the analysis of the following:

- Regional analysis of project air pollutants; and
- Project consistency with existing air quality plans.

4.2.11 - Assessment of the Cumulative Health Effects of the Pollutants

Project Impact Analysis

The following paragraphs analyze the potential impacts of the Proposed Alternative Project on the air quality in the area surrounding the project site. The expected emissions from the construction and operation of the Proposed Alternative Project are calculated as a necessary requisite for assessing the regulatory significance of Proposed Alternative Project emissions on a local and regional level. The paragraphs contain an analysis of the criteria in the CEQA Guidelines regarding air quality as well as an assessment of project conformity with the General Plan.

The Original Proposed Project included 92 residential lots and a 103-slip marina on the 62.43-acre project site. The Proposed Alternative Project reduces the density and intensity of the project with 50 residential lots, a 55-slip marina, and approximately 5.73 acres of dedicated open space in Open Space/Conservation easements.

Short Term Impacts

Short-term impacts will include fugitive dust and other particulate matter, as well as exhaust emissions generated by earthmoving activities and operation of grading equipment during site preparation. Construction emissions are caused by onsite or offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, CO, VOC, PM₁₀, and PM_{2.5}) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed soil. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, as well as worker traffic, but also include road dust (PM₁₀). Major construction-related activities include the following:

- Grading/clearing, including the excavation;
- Excavation and earth moving for infrastructure construction of the utilities, both on and offsite, and dwelling unit foundations and footings;
- Building construction;
- Asphalt paving of access roads throughout the development; and
- Application of architectural coatings for things such as dwelling stucco and interior painting.

Construction equipment such as scrapers, bulldozers, forklifts, backhoes, water trucks, and industrial saws are expected to be used on the project site and will result in exhaust emissions consisting of CO, NO_x, VOC, PM₁₀, and PM_{2.5}. During the finishing phase, paving operations and application of architectural coatings will release VOC emissions. Construction emission can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. For the purposes of determining worst-case emissions and including reasonably foreseeable results, this analysis assumes that only the area of the home site will be graded, with approximately 4 acres being the maximum acreage graded on any one day. Equipment usage was estimated using the Recommended Construction Fleet Calculator created for the Indirect Source Review Regulation (<http://www.valleyair.org/ISR/ISRResources.htm>). It was assumed that construction equipment would operate for 6 to 8 hours per day and the entire construction period would last for 12 months.

Table 4.2-6 summarizes these construction-related emissions (without mitigation). The emission estimates were derived from the description of the Proposed Alternative Project using the URBEMIS 2002 Version 8.7 emission model. The URBEMIS data files are provided in Appendix A to the Air Quality report.

Table 4.2-6: Short-Term Emissions (Unmitigated)

Source	Emissions (maximum pounds per day)						
	VOC	NO _x	CO	PM ₁₀ Exhaust	PM ₁₀ Dust	PM _{2.5} Exhaust	PM _{2.5} Dust
Site Grading	8.09	49.85	68.64	1.81	41.60	1.67	8.74
Building Construction	69.30	53.32	67.76	1.91	0.09	1.76	0.02
Maximum lbs/day	69.30	53.32	68.64	43.54		10.49	
Regional Threshold	75	100	550	150		55	
Significant Impact?	No	No	No	No		No	
Local Significant Threshold	NA	439	1,363	14		9	
Significant Impact?		No	No	Yes		Yes	
NA =Not applicable Source: URBEMIS, MBA 2008.							

The information shown in the above table indicates that the SCAQMD regional emission thresholds will not be exceeded by any pollutant, but the locally significant thresholds will be potentially exceeded due to PM₁₀ and PM_{2.5} emissions.

Level of Significance before Mitigation

Potentially Significant – Without mitigation, the short-term emissions are considered to have a significant local impact for particulate matter but a less than significant regional impact.

It is important to note that a previous analysis for the Original Proposed Project consisting of 95 total lots on this site had a significant and unavoidable impact to the short-term construction emissions of ROG and NO_x. A review of the analysis showed that the majority of the ROG emissions were assigned to architectural coatings off-gas. Used in the old analysis was the default emissions factor for architectural coating; however, that does not reflect the effect of the SCAQMD's Architectural Coatings Rule (Rule 1113). The majority of the NO_x emissions came from construction equipment exhaust. The updated URBEMIS version uses emission factors that are more up-to-date and more accurately reflect the current fleet of construction equipment. These analytical changes, in addition to the revision of the Proposed Alternative Project to decrease development density and intensity, eliminated the significant short-term air quality impacts identified in the 2005 Final EIR. Although the short-term air quality impact analysis indicates the Proposed Alternative Project will result in a potentially significant localized impact due to PM₁₀ and PM_{2.5} emissions, it must be noted that the 2005 Final EIR did not apply the localized significance thresholds in its analysis.

4.2.12 - Construction Mitigation

AQ-1 Prior to construction of the project, the project proponent will provide a Fugitive Dust Control Plan that will describe the application of standard best management practices (BMP) to control dust during construction. The Fugitive Dust Control Plan shall be submitted to the County and SCAQMD for approval and approved prior to construction. Best management practices will include, but not be limited to:

- For any earth moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
- For all disturbed surface areas (except completed grading areas), apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
- For all inactive disturbed surface areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind-driven fugitive dust, excluding any areas that are inaccessible due to excessive slope or other safety conditions.
- For all unpaved roads, water all roads used for any vehicular traffic once daily and restrict vehicle speed to 15 mph.
- For all open storage piles, apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust.

AQ-2 To reduce emissions from the construction equipment within the project site, the construction contractor will:

- To the extent that equipment and technology is available and cost effective, the contractor shall use catalyst and filtration technologies.
- All diesel-fueled engines used in construction of the project shall use ultra-low sulfur diesel fuel containing no more than 15-ppm sulfur, or a suitable alternative fuel.
- All construction diesel engines, which have a rating of 50 hp or more, shall meet the Tier II California Emission Standards for off-road compression-ignition engines, unless certified by the contractor that such engine is not available for a particular use. In the event that a Tier II engine is not available, Tier I compliant or 1996 or newer engines will be used preferentially. Older engines will only be used if the contractor certifies that compliance is not feasible.
- Heavy-duty diesel equipment will be maintained in optimum running condition.

4.2.13 - Short-Term Construction Emissions after Mitigation

Using the URBEMIS model and applying construction mitigation, short-term emissions of PM₁₀ and PM_{2.5} after implementation of the above mitigation measures were estimated and are provided in Table 4.2-7. As shown in Table 4.2-7, short-term localized construction emissions are expected to be less than significant after application of mitigation measures.

**Table 4.2-7: Short-term Emissions of PM₁₀ & PM_{2.5}
(Mitigated)**

Source	Emissions (maximum lbs/d)	
	PM ₁₀	PM _{2.5}
Site Grading	6.57	1.64
Building Construction	6.59	1.65
Maximum lbs/day	6.59	1.65
Local Significant Threshold	14	9
Significant Impact?	No	No
Source: MBA 2008.		

Level of Significance after Mitigation

Less than significant.

Long-Term Impacts

Long-term emissions for the project site are considered for project build-out. Emission sources consist of mobile emissions and stationary emissions. Mobile emissions estimates are derived from motor vehicle traffic. Stationary emissions estimates are derived from the consumption of natural gas,

electricity and consumer products, as well as emissions resulting from landscape maintenance. Assumptions relevant to model input for the long-term emissions estimates are as follows:

- The project site is assumed to generate 479 average daily trips at buildout of the Proposed Alternative Project (2008);
- Natural gas consumption is based on residential land use;
- Landscape equipment emissions during the summer are based on default rates within the URBEMIS 2002 model for residential land uses at buildout year 2008; and
- Fireplace hearth emissions during the wintertime assume the conservative URBEMIS default that 35 percent of the units would have wood stoves, 10 percent would have wood fireplaces, and 55 percent would have natural gas fireplaces.

Since the proposed project is at an altitude of over 5,000 feet and basic exhaust emission rates are based on tests at CARB’s Haagen-Smit Laboratory at an altitude of 300 feet, emission rates from vehicles in the vicinity of the project may not be accurately represented in the URBEMIS calculations. According to CARB’s on-road motor vehicle emissions model methodology (CARB 2000), some older technology vehicles emit more VOC and CO emissions and fewer NO_x emissions when at higher altitudes. This is a special concern for vehicles operating above 5,000 feet elevation. At higher altitudes, the air pressure and air density is lower than that at sea level. Older technology vehicles, designed for operation at sea level, were not equipped with adaptive fuel controls to reduce the fuel flow for operation at high altitudes. Hence, older technology vehicles tended to run rich at higher altitudes. This increased VOC and CO emissions but suppressed NO_x formation due to the quenching effect of the excess fuel.

Therefore, CARB established correction factors of 1.3 for VOC, 1.9 for CO, and 0.6 for NO_x that are to be applied to the running exhaust and continuous starting emissions for operation above 5,000 feet. These correction factors are only applicable to older technology gasoline fueled vehicles. Newer technology vehicles have adaptive fuel controls that compensate for higher altitudes. CARB determined the correction factor would only apply to the Technology Groups listed in Table 4.2-8.

Table 4.2-8: Technology Groups with Altitude Correction Factors

Tech Group	Model Years	Technology Group Description
1	Pre-1975	With Secondary Air
2	Pre-1975	Without Secondary Air
3	1975-1982	No Catalyst
4	1975-1976	Oxidation Catalyst with Secondary Air
5	1975-1979	Oxidation Catalyst without Secondary Air
6	1980-1989	Oxidation Catalyst without Secondary Air
7	1977-1987	Oxidation Catalyst with Secondary Air

An analysis of EMFAC2007 for the Basin portion of San Bernardino County for the current year (2007), buildout year (2008), and long-term operations (2030) was conducted. Results of this analysis are presented in Appendix B to the Air Quality Analysis (see Appendix A of this Revised and Recirculated Draft EIR). The number of vehicles operating in these technology groups as a percentage of all vehicles was determined to be only 2.78 percent in 2007, 1.69 percent in 2008, and 0 percent in 2030. Therefore, it was determined that further application of correction factors would not be necessary due to the negligible effect on the total emissions.

An estimate of the daily total long-term project emissions is derived by combining both mobile and stationary emissions (natural gas consumption, consumer product consumption, hearth use, paint applications, and landscape maintenance). Using the model URBEMIS, total daily emissions were estimated for summer and winter. Table 4.2-9 shows long-term estimated daily total summer emissions and Table 4.2-10 shows winter emissions.

In addition, it can be assumed that the future residents would also have personal water craft for use on Big Bear Lake. An estimate of personal water craft emissions was made using the model used by CARB to estimate emissions from off-road motor vehicles (OFFROAD2007) for the year 2010, using San Bernardino County small recreational craft emissions only. The small recreational craft categories were used because Big Bear Municipal Water District Regulations does not allow any craft larger than 26 feet in length on the lake. Total number of craft in San Bernardino County for 2010 is estimated at 22,449. Assuming that each household has one craft, the Alternative would generate 50 craft, which is 0.223 percent of the County's total. OFFROAD emissions are generated on an average yearly basis so Table 4.2-9 and Table 4.2-10 include the average pounds per day of emissions from portion of total emissions that would be generated by 50 watercraft.

Table 4.2-9: Long-Term Emissions (summer)

Pollution Source	Emissions (pounds per day)				
	VOC	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile Emissions	3.48	6.06	43.49	4.86	1.21
Natural Gas Consumption	0.05	0.63	0.27	NG	NG
Landscape Emissions	0.25	0.01	1.74	0.01	NG
Consumer Products	2.45	NG	NG	NG	NG
Architectural Coatings	1.70	NG	NG	NG	NG
Personal Water Craft	5.84	0.46	11.13	0.68	0.68
Combined Emissions Totals (lbs/day)	13.77	7.16	56.63	5.55	1.89
Regional Threshold	55	55	550	150	55
Exceed Threshold?	No	No	No	No	No
NG = negligible Source: URBEMIS, MBA 2008. 1: Big Bear Municipal Water District webpage http://www.bbmwd.org/regulations.htm . Accessed September 20, 2007.					

Sources for air quality impacts from the Proposed Alternative Project include particulate and gaseous emissions from construction activities, and are temporary. Some of these activities are controlled by SCAQMD permit conditions and by specified control measures in the District’s Best Available Control Technology (BACT) guidelines, which are required before a permit to begin construction may be issued.

Table 4.2-10: Long-Term Emissions (winter)

Pollution Source	Emissions (pounds per day)				
	VOC	NO _x	CO	PM ₁₀	PM _{2.5}
Mobile Emissions	4.23	7.23	52.66	4.86	1.21
Natural Gas Consumption	0.05	0.63	0.27	NG	NG
Hearth Emissions	28.38	0.98	51.91	7.74	7.12
Consumer Products	2.45	NG	NG	NG	NG
Architectural Coatings	1.70	NG	NG	NG	NG
Combined Emissions Totals (lbs/day)	36.81	8.84	104.84	12.60	7.39
Regional Threshold	55	55	550	150	55
Exceed Threshold?	No	No	No	No	No
NG = negligible Source: URBEMIS, MBA 2008.					

Level of Significance before Mitigation

Less than Significant – When emissions projections are compared with the SCAQMD suggested regional thresholds for significance, all long-term emissions are below the applicable thresholds.

It is important to note that a previous analysis documented in the 2005 Final EIR for a 92-lot subdivision on this site had a significant and unavoidable impact to the regional levels of ROG, CO, and PM₁₀. A review of the analysis showed that the majority of the emissions were assigned to wood fireplaces. The analysis used the URBEMIS model version available at the time (Version 7G), which has been determined to have had an error in calculating emissions from hearth activities. The emissions calculated for this report used the current version of URBEMIS (Version 8.7), which is considered more reliable.

CO Hotspots

CO is a localized problem requiring additional analysis beyond total project emissions quantification. Projects with sensitive receptors or projects that could negatively impact levels of service (LOS) of existing roads are required to use the University of California Davis, Institute of Transportation Studies document *Transportation Project-Level Carbon Monoxide Protocol (CO Protocol)* (UCD 1997) (hereafter referred to as the CO Protocol) to determine the potential to create a CO hot spot. A CO hot spot is a localized concentration of CO that is above the State or Federal 1-hour or 8-hour

ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The Proposed Alternative Project has the potential to negatively impact the LOS on adjacent roadways and, therefore, requires a CO hotspot analysis.

The significance of project-related CO impacts is generally based on guidance presented in the CO Protocol. This document presents a series of criteria that are used to determine the significance of impacts. The impact on CO is considered significant if the project will:

- Degrade operation of an intersection to level of service LOS E or F; or
- Substantially worsen an intersection already operating at LOS F.

For the purposes of determining potential impacts on CO concentrations, a screening procedure was developed to allow the conservative evaluation of CO concentrations without having to run computational models such as EMFAC and CALINE4. Screening procedures provide a relationship among CO concentrations and the most important parameters that affect those concentrations. The screening procedure is contained in the CO Protocol. The Protocol states that the determination of project-level CO impacts should be carried out according to a Local Analysis flow chart.

As presented in the Moon Camp Traffic Impact Analysis (TIA) conducted by Urban Crossroads (2007), affected intersections are projected to operate at a Level of Service "C" or better during peak hours with the improvements listed. According to Section 4.7.2 of the CO Protocol, if the project does not involve any intersections with an LOS "E" or "F," no further analysis is necessary.

However, since the TIA indicates that three of the study intersections are currently operating at a LOS F in 2010 with Proposed Alternative Project without improvements, there is no guarantee that the improvements proposed will actually be constructed within a reasonable time after development of the Proposed Alternative Project. Since these intersections may continue to operate in deficient conditions for some time after opening year of the Proposed Alternative Project, a detailed analysis was conducted on three intersections.

The CARB emission factor model, EMFAC2002, was used to estimate the emission factors for the year 2009. Additional assumptions include approach/departure speed - 5 miles per hour; travel speed - 25 miles per hour; temperature - 40 degrees Fahrenheit; season - winter; and geographical area - South Coast Air Basin.

Using the CALINE4 model, potential CO hotspots were analyzed at the intersections listed in Table 4.2-11. As shown in Table 4.2-11, the estimated 1-hour and 8-hour concentrations, in combination with background concentration, are below the State and Federal ambient air quality standards. No CO hotspots are anticipated as a result of traffic-generated emissions by the Proposed Alternative Project in combination with existing traffic. Therefore, the mobile related emissions are not anticipated to contribute substantially to an existing or projected air quality violation.

Table 4.2-11: Carbon Monoxide Concentrations

Intersection	1-Hour Concentration*	8-Hour Concentration**	Significant Impact?***
North Shore Dr. at Big Bear Blvd.	4.1	3.1	No
North Shore Dr. at Stanfield Cutoff	3.7	2.8	No
Big Bear Blvd. at Stanfield Cutoff	5.0	3.7	No

Source: Project contribution estimated using Caline4; see Appendix G for model output.
 * CALINE4 output plus background concentration of 3 ppm (from Table 1)
 ** CALINE4 output multiplied by a persistence factor of 0.7 (from page 9-11 of the 1993 South Coast Air Quality Management District CEQA Handbook). The background concentration of 2.3 (from Table 1) was then added.
 *** Comparison of the 1-hour concentration to the state standard of 20 ppm and comparison of the 8-hour concentration to the state/federal standard of 9 ppm.

Level of Significance before Mitigation

Less than significant.

Residential Woodburning

Wood stoves and fireplaces are reasonably common in the area surrounding Big Bear Lake. Some people use wood as a primary source of heat, and others have wood stoves as a back up in case of emergencies, such as power failures. Wood heating is also popular for cultural reasons when one considers that it can be beneficial because wood is a renewable fuel. However, the smoke from wood stoves and fireplaces pollutes the air outdoors. Smoke from outside can seep into buildings, including nearby homes, also affecting indoor air quality. Smoke from neighborhood stoves and fireplaces, a common source of both odor and reduced visibility, greatly contributes to the air pollution problems people complain about most.

Complete combustion gives off light, heat, and the gases carbon dioxide and water vapor. Because complete combustion does not occur when wood burns, wood smoke is produced which contains CO, NO_x, and ROG. The ROG from woodburning includes toxic and/or cancer-causing substances, such as benzene, formaldehyde and benzo-a-pyrene, a polycyclic aromatic hydrocarbon (PAH).

Most wood heaters, such as woodstoves and fireplaces, release far more air pollution, indoors and out, than heaters using other fuels. In winter, when we heat our homes the most, cold nights with little wind cause smoke and air pollutants to remain stagnate at ground level for long periods. Even though there is no shorter averaging time for particulate matter air quality standards, there is a still a potential for nuisance violations in the area.

Level of Significance before Mitigation

Potentially significant.

Conventional factory-built fireplaces are not efficient at producing heat. These fireplaces are also the source of smoke, indoors and out. To reduce the nuisance risks of smoke – indoor and outside, while still allowing homeowners the ambiance, an EPA-certified fireplace insert is suggested. Additionally, wood heat can be supplied with various EPA-certified wood stoves, pellet stoves, or natural gas heaters. While older uncertified stoves and fireplaces release 40 to 60 grams of smoke per hour, new EPA-certified stoves produce only 2 to 5 grams of smoke per hour.

CARB explains that (CARB 2007) the heating efficiency of any wood heater depends on combining two factors: 1) how completely it burns the firewood (combustion efficiency), and 2) how much of the fire's heat gets into the room, rather than going up the flue (transfer efficiency). The measured heat efficiency of an open-hearth fireplace can range from -10 percent to 10 percent. The heating efficiency of an EPA-certified stove, insert, or fireplace can range from 60 percent to 80 percent.

CARB recommends (CARB 2007) that the owner gets into the habit of glancing out at their chimney top every so often. Apart from the half hour after lighting and refueling, a properly burning fire should give off only a thin wisp of white steam. If they see smoke, they should adjust the dampers or air inlets to let in more air. The darker the smoke, the more pollutants it contains and the more fuel is being wasted.

Homeowners choosing to use fireplaces and woodstoves need to understand that healthy outdoor and indoor air quality requires good wood burning habits. Most fireplaces will rob the house of heat because they draw air from the room and send it up the chimney. Occupants are warmed if they sit within 6 feet of the fire, but the rest of the house gets colder as outdoor air leaks in to replace the hot air going up the chimney. The key to burning clean and hot is to control the airflow. Most fireplaces waste wood because of unrestricted airflow. A lot of air helps the fire burn fast, but a load of wood will last only one or two hours.

Residential Woodburning Mitigations

- AQ-3** To reduce the emissions from woodburning apparatus; the following requirement will be placed on all new residences constructed on the proposed project's lots:
- No open-hearth fireplace will be allowed in new construction, only EPA Phase II Certified fireplaces and wood stoves, pellet stoves, and natural gas fireplaces shall be allowed.
- AQ-4** To establish a "Good Neighbor Policy for Burning" that will further help reduce the potential for localized nuisance complaints related to woodburning; the proponent shall distribute an informational flyer to each purchaser of lots. At a minimum, the flyer will say:
- KNOW WHEN TO BURN**
- Monitor all fires; never leave a fire unattended.
 - Upgrade an older woodstove to one with a catalytic combustor that burns off excess pollutants.

- Be courteous when visitors come to your home. Wood smoke can cause problems for people with developing or sensitive lungs (i.e. children, the elderly) and people with lung disease.

KNOW WHAT TO BURN

- Split large pieces of wood into smaller pieces and make sure it has been seasoned (allowed to dry for a year). Burning fresh cut logs = smoky fires.
- When buying wood from a dealer, do not assume it has been seasoned.
- Small hot fires are more efficient and less wasteful than large fires.
- Never burn chemically treated wood or non-wood materials.
- Manufactured fire logs provide a nice ambience, have the least impact to air quality, and are a good choice for homeowners who use a fireplace infrequently.

KNOW HOW TO BURN

- Proper combustion is key. Make sure your wood fire is not starved; if excess smoke is coming from the chimney or stack, the fire isn't getting enough air.
- Visually check your chimney or stack 10 to 15 minutes after you light a fire to ensure it is not emitting excess amounts of smoke.
- Homeowners should have woodstoves and fireplaces serviced and cleaned yearly to ensure they are working properly.

Level of Significance after Mitigation

Less than Significant.

Conformance with Air Quality Management Plan

The CEQA checklist indicates that a significant impact would occur if a proposed project would conflict with or obstruct implementation of the applicable air quality plan.

This assessment will use four criteria for determining consistency of the Proposed Alternative Project with the current AQMP, as discussed below. The first and second criteria are from the SCAQMD. According to the SCAQMD, there are two key indicators of AQMP consistency: 1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and 2) whether the project will exceed the assumptions in the AQMP based on the year of project build out and phase (SCAQMD 2006b). The third criterion is compliance with the control measures in the AQMP. The fourth criterion is compliance with the SCAQMD regional thresholds.

Project's Contribution to Air Quality Violations

As shown in discussion Section 4.2.13 and 4.2.14 of Short and Long-Term Impacts, the Proposed Alternative Project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, the Proposed Alternative Project meets the first indicator.

AQMP Assumptions

One way to assess project compliance with the AQMP assumptions is to ensure that the population density and land use are consistent with the growth assumptions used in the air plans for the air basin. According to CARB transportation performance standards, the rate of growth in vehicle miles traveled (VMT) and trips should be held to the rate of population growth (SCAQMD 2006b). Compliance with this performance standard is one way suggested by CARB of showing compliance with the growth assumptions used in the AQMP. If the total VMT generated by a proposed project at build-out is at or below that predicted by the AQMP, then the project's mobile emissions is consistent with the AQMP. It is assumed that the existing and future pollutant emissions computed in the AQMP were based on land uses from area general plans.

Under the existing zoning of the project site, only one lot would be allowed on the 62.43 acres. The Proposed Alternative Project would allow 50 lots in the same area. This would result in a net increase of 487 trips per day above the current general plan expected growth. The TIA provided an estimation of daily traffic generated by projects planned in the area in 2030. The results indicate that the other developments' daily trip generation would be 15,111 in 2030. The Proposed Alternative Project traffic generation in 2030 would be 497 trips per day, for a total of 15,608 total trips per day, including the Proposed Alternative Project. This represents just over 3 percent of the projected cumulative growth. Whereas the increase above the parcel alone will be considerable, the relative increase above the vicinity general plan projection is minimal. Therefore, the Proposed Alternative Project is consistent with the assumptions in the AQMP.

Control Measures

The third criterion is compliance with the control measures in the AQMP. The AQMP contains a number of land use and transportation control measures including the following:

- The District's Stationary and Mobile Source Control Measures;
- State Control Measures proposed by CARB; and
- Transportation Control Measures provided by SCAG (AQMP 2003).

CARB's strategy for reducing mobile source emissions includes the following approaches:

- New engine standards;
- Reduce emissions from in-use fleet;
- Require clean fuels, support alternative fuels;
- Reduce petroleum dependency;

- Work with EPA to reduce emissions from national and state sources; and
- Pursue long-term advanced technology measures (AQMP 2003).

Transportation control measures provided by SCAG include those contained in the Regional Transportation Plans (RTP); the most current version is the 2004 RTP. The RTP has control measures to reduce emissions from on-road sources by incorporating strategies such as high occupancy vehicle interventions, transit, and information-based technology interventions (AQMP 2003). The measures implemented by CARB and SCAG affect the project indirectly by regulating the vehicles that the residents may use and regulating public transportation. The Proposed Alternative Project indirectly will comply with the control measures set by CARB and SCAG.

Since the SCAQMD's rules and regulations are mandatory and enforceable, the Proposed Alternative Project will comply with all of the District's applicable rules and regulations. Therefore, the Proposed Alternative Project complies with this criterion.

Compliance with the SCAQMD Regional Thresholds

Although there is no known guidance that correlates AQMP consistency with the SCAQMD regional thresholds, it is common to use the thresholds in assessing AQMP compliance.

The regional significance analysis of construction and operational emissions demonstrated that emissions would not exceed the SCAQMD regional significance thresholds. Therefore, the Proposed Alternative Project is consistent with the SCAQMD regional thresholds.

Level of Significance before Mitigation

Less than Significant.

4.2.14 - Potential for Air Quality Standard Violation

The CEQA Guidelines indicate that a project would have a significant impact if it would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

The South Coast Air Basin, the geographical area in which the project is located, is in nonattainment for CO, PM₁₀, PM_{2.5}, and ozone. Levels of PM₁₀ and PM_{2.5} are locally high enough that contributions from new sources may add to the concentrations of those pollutants and contribute to a projected air quality violation. Although background levels of ozone are high in the basin, the project alone (without other cumulative sources) would not contribute substantially to a projected air quality violation of ozone. Project emissions of VOC and NO_x (ozone precursors) and their cumulative contribution to ozone concentrations are discussed in Cumulative Impacts below.

Although CO is still listed as a nonattainment pollutant, the basin has not exceeded the CO standard for the past several years. Additionally, as shown in Table 4.2-11, the Proposed Alternative Project's source receptor area has not violated the CO standard for the past several years.

Two criteria are used to assess the significance of this impact: 1) the localized construction analysis; and 2) the CO hotspot analysis. These analyses are discussed above and have concluded that they would result in a less than significant impact.

Particulate matter emissions during operation (PM_{10} and $PM_{2.5}$) are primarily from paved road dust and fireplaces. It is not likely that the Proposed Alternative Project would generate enough paved road dust during operation to violate a PM_{10} or $PM_{2.5}$. Also, it is not likely that particulate matter emissions from woodburning devices in an entire day would be enough to violate the 24-hour standards for either PM_{10} or $PM_{2.5}$. In addition, the regional significance analysis demonstrated that emissions of PM_{10} and $PM_{2.5}$ are below the regional significance thresholds.

Sulfur dioxide emissions from the Proposed Alternative Project are negligible. The regional analysis demonstrated that emissions are far under the regional significance threshold. Therefore, it follows that on a localized basis, emissions of sulfur dioxide would not exceed the ambient air quality standards. In addition, the basin is in attainment for sulfur dioxide and does not experience high pollutant episodes of that pollutant. Therefore, potential impacts of sulfur dioxide are less than significant.

Level of Significance before Mitigation

Less than Significant.

Contribution to Climate Change

The threshold of significance proposed in this document is not simply if the Proposed Alternative Project would result in an increase in GHG emissions, but if the Proposed Alternative Project would result in an increase in GHGs that would significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32.

Consistent with the mandates of AB 32, SB 97, and the OPR Technical Advisory Memorandum and its guidance on providing analysis of global climate change in CEQA documents, the Proposed Alternative Project's cumulative impact on global climate change has been based on the following methodology:

- Calculation of GHG emissions. This step is for informational purposes, and will be used to determine whether the Proposed Alternative Project's emissions are considerable when compared to the existing environment.
- Incorporation of GHG Emission Reduction Strategies. If a project incorporates design features that assist in achieving increased energy efficiencies and in so doing reduces GHG emissions levels from the status quo, then the project's cumulative impact on global climate change is considered less-than-significant.

Emissions Estimation Assumptions

Construction. The Proposed Alternative Project would emit GHGs, during construction, from combustion of fuels in worker vehicles accessing the site as well as from the construction equipment. Exhaust emissions during construction for the Proposed Alternative Project were estimated using URBEMIS2007 version 9.2.4 (URBEMIS 2007). The detailed calculations are provided in Appendix E of the Air Quality Analysis.

Operation. GHG emissions from area emissions and motor vehicles were generated using URBEMIS 2007. Emissions of nitrous oxide and methane emissions from natural gas consumption were estimated using emission factors as described in the attached spreadsheets in Appendix E of the Air Quality Analysis.

Electricity usage for commercial operations was estimated using emission factors as described in the attached spreadsheets in Appendix E. The California Climate Action Registry (CCAR) emission factors for electricity use are 804.54 pounds of CO₂ per MWh, 0.0067 pounds of NH₄ per MWh, and 0.0037 pounds of N₂O per MWh.

Note that emissions models such as EMFAC and URBEMIS evaluate aggregate emissions and do not demonstrate, with respect to a global impact, how much of these emissions are “new” emissions specifically attributable to the proposed project. For most projects, the main contribution of GHG emissions is from motor vehicles, but how much of those emissions are “new” is uncertain.

Emissions Inventory

The emissions are estimated in tons per year, which are converted to metric tons of carbon dioxide equivalents (MTCO₂e). The carbon dioxide emissions from construction activity are shown in Table 4.2-12. The GHG emissions from operation of the Proposed Alternative Project are shown in Table 4.2-13. At buildout, the Proposed Alternative Project will emit approximately 1,591.60 MTCO₂e per year. Approximately 82 percent of operational GHGs will be generated by vehicular activity associated with the Proposed Alternative Project. Natural gas use and indirect emissions from electricity generation will contribute approximately 11 percent and 6 percent of the operational GHG inventory, respectively.

Table 4.2-12: Construction Generated Carbon Dioxide Emissions

Source	Total tons	MTCO ₂ e
Project Construction	401.22	363.99
Source: Michael Brandman Associates, 2008		

Table 4.2-13: Operational Greenhouse Gas Emissions

Source	Tons			Metric Tons CO _{2e}
	Carbon Dioxide	Nitrous Oxide	Methane	
Motor Vehicles	1,378.00	0.18	0.39	1,309.49
Natural Gas	189.75	0.00	0.02	172.67
Indirect Electricity	113.17	0.00	0.00	102.83
Hearth	6.63	—	—	6.01
Landscape Equipment	0.65	—	—	0.59
Total	1,688.20	0.19	0.41	1,591.60
Source: Michael Brandman Associates, 2008				

Energy Efficient Design Features

The Proposed Alternative Project would be developed with many construction and design attributes that would facilitate increases in energy efficiencies and a corresponding decrease in GHG emissions. The following design attributes and elements of the Proposed Alternative Project have been formulated based on the following fundamental objectives:

- Conservation of natural resources;
- Wise use of energy;
- Improvement of indoor air quality; and
- Achievement of livable communities

Community Design and Planning

Incorporate the following design and planning features as practical:

- Subdivision Layout & Orientation to Improve Natural Cooling and Passive Solar Attributes – summer temperatures in neighborhoods that have large expanses of pavement exposed to the sun can be several degrees warmer than neighborhoods with shaded pavement. Homes shall be oriented to take advantage of solar access to provide passive solar heat in the winter and minimize solar heat in the summer months. Planning strategies that consider solar access can address these concerns.

Site Design

Incorporate the following site design features as possible and practical:

- Protect Topsoil from Erosion and Reuse after Construction – Soil is a valuable, living resource that should be protected. Through careful planning and construction practices, valuable soil as well as mature trees and other plants can be preserved.

- Limit and Delineate Construction Footprint for Maximum Protection – Limit and delineate the construction footprint; restrict heavy equipment that compacts soil, including cars, to areas that are or will be paved or built over. Identify areas to be paved as a place to store existing topsoil, if topsoil needs to be removed from an area during construction. Protect stored soil from erosion.
- Recycle Construction Waste (Including Green Waste) – Each year close to nine million tons of construction and demolition (C&D) debris is disposed of in California landfills. This represents 22 percent of the statewide waste stream, but in newer communities, C&D waste sent to landfills can be as high as 50 percent. Construction waste generally consists of wood, drywall, metal, concrete, dirt, and cardboard. It can also include plant debris (green waste) from the landscape. Much of this material can be reused or recycled.
- Use Recycled-Content Aggregate (Minimum 25 percent) – Recycled concrete and asphalt crushed to 3/4-inch meets the California Department of Transportation’s (Caltrans) specification for Class 2 Aggregate Base.
- Design windows to catch prevailing breezes and provide cross ventilation – Install high windows, skylights, or cupolas with securable low windows to create a stack effect that exhausts rising hot air and draws in cooler outdoor air.
- Install energy-efficient windows (double-paned, low-conductivity frames, and low-e coating) – There are two types of low-e glazing. One is heat rejecting (hard coat) and the other is heat receiving (soft coat). The recommended south glazing for passive solar buildings is low-e hard coat, heat receiving glazing with a U-factor of 0.40 or lower and a solar heat gain coefficient (SHGC) of 0.65 or higher.

Foundation

- As practical or feasible, replace Portland Cement in Concrete with Recycled Flyash or Slag – Flyash is a byproduct of coal-burning power plants. It is typically landfilled, but can be an inexpensive and quality substitute for a portion of the Portland cement in concrete. Concrete suppliers routinely replace 10 to 15% of the Portland cement in their mixes with flyash. Slag, a byproduct of the steel industry, may also be used like flyash to replace some of the cement.

Landscaping

As practical or feasible, incorporate the following measures into landscape design:

- Minimize Turf Areas in Landscape Installed by Builder – Lawns (or turf) are useful for recreation and relaxation, but turf requires frequent cutting, watering and application of fertilizers or other chemicals to stay green during California’s long dry season.
- Install High-Efficiency Irrigation Systems, such as Drip, Bubblers, or Low-flow Sprinklers or Smart Controllers – With increasing demand on supplies of fresh water, efficient landscaping irrigation is vital in California. Efficient irrigation systems apply only the amount of water that the plants need, with little or no waste through runoff, over watering, or misting.
- Incorporate Two Inches of Compost into the Top 6 to 12 Inches of Soil – A robust, living soil with sufficient organic content is the foundation of a water-conserving, resource-efficient,

thriving landscape. Adding good quality compost before planting brings life to the soil and feeds existing soil organisms, fueling many natural processes that supply nutrients, minimize disease, and improve soil quality.

Structural Frame and Building Envelope

As practical and feasible, incorporate the following features into residential construction:

- Structural Frame & Building Envelope;
 - Reduce Pollution Entering the Home from the Garage by providing a Tightly Sealed Air Barrier between Garage and Living Area, Install Garage Exhaust Fan, or Build a Detached Garage – According to the U.S. EPA, an attached garage is the biggest contributor to poor indoor air quality in a home. Car exhaust contains many known carcinogens and can migrate into living spaces through doors and cracks in walls and ceilings adjacent to the garage. Other pollutants commonly found in garages include benzene from lawn mowers and power tools, pesticides for gardens, toxic cleaning agents, and chemicals in paints and adhesives.
 - Use wall materials that improve thermal mass – Low cost strategies for thermal mass walls include using 5/8” drywall on all interior surfaces. Less conventional approaches include using pre-cast insulated concrete walls or insulated concrete forms (ICFs).
- Exterior Finish
 - **Use Durable and Noncombustible Siding Materials** – Sidings made of metal, stone, brick, stucco and fiber-cement offer a durable and noncombustible home exterior.
 - **Use Durable and Noncombustible Roofing Materials** – Forty- to fifty-year asphalt shingles, tile, slate, fiber-cement, recycled plastic and metal are examples of durable roofing materials. A Class A fire rating offers a home the highest in fire protection.
- Insulation
 - **Install Insulation with 75 Percent Recycled Content in Walls, Floors, and/or Ceilings** – Fiberglass insulation typically contains 25 to 30 percent recycled glass, with a combination of post-industrial and post-consumer content. Materials such as recycled cotton or cellulose insulation contain up to 80 percent post-industrial or post-consumer recycled materials.
 - **Install Insulation That Is Low-Emitting (Certified CA Section 01350)** – Many insulation products emit formaldehyde and other VOCs. Look for products that have been tested for low emissions by a reputable third-party organization or government agency.
- Plumbing
 - Distribute Domestic Hot Water Efficiently by either: Insulating Hot Water Pipes from Water Heater to Kitchen, Insulating All Hot Water Pipes, or use other Engineered Piping – Locating the water heater close to usage points reduces heat loss, speeds the rate of hot water delivery, and reduces water wasted while waiting for hot water to arrive at a

- plumbing fixture. For larger houses, an on-demand hot water circulation pump may reduce waiting time without wasting energy.
- Install Only High Efficiency Toilets (Dual-Flush or 1.3 gpf) – Standard new toilets use 1.6 gallons per flush (gpf). Toilets that use less than 1.3 gpf are called High Efficiency Toilets (HETs). HETs are available in dual-flush, pressure-assist, and conventional gravity-flush models.
 - Plumbing Fixtures with Below Standard Flow Rates – (Bath faucets <1.5 gal/min & showers <x.0 gal/min). Along with aerators, flow restrictors can reduce water consumption by 13 percent.
 - Heating, Ventilation, & Air Conditioning
 - **Install Sealed Combustion Units in Furnaces and Water Heaters** – Sealed combustion furnaces and water heaters duct outdoor air directly into a sealed jacket around the combustion chamber and then vent it directly outdoors, eliminating the use of house air for combustion.
 - **Install Zoned, Hydronic Radiant Heating with Slab Insulation** – Instead of providing warm air via ducts, hydronic radiant heating systems circulate hot water through under-floor tubing, wall radiators, or baseboard convectors.
 - **Install High Efficiency Air Conditioning with Environmentally Responsible Refrigerants** – Energy-efficient air conditioning equipment saves homeowners money and reduces demand for electricity from power plants. Environmentally sound refrigerants reduce the risk of damage to the ozone layer.
 - **Design and Install Effective Ductwork** – Poorly designed and installed ductwork lowers heating and cooling system efficiency and capacity, and can contribute to poor indoor air quality and comfort problems.
 - **Install High Efficiency HVAC Filter (MERV 6+)** – HVAC filters remove particulates from the air. Minimum Efficiency Reporting Value (MERV) is a metric used to measure an air filter’s efficiency. The MERV scale ranges from 1 to 20. The higher the MERV number, the more efficient the filter is at removing particles.
 - **Install Effective Exhaust Systems in Bathrooms and Kitchens such as Install Energy Star® Bathroom and Kitchen Fans Vented to the Outside and All Bathroom Fans Are on Timer or Humidistat** – Bathrooms and kitchens produce odors and a lot of moisture that can cause mold and other problems if the rooms are not properly ventilated. Gas ovens and cooktops produce carbon monoxide, nitrogen dioxide and other pollutants. Additionally, cooking food produces odors and particulates.
 - **Install Mechanical Fresh Air Ventilation Systems, such as Any Whole House Ventilation System That Meets ASHRAE 62.2** – Ceiling fans improve a home’s comfort by circulating air. Energy Star®-qualified models are energy efficient thanks to improved motors, blade designs and fluorescent light kits; also, they can be operated to either draw warm air upward in the summer or push it downward in the winter.

- **Install Carbon Monoxide Alarms** – CO is emitted from fuel-burning appliances such as stoves, cooktops, water heaters, furnaces, and fireplaces, as well as from cars and some landscape equipment. If a home is tightly built for energy efficiency but has leaky HVAC ducts, the air leaks may depressurize the home and reverse the flow of exhaust vent pipes. This can introduce carbon monoxide from fuel-burning appliances back into the home, a process known as backdrafting.
- **Finishes**
 - **Use Low-VOC or Zero-VOC Paint** – Most interior paints contain VOCs, a major class of indoor and outdoor air pollutants. Besides affecting indoor air quality, certain VOCs react with other chemicals in the atmosphere, producing ground-level ozone (smog) that can affect human health. Low- and zero-VOC paints reduce these sources of pollution.
 - **Use Recycled-Content Paint** – A number of manufacturers have developed high-quality recycled content latex paint and primers. The recycled portion (ranging from 20 percent to 100 percent) comes from unused consumer or industrial stock, as well as paint recovered from household hazardous waste collection facilities. The paint is checked for quality and then sent to paint manufacturers for recycling and blending with a portion of new paint.
 - **Reduce Formaldehyde in Interior Finishes (CA Section 01350)** – Formaldehyde is often used as a binder in home-building products such as plywood, particleboard, and other composite wood products. These binders come in two basic forms: urea and phenol. Urea-formaldehyde binders are common in interior-grade products. Phenol-formaldehyde binders are used in exterior applications because they are more water resistant. This water resistance quality makes phenolic glues off gas more slowly and in lower quantities than urea glues, reducing some of the harmful effects on indoor air quality.

Conclusion

As discussed previously, the methodology used in this EIR to analyze the Proposed Alternative Project's potential effect on GCC includes a calculation of GHG emissions for informational purposes, as there is no quantifiable emissions threshold currently defined. Although AB 32 requires GHG emissions to be reduced to 1990 levels by 2020, it does not require CARB to develop a plan to accomplish this reduction until 2011. Though CARB is diligently moving forward to develop this plan, until it has published and adopted its 1990 emissions inventory, there is no "air quality standard" by which to judge a project's contribution to GCC under CEQA Guidelines, Appendix G. Similarly, the PCC notes that there is little consensus as to the ultimate impact of human interference with the climate system and its causal connection to global warming trends.

Accordingly, the potential of the Proposed Alternative Project to create an impact on GCC is based on whether the Proposed Alternative Project would conflict with the attainment of the state's goals of reducing GHG emissions as dictated by AB 32. The Proposed Alternative Project will not interfere

with the state's goals of reducing GHG emissions to 1990 levels by the year 2020 as stated and an 80-percent reduction in GHG emissions below 1990 levels to 2050. As discussed herein, the Proposed Alternative Project will generate a limited amount of GHG generation during construction, and it will lead to a low amount of on-going operational emissions from the use of the 50 residential units. The Proposed Alternative Project would emit less than 25 percent of the SCAQMD's draft numerical GHG threshold of significance (currently proposed as 6,500 MTCO₂e). Moreover, the Proposed Alternative Project will utilize high-efficiency design features that will even further reduce consumption of electricity, natural gas, and will result in a corresponding reduction in GHG emissions. Therefore, the Proposed Alternative Project will not significantly hinder or delay California's ability to meet the reduction targets contained in AB 32.

4.2.15 - Cumulative Impacts

Section 15130(b) of the CEQA Guidelines states the following:

The following elements are necessary to an adequate discussion of significant cumulative impacts, either:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document, which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts incorporates a summary of projections. The following four-tiered approach is to assess cumulative air quality impacts;

- Consistency with the SCAQMD project specific thresholds for construction and operation;
- Project consistency with existing air quality plans;
- Assessment of the cumulative health effects of the pollutants; and
- Cumulative impact of global climate change.

Project Specific Thresholds

After implementation of mitigation measures, during construction, emissions of VOC, NO_x, PM₁₀, and PM_{2.5} are not expected to exceed the SCAQMD regional significance thresholds. In addition, during operation, the Proposed Alternative Project is not expected to exceed the established regional emission thresholds for VOC, NO_x, CO, PM₁₀, and PM_{2.5}. The SCAQMD considers construction or operational emissions that do not exceed the project specific thresholds will not result in a cumulative impact. Design features that reduce the emissions generated by motor vehicles, natural gas consumption, and electricity consumption will reduce the main operational sources of GHGs, as more fully outlined above. Although the Proposed Alternative Project is not of sufficient size to create a significant

impact to global warming, incorporation of the above recommended design features will further reduce the Proposed Alternative Project's cumulative impact in this area. These design features were developed using the "New Home Construction Green Building Guidelines," 2007 Edition and "Build It Green." March 2007.

Level of Significance before Mitigation

Less than significant.

Air Quality Plans

The Basin, in which the project is located, is in nonattainment for ozone, PM₁₀, PM_{2.5}, and CO. As such, the SCAQMD is required to prepare and maintain an AQMP and a SIP to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it was recognized that changes in land use and circulation planning were necessary to maintain clean air. As discussed above, Conformance with Air Quality Management Plan, the Proposed Alternative Project is compliant with the AQMP.

Level of Significance before Mitigation

Less than significant.

Cumulative Health Impacts

The basin is in nonattainment for ozone, PM₁₀, PM_{2.5}, and CO, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect the health of sensitive individuals (i.e., elderly, children, and the sick). Therefore, when the concentration of those pollutants exceed the standard, it is likely that some of the sensitive individuals of the population could experience health effects as indicated above in Table 4.2-1.

The localized significance analysis for the Proposed Alternative Project demonstrated that during construction activities, no localized significance threshold was expected to be exceeded; therefore, the emissions of particulate matter, primarily in the form of fugitive dust, would not result in a significant cumulative health impact with implementation of the identified mitigation measures.

Long-term operational emissions are not expected to exceed the District's significance thresholds. ROG and NO_x are precursors to ozone. Because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Proposed Alternative Project emissions of VOC and NO_x may still contribute to the background concentration of ozone but such contributions would not be considered cumulatively considerable.

Operational emissions of PM₁₀ and PM_{2.5} are not expected to exceed the regional significance threshold. The combination of ozone and PM₁₀ can aggravate health effects. PM_{2.5} is a component of

PM₁₀. The ambient air quality standard for both PM₁₀ and PM_{2.5} are exceeded in the Basin. Therefore, Proposed Alternative Project emissions may contribute to the background of those pollutants but such contributions would not be considered cumulatively considerable.

The long-term impacts of wood burning in hearths and fireplaces can potentially emit smoke and toxic air contaminant through the incomplete combustion of the wood products. Such emissions could also impact indoor air quality particularly during winter when adequate ventilation and air exchanges would be at a minimum. These smoke and TAC emissions could contribute to an overall increase in smoke in the area encompassing and surrounding the proposed project site.

Level of Significance before Mitigation

Potentially significant.

Long-term health effects from residential wood burning are not expected to create a significant impact with the implementation of Mitigation Measures AQ-3 and AQ-4. Implementation of these measures would minimize the generation of local wood smoke from wood burning, such that their contribution would not be considered cumulatively considerable.

Level of Significance after Mitigation

Less than significant.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

The CEQA Guidelines indicate that a significant impact would occur if a proposed project would expose sensitive receptors to substantial pollutant concentrations.

The localized construction analysis demonstrated that without mitigation, the Proposed Alternative Project would not exceed the localized thresholds for CO, NO₂, PM₁₀, or PM_{2.5}. Therefore, during construction, the Proposed Alternative Project would not expose sensitive receptors to substantial pollutant concentrations of CO, NO₂, PM₁₀, or PM_{2.5}.

The construction equipment would emit diesel particulate matter, which is a carcinogen. However, the diesel particulate matter emissions are short term in nature. Determination of risk from diesel particulate matter is considered over a 70-year exposure time. Therefore, considering the dispersion of the emissions and the short time frame, exposure to diesel particulate matter is anticipated to be less than significant.

During operation of the Proposed Alternative Project, a CO hotspot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project. The study area intersections were projected to operate at a Level of Service "C" or better during peak hours with the improvements listed in the TIA. According to

Section 4.7.2 of the CO Protocol, if a project does not involve any intersections with an LOS “E” or “F”, no further analysis is necessary. Therefore, according to this criterion, air pollutant emissions during operation of the Proposed Alternative Project would result in a less than significant impact.

During operation of the Proposed Alternative Project, the addition of woodburning devices to the area would potentially expose sensitive receptors to localized concentrations of criteria and toxic pollutants. With the implementation of mitigation measures identified above, the Proposed Alternative Project would not expose sensitive receptors to substantial pollutant concentrations.

Level of Significance before Mitigation

Less than significant.

4.2.16 - Odors

The CEQA Guidelines indicate that a significant impact would occur if a proposed project would create objectionable odors affecting a substantial number of people.

The Proposed Alternative Project does not contain land uses typically associated with emitting objectionable odors, with the possible exception of wood smoke. Wood smoke is pleasant to some and may be a nuisance to others. Implementation and compliance with SCAQMD Rule 402 would ensure that wood smoke would not be offensive to a substantial number of people. Diesel exhaust and VOCs will be emitted during construction of the Proposed Alternative Project, which are objectionable to some; however, emissions will disperse rapidly from the project site and therefore should not be at a level to induce a negative response.

Level of Significance before Mitigation

Less than significant.

4.3 - Biological Resources

4.3.1 - Introduction

This section describes the biological character of the project site in terms of plants, wildlife, and wildlife habitats and analyzes the biological significance of the site in view of federal (FESA), state (CESA), and local laws and policies. This section evaluates the potential impacts to biological resources on-site and in the vicinity of the project site and recommends mitigation measures, where feasible, to reduce the significance of impacts that are identified.

All biological studies were conducted in accordance with accepted scientific and technical standards that are consistent with the requirements of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). The following reports were used in the preparation of this section and are included in Appendix B:

- Results of Bald Eagle Survey on Tentative Tract 16136, Moon Camp, Fawnskin, San Bernardino County, California (2002),
- Focused Flying Squirrel Trapping Report Moon Camp Project, Fawnskin, San Bernardino, California (2007),
- Southern Rubber Boa Letter Report from Glenn Stewart of the Biological Sciences of California State Polytechnic University of Pomona (2007),
- Southwestern Willow Flycatcher Focused Survey Report Moon Camp Project, Fawnskin, San Bernardino County, California (2007),
- Moon Camp Tentative Tract 16136 Supplemental Focused Rare Plant Survey (2008),
- Moon Camp Property, Fawnskin Area: Vegetation and Special Status Plants (2009),
- Bald Eagle Count in Area, Moon Camp, Fawnskin, San Bernardino County, California (2009).

4.3.1 - Existing Conditions

The Moon Camp project site (Tentative Tract No. 16136) is located approximately midway along the north shore of Big Bear Lake, at the eastern edge of the community of Fawnskin. The 62.43-acre site slopes upward from the lakeshore and State Route 38 (SR-38) (Lakeshore Drive) from a lake surface elevation of approximately 6,747 feet above mean sea level (msl) to approximately 6,960 feet msl at the northeast boundary. Slopes vary from 5 to 40 percent and continue upward beyond the property to a ridgeline exceeding 7,800 feet msl on the north. The on-site variation in elevation is approximately 213 feet.

Vegetation Communities

Plant communities in California have generally been classified by biologists either according to Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986) or

Sawyer and Keeler-Wolf's A Manual of California Vegetation (1995). Holland's descriptions were developed as part of CDFG's California Natural Diversity Database (CNDDDB), and Sawyer and Keeler-Wolf's manual was developed through the California Native Plant Society (CNPS). The CDFG now has a list of terrestrial natural communities which supersedes all other lists developed by the CNDDDB. It is based on Sawyer and Keeler-Wolf's manual but it is also structured to be compatible with previous CNDDDB lists such as Holland. Wherever applicable the plant communities are classified according to CDFG's list of terrestrial natural communities (2003) and cross-referenced to Holland's element code. Disturbed and developed areas are described according to industry standard descriptions. The CDFG does not currently have a narrative description of these vegetation communities; therefore, the descriptions provided below are according to Holland.

Four vegetation types occur within the project site. Exhibit 4.3-1, *Plant Communities Map*, illustrates their distribution and Table 4.3-1 summarizes the extent of vegetation types present within the project site. Each of the vegetation types observed during field surveys are described below.

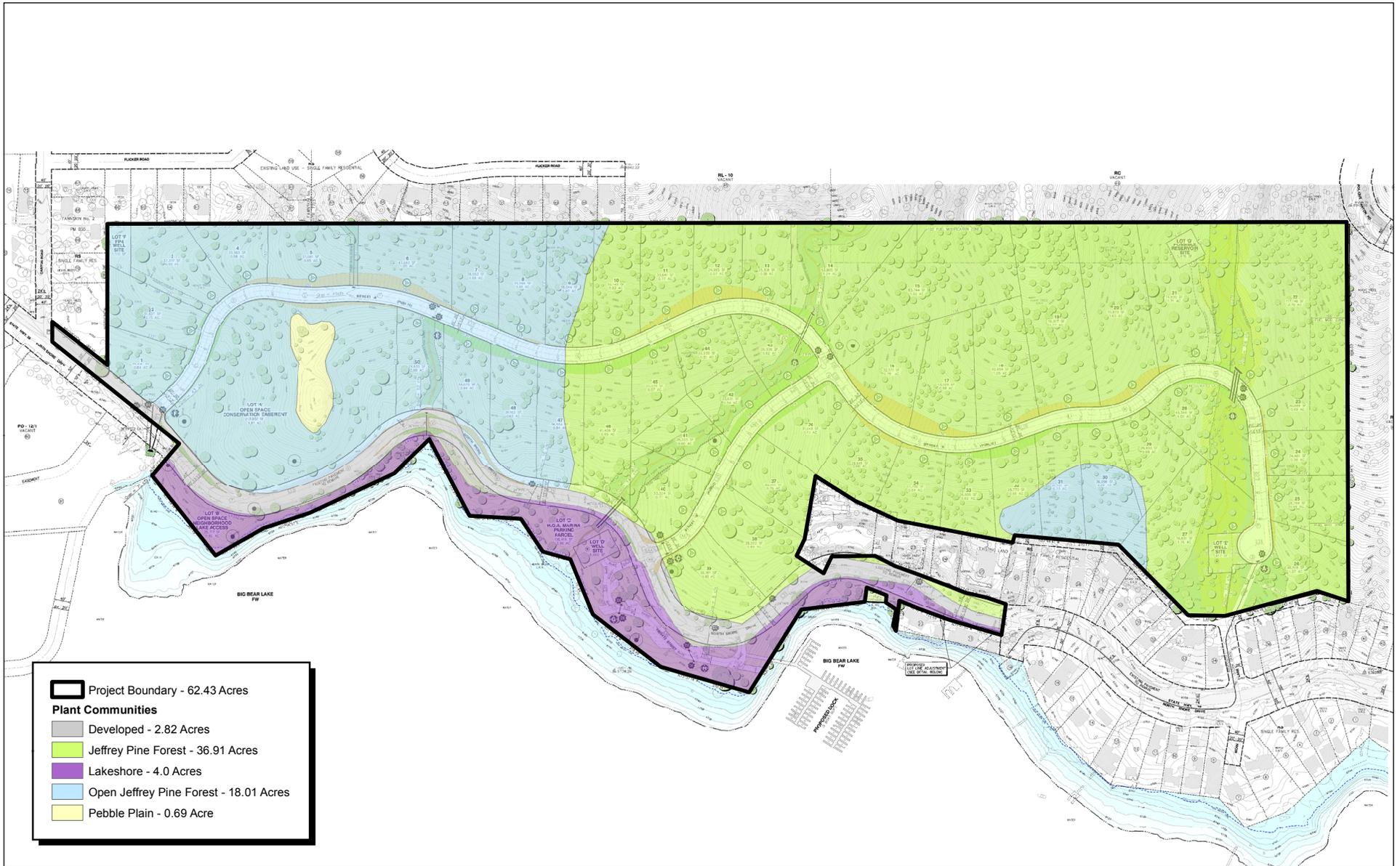
Table 4.3-1: Existing Vegetation Types on the Project Site

Vegetation Type	Acreage
Jeffrey Pine Forest	54.92
Pebble Plain	0.69
Lake Shoreline/ Ruderal	4.0
Developed (SR-38)	2.82
Total	62.43

Jeffrey Pine Forest

Jeffrey pine forest occurs on 54.92 acres of the eastern half of the project site. This area is dominated by Jeffrey pine (*Pinus jeffreyi*) with white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), western juniper (*Juniperus occidentalis*), singleleaf pinyon pine (*Pinus monophylla*), and black oak (*Quercus kelloggii*) occurring at lower densities. The understory is sparse, consisting of scattered chaparral shrubs including greenleaf manzanita (*Arctostaphylos patula*), mountain whitethorn (*Ceanothus cordulatus*), Greg's ceanothus (*Ceanothus greggii*), deer brush (*Ceanothus leucodermis*), California mountain mahogany (*Cercocarpus betuloides*), and curl-leaf mountain mahogany (*Cercocarpus ledifolius*). Herbaceous cover is generally low, consisting of grasses and forbs in scattered patches. Jeffrey pine forest occurs at elevations ranging from 3,200 to 7,800 feet above msl in southern California.

Open Jeffrey pine forest is shown as a separate vegetation type on Exhibit 4.3-1. Areas within the Jeffrey pine forest that are more open and where herbaceous cover is dominated by Wright's matting buckwheat are suitable habitat for the federally-listed Threatened ash-gray Indian paintbrush, CNPS 1B listed Parish's rock-cress (*Arabis parishii*), and California Native Plant Society (CNPS 1B) listed silver-haired ivesia. Of the 54.92 acres of Jeffrey Pine forest, 18.01 acres are considered open Jeffrey Pine forest habitat.



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



Michael Brandman Associates

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Exhibit 4.3-1 Plant Communities Map

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Pebble Plain

Pebble plain occurs on 0.69 acre of the project site north of State Route 38 (SR-38). It appears as a distinct open patch within open Jeffrey pine forest in the western portion of the project site. The substrate in this area consists of clay soil mixed with quartzite pebbles and gravel that are continually pushed to the surface through frost action. This substrate supports a high floristic diversity consisting of small cushion-forming plants, tiny annuals, grasses, and succulents that are well spaced, low growing, and sun tolerant. Several rare and special status plants are associated with pebble plain habitat, including federally-listed Threatened and Endangered species. The pebble plain habitat on the project site has been subjected to disturbance by unauthorized off-road vehicles.

Pebble Plains and Drought

Drought related conditions, which occurred during the first half of this decade resulted in pebble plain species being more difficult to locate and identify due to dormancy factors attributed from conditions of prolonged drought. Therefore, surveys that were conducted during this time (2000-2007) attempted a more focused approach in order to identify all suspected areas probable for containing threatened pebble plain species. This practice, through trial and error, may have resulted in an over-calculated estimate as was apparent in the 2008 Krantz survey (non-drought year), which identified a far less quantity of ash-gray Indian paintbrush species within the project site's pebble plain and Jeffrey pine habitats.

Lakeshore Species

Approximately 4.0 acres of the southern boundary of the project site is formed by the shore of Big Bear Lake. Plant species along the shore itself consist primarily of herbaceous native and non-native species of periodically saturated soils, including willowherb (*Epilobium* sp.), wire-grass (*Juncus mexicanus*), cursed buttercup (*Ranunculus sceleratus*), and several cinquefoil species (*Potentilla* spp.). Several seedling cottonwood trees (*Populus balsamifera* spp. *trichocarpa*) also occur in this plant community. Small patches of ruderal species transitioning into upland grassland occur along the lakeshore south of SR-38. The lake was well below its maximum level in 2001 to 2002 due to acute drought conditions. Vegetation in the narrow strip is patchy and occurs above the high-water level in areas where small areas of Jeffrey pine forest are interspersed among open ruderal vegetation and grasslands and scattered patches of arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*).

Developed

Developed areas (abutting SR-38) occur on 2.82 acres along the shoreline of the project site. Plants found in this vegetation type consist of native and non-native ornamental species which offer very little habitat value for native wildlife species. Paved areas such as SR-38 and existing turnouts are included in this vegetation type.

Wildlife

The project site has the potential to support a large variety of wildlife species.

Amphibians

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Although more typical in mesic conditions, there are a number of amphibians species that occur or potentially occur even in the more xeric habitats. These species are able to survive in dry areas by remaining beneath the soil in burrows, under logs or leaf litter, and emerging only when temperatures are low and humidity is high. Many of these species' habitats are associated with water, and they emerge to breed once the rainy season begins. Soil moisture conditions can remain high throughout the year within some habitat types, depending on factors such as amount of vegetation cover, elevation, and slope aspect.

No amphibians were detected during the field surveys; however, leaf litter and rotting logs on the project site provide potential habitat for the Pacific slender salamander (*Batrachoseps pacificus*). The western toad (*Bufo boreas*) would also be expected to occur on the project site.

Reptiles

Reptilian diversity and abundance typically vary with vegetation type and character. Many species prefer only one or two vegetation types; however, most will forage in a variety of habitats. Most species occurring in open areas use rodent burrows for cover and protection from predators and extreme weather conditions. Those species discussed below that were not observed during surveys are expected to occur based on the presence of suitable habitat (substrate and vegetation) within the project site.

Reptile species observed during the surveys include the western fence lizard (*Scleropus occidentalis*), sagebrush lizard (*Sceloporus graciosus*), western skink (*Eumeces skiltonianus*), southern alligator lizard (*Elgaria multicarinatus*), and southern Pacific rattlesnake (*Crotalus viridis helleri*). Common reptile species expected to occur on the project site include the side-blotched lizard (*Uta stansburiana*) and gopher snake (*Pituophis melanoleucus*).

Birds

Montane conifer forests in the San Bernardino Mountains can experience severe weather conditions during the winter months. Nonetheless, several resident bird species are expected to occur on the project site, using the habitats throughout the year. Other species are present only during certain seasons.

Common resident bird species observed on the project site during surveys include the following:

- Band-tailed pigeon (*Columba fasciata*);
- Red-breasted nuthatch (*Sitta canadensis*);
- Great-horned owl (*Bubo virginianus*);
- White-breasted nuthatch (*Sitta carolinensis*);

- Acorn woodpecker (*Melanerpes formicivorus*);
- Red-breasted sapsucker (*Sphyrapicus ruber*);
- Hairy woodpecker (*Picoides villosus*);
- Nuttall's woodpecker (*Picoides nuttallii*);
- Northern flicker (*Colaptes auratus*);
- Black phoebe (*Sayornis nigricans*);
- Stellar's jay (*Cyanocitta stelleri*);
- Common raven (*Corvus corax*);
- Mountain chickadee (*Poecile gambeli*);
- Bushtit (*Psaltriparus minimus*);
- House wren (*Troglodytes aedon*);
- Western bluebird (*Sialia mexicana*);
- Northern mockingbird (*Mimus polyglottos*);
- European starling (*Sturnus vulgaris*);
- Spotted towhee (*Pipilo maculatus*);
- Dark-eyed junco (*Junco hyemalis*);
- Brewer's blackbird (*Euphagus cyanocephalus*);
- Brown-headed cowbird (*Molothrus ater*);
- House finch (*Carpodacus mexicanus*);
- Red crossbill (*Loxia curvirostra*); and
- Wild turkey (*Meleagris gallopavo*).

Mammals

The ornate shrew (*Sorex ornatus*), brush mouse (*Peromyscus boylii*), western grey squirrel (*Sciurus griseus*), California ground squirrel (*Spermophilus beecheyi*), dusky-footed woodrat (*Neotoma fuscipes*), California vole (*Microtus californicus*), and coyote (*Canis latrans*) were observed on the project site during the surveys. Larger mammals that may occur on the project site include the gray fox (*Urocyon cinereoargenteus*), black bear (*Ursus americanus*), badger (*Taxidea taxus*), and mountain lion (*Felis concolor*). The California myotis (*Myotis californicus*) and big brown bat (*Eptesicus fuscus*) may occur on the project site. Gaps in peeling bark and hollow snags or limbs provide potential roosting and maternal colony opportunities for these and other bat species. Other mammals expected to occur on the project site include the following:

- Dusky shrew (*Sorex monticolus*);
- Broad-footed mole (*Scapanus latimanus*);
- Merriam's chipmunk (*Tamias merriami*);
- Lodgepole chipmunk (*Tamias speciosus*);
- Golden-mantled ground squirrel (*Spermophilus lateralis*);
- Deer mouse (*Peromyscus maniculatus*);
- Western harvest mouse (*Reithrodontomys megalotis*);
- Botta's pocket gopher (*Thomomys bottae*); and
- House mouse (*Mus musculus*).

Special Status Biological Resources

The following discussion addresses special status biological resources observed, reported, or having the potential to occur on the project site. These resources include plant and wildlife species that have been afforded special status and/or recognition by federal and state resource agencies, as well as the CNPS. Table 4.3-2, Special Status Plant Species, and Table 4.3-3, Special Status Wildlife Species, provide a summary of special status plant and wildlife species known to occur in the Proposed Alternative Project region including information on the status, potential for occurrence, and definitions for the various status designations.

Table 4.3-2: Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
<i>Abronia nana</i> ssp. <i>covillei</i> Coville's dwarf abronia	None	None	4	None; restricted to carbonates soils
<i>Allium parishii</i> Parish's onion	None	None	4	Low; above known elevation range
<i>Antennaria marginata</i> White-margined everlasting	None	None	2	None; outside of known geographic range (only local occurrences in Barton Flats area)
<i>Arabis breweri</i> var. <i>pecuniaria</i> San Bernardino rock-cress	None	None	1B	None; outside geographical range
<i>Arabis dispar</i> Pinyon rock-cress	None	None	2	None; outside known geographic range (only occurs on desert-facing slopes)
<i>Arabis parishii</i> Parish's rock-cress	None	None	1B	Observed
<i>Arabis shockleyi</i> Shockley's rock-cress	None	None	2	None; restricted to carbonates soils
<i>Arenaria lanuginosa</i> ssp. <i>saxosa</i> Rock sandwort	None	None	2	Moderate; marginally suitable habitat
<i>Arenaria ursina</i> Big Bear Valley sandwort	FT	C	1B	High; suitable habitat
<i>Astragalus albens</i> Cushenbury milk-vetch	FE	C	1B	None; no suitable habitat (carbonate soils)
<i>Astragalus bicristatus</i> Crested milk-vetch	None	None	4	High; suitable habitat
<i>Astragalus lentiginosus</i> var. <i>sierrae</i> Big Bear Valley milk-vetch	None	None	1B	High; suitable habitat
<i>Astragalus leucolobus</i> Big Bear Valley woollypod	None	None	1B	Observed
<i>Atriplex parishii</i> Parish's smallscale	None	None	1B	None; no suitable habitat (alkali sink)
<i>Berberis fremontii</i> Fremont's barberry	None	None	3	None; no suitable habitat (presumed extinct in Cushenbury area)
<i>Botrychium crenulatum</i> Scalloped moonwort	None	None	2	None; no suitable habitat (marshes, bogs)
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa lily	None	None	1B	Moderate; marginally suitable habitat
<i>Calochortus plummerae</i> Plummer's mariposa lily	None	None	1B	None; above known elevation range
<i>Castilleja cinerea</i> Ash-gray Indian paintbrush	FT	None	1B	Observed
<i>Castilleja lasiorhyncha</i> San Bernardino Mountain owl's clover	None	None	1B	High; suitable habitat

Table 4.3 2 (cont.): Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
<i>Dryopteris filix-mas</i> Male fern	None	None	2	Low; local rarity; outside known range
<i>Dudleya abramsii</i> ssp. <i>affinis</i> San Bernardino Mountains dudleya	None	None	1B	Moderate; marginally suitable habitat
<i>Erigeron breweri</i> var. <i>jacinteus</i> San Jacinto Mountains daisy	None	None	4	None; below known elevation range
<i>Erigeron parishii</i> Parish's daisy	FT	None	1B	None; no suitable habitat (carbonate soils)
<i>Erigeron unicaulis</i> Limestone daisy	None	None	2	None; outside known geographic range (local reports erroneous)
<i>Eriogonum foliosum</i> Leafy buckwheat	None	None	1B	High; suitable habitat
<i>Eriogonum kennedyi</i> var. <i>austromontanum</i> Southern mountain buckwheat	FT	None	1B	Low; suitable habitat (see text)
<i>Eriogonum ovalifolium</i> var. <i>vineum</i> Cushenbury buckwheat	FE	None	1B	None; no suitable habitat (carbonate soils)
<i>Eriophyllum lanatum</i> var. <i>obovatum</i> Southern Sierra wooly sunflower	None	None	4	Low; margin of known geographic range
<i>Fimbristylis thermalis</i> Hot springs fimbristylis	None	None	4	None; no suitable habitat (alkaline meadows, hot springs)
<i>Galium jepsonii</i> Jepson's bedstraw	None	None	4	High; suitable habitat
<i>Galium johnstonii</i> Johnston's bedstraw	None	None	4	High; suitable habitat
<i>Gentiana fremontii</i> Moss gentian	None	None	2	None; no suitable habitat
<i>Gilia leptantha</i> ssp. <i>leptantha</i> San Bernardino Mountains gilia	None	None	1B	Low (see text)
<i>Helianthus nuttalli</i> ssp. <i>parishii</i> Los Angeles sunflower	None	None	1A	None; presumed extinct, above known elevation range
<i>Heuchura hirsutissima</i> Shaggy-haired alum root	None	None	1B	Low; limited suitable habitat
<i>Heuchura parishii</i> Parish's alumroot	None	None	1B	Low; limited suitable habitat
<i>Horkelia wilderae</i> Barton Flats horkelia	None	None	1B	None; outside known geographic range, endemic to Barton Flats area
<i>Hulsea vestita</i> ssp. <i>parryi</i> Parry's sunflower	None	None	4	None; outside known geographic range (only occurs on desert-facing slopes)
<i>Hulsea vestita</i> ssp. <i>pygmaea</i> Pygmy hulsea	None	None	1B	None; below elevation range

Table 4.3 2 (cont.): Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
<i>Ivesia argyrocoma</i> Silver-haired ivesia	None	None	1B	Observed
<i>Juncus duranii</i> Duran's rush	None	None	4	High; suitable habitat
<i>Lesquerella kingii</i> var. <i>bernardina</i> San Bernardino Mountains bladderpod	FE	None	1B	None; no suitable habitat (carbonate soils)
<i>Lewisia brachycalyx</i> Short-sepaled lewisia	None	None	2	Moderate; limited suitable habitat
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> Ocellated Humboldt lily	None	None	4	None; above known elevation range
<i>Lillium parryi</i> Lemon lily	None	None	1B	None; no suitable habitat
<i>Linanthus killipii</i> Baldwin Lake linanthus	None	None	1B	High; suitable habitat
<i>Malaxiis monohyllos</i> ssp. <i>brachypoda</i> Adder's mouth	None	None	2	None; below known elevation range
<i>Mimulus exiguus</i> San Bernardino Mountain monkeyflower	None	None	1B	High; suitable habitat
<i>Mimulus purpureus</i> var. <i>purpureus</i> Purple monkeyflower	None	None	2	Observed
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	None	None	1B	None; outside known geographic range
<i>Navarretia peninsularis</i> Baja navarretia	None	None	1B	Low; limited suitable habitat
<i>Oxytheca caryophylloides</i> Chickweed oxytheca	None	None	4	High; suitable habitat
<i>Oxytheca parishii</i> var. <i>cienegensis</i> Cienega seca oxytheca	None	None	1B	None; outside known geographic range
<i>Oxytheca parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	FE	None	1B	None; no suitable habitat (carbonate soils)
<i>Oxytropis oreophila</i> Mountain oxytrope	None	None	2	None; below known elevation range
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	None	None	2	Low; limited suitable habitat
<i>Phacelia exilis</i> Transverse Range phacelia	None	None	4	High; suitable habitat
<i>Phacelia mohavensis</i> Mojave phacelia	None	None	4	High; suitable habitat
<i>Phlox dolichantha</i> Bear Valley phlox	None	None	1B	Observed

Table 4.3 2 (cont.): Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
<i>Poa atropurpurea</i> San Bernardino bluegrass	FE	None	1B	Low; limited suitable habitat
<i>Poliomintha incana</i> Frosted mint	None	None	1A	None; no suitable habitat (dunes and sandy flats), above known elevation range
<i>Polystichum kruckebergii</i> Krukeberg's sword fern	None	None	4	None; limited suitable habitat, outside known geographic distribution
<i>Populus angustifolia</i> Narrow-leaved cottonwood	None	None	2	None; outside known geographic range
<i>Pyrrocoma uniflora</i> ssp. <i>gossypina</i> Bear Valley pyrrocoma	None	None	1B	Moderate; suitable habitat
<i>Rupertia rigida</i> Parish's rupertia	None	None	4	High; limited suitable habitat
<i>Scutellaria bolanderi</i> ssp. <i>austromntanum</i> Southern mountain skullcap	None	None	1B	None, outside known geographic range, above known elevation range
<i>Sedum niveum</i> Davidson's stonecrop	None	None	4	None; no suitable habitat (rock ledges and cliffs)
<i>Selaginella asprella</i> Bluish spike-moss	None	None	4	Low; limited suitable habitat
<i>Senecio bernardinus</i> San Bernardino butterweed	None	None	1B	Low; limited suitable habitat
<i>Senecio ionophyllus</i> Tehachapi ragwort	None	None	4	Low; limited suitable habitat
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i> Parish's checkerbloom	C	R	1B	Low; limited suitable habitat
<i>Sidalcea pedata</i> Bird's foot checkerbloom	FE	SE	1B	Low to moderate (see text); suitable habitat
<i>Sphenopholis obtusata</i> Prairie wedge grass	None	None	2	High; suitable habitat
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	None	None	4	High; suitable habitat
<i>Streptanthus campestris</i> Southern jewelflower	None	None	1B	High; suitable habitat
<i>Swertia neglecta</i> Pine green-gentian	None	None	4	High; suitable habitat
<i>Taraxacum californicum</i> California dandelion	FE	None	1B	Low; limited suitable habitat
<i>Thelypodium stenopetalum</i> Slender-petaled thelypodium	FE	None	1B	None; no suitable habitat (alkaline meadows)
<i>Trichostema micranthum</i> Small-flowered bluecurls	None	None	4	High; suitable habitat
<i>Viola pinetorum</i> ssp. <i>grisea</i> Grey-leaved violet	None	None	1B	Low; outside known geographic range

Table 4.3 2 (cont.): Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
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 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." R: Rare C: Candidate for state listing as Threatened or Endangered. CNPS 1A Plants Presumed Extinct in California 1B Plants Rare, Threatened, or Endangered in California and Elsewhere Plants Rare, Threatened, or Endangered in California But More Common Elsewhere Plants About Which We Need More Information- A Review List Plants of Limited Distribution - A Watch List				

Special Status Plants

Eighty-one (81) special status plant species are known to occur in the project region, 30 of which occur or have a moderate or higher potential to occur on the project site. A brief description of these special status plant species are outlined below and summarized above in Table 4.3-2. Six of these special status plant species have been observed on the project site.

Parish’s Rock-Cress (*Arabis parishii*). Parish’s rock cress is a CNPS List 1B species that typically blooms from April to May. This perennial herb occurs in rocky, quartzite and clay, or sometimes carbonate soils in pebble plains, pinyon-juniper woodlands, and upper montane coniferous forests from approximately 3,900 to 8,000 feet above msl. It is endemic to the San Bernardino Mountains. A 2002 survey of the project site found the species was observed uncommonly in scattered patches throughout pebble plain and open Jeffrey pine forest on the project site during botanical surveys conducted in 2002 (White and Leatherman, 2002). A 2007 survey conducted by Scott White Biological Consultin, and a 2008 survey conducted by Timothy Krantz Biological Consulting reaffirmed that no changes in the species location or size have occurred.

Big Bear Valley Woollypod (*Astragalus leucolobus*). Big Bear Valley woollypod is a CNPS List 1B species that typically blooms from May to July. This perennial herb occurs in rocky soils of lower montane coniferous forest, pebble plain, pinyon-juniper woodland, and upper montane coniferous forests from approximately 5,600 to 8,000 feet above msl. It is found in the

San Bernardino, San Gabriel, San Jacinto, and Santa Rosa mountains. This species was observed throughout the project site during botanical surveys conducted in 2002 (White and Leatherman, 2002). The 2007 White survey and 2008 Krantz reaffirmed that no changes in the species location or size have occurred.

Palmer's Mariposa Lily (*Calochortus palmeri* var. *palmeri*). Palmer's mariposa lily is a CNPS List 1B species that typically blooms between May and July. This perennial, bulbiferous herb occurs in mesic chaparral, lower montane coniferous forest, meadows, and seeps from approximately 3,200 to 7,200 feet above msl. It is a California endemic found in the South Coast and Transverse ranges in Kern, Los Angeles, Riverside, Santa Barbara, San Bernardino, San Luis Obispo, and Ventura counties. This species has a moderate potential to occur on-site.

Ash-Gray Indian Paintbrush (*Castilleja cinerea*). Ash-gray Indian paintbrush is a federally-listed Threatened and CNPS List 1B species. It is a root parasite on other plants, often parasitizing the Federally-listed Threatened southern mountain buckwheat and Wright's matting buckwheat. It is a perennial herb, and typically blooms between May and August. It occurs in pebble plains, meadows, seeps, and open pinyon or Jeffrey pine forest from approximately 5,900 to 9,300 feet above msl and is endemic to the eastern San Bernardino Mountains (Big Bear Valley, Holcolmb Valley, Onyx Summit, Snow Valley, and Sugarloaf Ridge). This species was reported and mapped on the project site by MBA (MBA 2000) and the CNDDDB (CDFG 2001). Botanical surveys in 2002 identified populations of this species throughout approximately 11.8 acres of pebble plain habitat and open Jeffrey pine forest in the western half of the project site. The survey also indicated that the species was parasitizing Wright's matting buckwheat. The 2007 White survey indicated that the species location and size had not change from previous surveys conducted by MBA (2000) and by White (2007). However, a survey performed in 2008 by Dr. Timothy Krantz (a year with normal precipitation) indicated that the species occurrence in the middle and western portions of the project site was significantly less in size than previously reported in surveys conducted by CNDDDB, MBA and White. A total of 7.71 acres of occupied habitat occurs on the project site.

San Bernardino Mountains Dudleya (*Dudleya abramsii* ssp. *affinis*). The San Bernardino Mountains dudleya is a CNPS List 1B species that typically blooms from April to June. This perennial herb occurs in granitic, quartzite, or carbonate soils of pebble plain, pinyon-juniper woodland, and upper montane coniferous forest from approximately 5,800 to 8,500 feet above msl. This species is endemic to the San Bernardino Mountains. The project site provides marginally suitable habitat for this species and the potential for occurrence is considered to be moderate.

Leafy Buckwheat (*Eriogonum foliosum*). Leafy buckwheat is a CNPS List 1B species that typically blooms from July to October. This annual herb occurs in sandy soils of chaparral, lower montane coniferous forest, and pinyon-juniper woodland from approximately 3,900 to 7,200 feet above msl. This species is found in scattered locations from Big Bear Valley south to Baja California. The

project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

Jepson's Bedstraw (*Galium jepsonii*). Jepson's bedstraw is a CNPS List 4 species that typically blooms from July to August. This rhizomatous, perennial herb occurs in granitic, rocky or gravelly soils in lower and upper montane coniferous forests from approximately 6,500 to 8,100 feet above msl. This species is found in the San Gabriel and San Bernardino mountains. The project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

Johnston's Bedstraw (*Galium johnstonii*). Johnston's bedstraw is a CNPS List 4 species that typically blooms from June to July. This perennial herb occurs in chaparral, lower montane coniferous forest, pinyon-juniper woodland, and riparian woodland from approximately 5,300 to 7,500 feet above msl. This species is found in the San Gabriel and San Bernardino mountains. The project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

Silver-Haired Ivesia (*Ivesia argyrocoma*). Silver-haired ivesia is a CNPS List 1B species that typically blooms between June and August. This perennial herb occurs in alkaline meadows and seeps, pebble plains, and upper montane coniferous forest from approximately 4,900 to 8,800 feet above msl. It occurs in the San Bernardino Mountains and a disjunct population occurs in the mountains of Baja California. This species was reported on the project site by MBA (MBA 2000) and was observed throughout mapped pebble plain habitat on the project site during the 2002 and 2008 botanical surveys.

Duran's Rush (*Juncus duranii*). Duran's rush is a CNPS List 4 species that typically blooms from July to August. It is a rhizomatous, perennial herb that occurs in mesic soils of lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest from approximately 5,800 feet to 9,000 feet above msl. This species is found in the San Bernardino, San Gabriel, and San Jacinto mountains. The project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

Short-Sepaled Lewisia (*Lewisia brachycalyx*). Short-sepaled lewisia is a CNPS List 2 species that typically blooms from May to June. It is a perennial herb that occurs in mesic meadows and seeps, and lower montane coniferous forest from 4,500 to 7,500 feet above msl. This species is endemic to the San Bernardino Mountains. The project site provides limited suitable habitat for this species and the potential for occurrence is considered to be moderate.

Baldwin Lake Linanthus (*Linanthus killipii*). The Baldwin Lake linanthus is a CNPS List 1B species that blooms from May to July. It is an annual herb that occurs in alkaline meadows and seeps, pebble plain, pinyon-juniper woodland, and upper montane coniferous forest from approximately 5,500 to 7,800 feet above msl. This species is endemic to the San Bernardino Mountains. The

project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

San Bernardino Mountain Monkeyflower (*Mimulus exiguus*). The San Bernardino Mountain monkeyflower is a CNPS List 1B species that typically blooms from June to July. It is an annual herb that occurs in mesic, clay soils of meadows and seeps, pebble plain, and upper montane coniferous forest between approximately 5,800 and 7,500 feet above msl. This species is found in the San Bernardino Mountains and high mountains of Baja California. The project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

Purple Monkeyflower (*Mimulus purpureus var. purpureus*). Purple monkeyflower is a CNPS List 2 species that typically blooms from May to July. It is an annual herb that occurs in meadows and seeps, pebble plain, and upper montane coniferous forest from approximately 6,100 to 7,500 feet above msl. This species is found in the San Bernardino Mountains and high mountains of Baja California. The species was first observed on site during botanical surveys in 1988 and was later found to be widely distributed among the site's pebble plain, the 4.91-acre conservation easement area, and along a draw on the eastern portion of the site, corresponding to Lot 50 (Krantz, 2008).

Chickweed *Oxytheca* (*Oxytheca caryophylloides*). Chickweed oxytheca is a CNPS List 4 species that typically blooms from July to September. It is an annual herb that occurs in sandy soils of lower montane coniferous forest from approximately 3,900 to 8,500 feet above msl. This species is found in the southern Sierra Nevada, Transverse Ranges, and San Jacinto Mountains. The project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

Parish's Yampah (*Perideridia parishii ssp. parishii*). Parish's yampah is a CNPS List 2 species that typically blooms from June to August. It is a perennial herb that occurs in lower and upper montane coniferous forests, and meadows and seeps above approximately 6,500 feet above msl. This species is found in the San Bernardino Mountains and in disjunct populations in Arizona and New Mexico. There is a low potential for this species to occur on site.

Transverse Range Phacelia (*Phacelia exilis*). The Transverse Range phacelia is a CNPS List 4 species that typically blooms from May to August. It is an annual herb that occurs in sandy or gravelly soils in lower and upper montane coniferous forests, and meadows and seeps from approximately 3,500 to 8,500 feet above msl. This species is found in the southern Sierra Nevada and Transverse Ranges. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Mojave Phacelia (*Phacelia mohavensis*). The Mojave phacelia is a CNPS List 4 species that typically blooms from April to August. It is an annual herb that occurs in sandy or gravelly soils of cismontane woodland, lower montane coniferous forest, meadows and seeps, and pinyon-juniper woodland from approximately 4,500 to 8,100 feet above msl. This species is found in the

San Gabriel and San Bernardino mountains. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Bear Valley Phlox (*Phlox dolichantha*). The Bear Valley phlox is a CNPS List 1B species that blooms from June to July. It is a perennial herb that occurs in pebble plain and upper montane coniferous forest from approximately 6,500 to 8,800 feet above msl. This species is endemic to the San Bernardino Mountains. Although restricted to Big Bear and Holcomb Valleys, its regional distribution extends up to the summit of Sugarloag Mountain south of Big Bear Valley and as far north as White Mountain, northwest of Holcomb Valley. The taxon is fairly common within its range and is not considered to be a high priority for formal listing or more formal protection (Krantz 2008). Krantz (2008) found the species to be rather widely distributed on the project site in open black oak woodland and under Jeffrey pines.

San Bernardino Bluegrass (*Poa atropurpurea*). San Bernardino bluegrass is a Federally-listed Endangered and CNPS List 1B species that typically blooms from May to June. It is a rhizomatous, perennial herb that occurs in mesic meadows and seeps between approximately 4,800 and 7,200 feet above msl. This species is found in the San Bernardino and Laguna mountains (San Diego). The project site does not provide suitable habitat for this species and the potential to occur is considered to be low.

Bear Valley Pyrrocoma (*Pyrrocoma uniflora ssp. gossypina*). Bear Valley pyrrocoma is a CNPS List 1B species that typically blooms from July to August. It is a perennial herb that occurs in meadows and seeps, and pebble plain from approximately 5,200 to 7,600 feet above msl. This species is endemic to the San Bernardino Mountains. The project site does not provide suitable habitat for this species and the potential to occur is considered to be low.

Parish's Rupertia (*Rupertia rigida*). Parish's rupertia is a CNPS List 4 species that typically blooms from June to July. It is a perennial herb that occurs in chaparral, cismontane woodland, and lower montane coniferous forest below approximately 8,100 feet above msl. This species is found in the San Bernardino Mountains, Peninsular Ranges, and Baja California. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Prairie Wedge Grass (*Sphenopholis obtusata*). Prairie wedge grass is a CNPS List 2 species that typically blooms from April to July. It is a perennial herb that occurs in mesic soils of cismontane woodland, meadows and seeps between approximately 1,000 and 6,550 feet above msl. This species is found in a few widely scattered locations in Amador, Fresno, Inyo, Mono, Riverside, and San Bernardino counties in California. The project site provides suitable habitat for this species and the potential to occur is considered to be high.

Laguna Mountains Jewelflower (*Streptanthus bernardinus*). The Laguna Mountains jewelflower is a CNPS List 4 species that typically blooms from June to July. It is a perennial herb that occurs in

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	Status ¹		Likelihood for Occurrence
	USFWS	CDFG	
Invertebrates			
<i>Euchloe hyantis</i> ssp. <i>andrewsi</i> Andrews' marble butterfly	SOC	C	Low; above known elevation range, limited suitable habitat
Amphibians			
<i>Ensatina escholtzii croceator</i> Yellow-blotched salamander	SOC	SSC	Low; limited marginally suitable habitat
<i>Ensatina escholtzii klauberi</i> Large-blotched salamander	SOC	SSC	None; above known elevation range, outside known geographic range
<i>Rana muscosa</i> Mountain yellow-legged frog	FPE	SSC	None; no suitable habitat
<i>Scaphiopus hamondii</i> Western spadefoot toad	SOC	SSC	None; above known elevation range
<i>Taricha torosa torosa</i> Coast range newt	SOC	SSC	None; no suitable habitat, above known elevation range
Reptiles			
<i>Anniella pulchra pulchra</i> 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	
<i>Charina bottae umbricata</i> Southern rubber boa	SOC	ST	Low; limited suitable habitat
<i>Cnemidophorus tigris multiscutatus</i> Coastal western whiptail	SOC	C	Moderate; suitable habitat
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	SOC	C	None; above known elevation range, no suitable habitat
<i>Diadophis punctatus modestus</i> San Bernardino ringneck snake	SOC	C	Low; limited suitable habitat
<i>Lampropeltis zonata parvirubra</i> San Bernardino Mountain kingsnake	SOC	C	Moderate; marginally suitable habitat
<i>Lichanura trivirgata roseofusca</i> Coastal rosy boa	SOC	C	None; above known elevation range
<i>Phrynosoma coronatum</i> ssp. <i>blainvillei</i> San Diego coast horned lizard	SOC	SSC/P	None; above known elevation, lack of suitable habitat
<i>Sceloporus graciosus vendenbergianus</i> Southern sagebrush lizard	SOC	C	Observed
<i>Salvadora hexalepis virgulata</i> Coast patch-nosed snake	SOC	SSC	None; lack of suitable habitat, above known elevation
<i>Thamnophis hammondi hammondi</i> Two-striped garter snake	C	SSC	None; no suitable habitat
Birds			
<i>Accipiter cooperii</i> Cooper's hawk	C	SSC	Nesting: Moderate Foraging: High
<i>Accipiter gentilis</i> Northern goshawk	SOC	SSC	Nesting: None Foraging: Moderate
<i>Accipiter striatus</i> Sharp-shinned hawk	C	SSC	Nesting: None Foraging: High in winter
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	SOC	SSC	Nesting: None Foraging: None; above known elevation range
<i>Amphispiza belli belli</i> Bell's sage sparrow	SOC	SSC	Nesting: None Foraging: None; above known elevation range
<i>Aquila chrysaetos</i> Golden eagle	C	SSC	Nesting: None Foraging: High
<i>Asio otus</i> Long-eared owl	C	SSC	Nesting: Low Foraging: Moderate
<i>Buteo regalis</i> Ferruginous hawk	SOC	SSC	Nesting: None Foraging: Low in winter
<i>Circus cyaneus</i> Northern harrier	C	SSC	Nesting: None Foraging: Low
<i>Cypseloides niger</i> Black swift	C	SSC	Nesting: None Foraging: Moderate
<i>Dendroica petechia</i> Yellow warbler	C	SSC	Nesting: None Foraging: Moderate
<i>Elanus leucereus</i> 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	
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	FE	SE	Nesting: Low Foraging: Moderate; rare migrant
<i>Eremophila alpestris actia</i> California horned lark	C	SSC	Nesting: None Foraging: None; above known elevation range
<i>Falco columbaris</i> Merlin	C	SSC	Nesting: None Foraging: Low
<i>Falco mexicanus</i> Prairie falcon	C	SSC	Nesting: None Foraging: Low
<i>Falco peregrinus anatum</i> American Peregrine falcon	C	FE	Nesting: None Foraging : Low
<i>Haliaeetus leucocephalus</i> Bald eagle		SE	Observed Observed
<i>Lanius ludovicianus</i> Loggerhead shrike	SOC	SSC	Nesting: None Foraging: None; above known elevation range
<i>Piranga flava</i> Hepatic tanager	C	SSC	Nesting: Low Foraging: Low
<i>Progne subis</i> Purple martin	C	SSC	Nesting: Low Foraging: Low; local rarity
<i>Strix occidentalis occidentalis</i> California spotted owl	SOC	SSC	Nesting: Low/None observed during focused surveys Foraging: High/Observed in close proximity to project site
<i>Vireo vicinior</i> Gray vireo	C	SSC	Nesting: None Foraging: Low
Mammals			
<i>Antrozus pallidus</i> Pallid bat	C	SSC	Roosting: Low Foraging: Low
<i>Euderma maculatum</i> Spotted bat	SOC	SSC	Roosting: None Foraging: Moderate
<i>Eumops perotis californicus</i> California mastiff bat	SOC	SSC	Roosting: None Foraging: Low
<i>Glaucomys sabrinus californicus</i> San Bernardino Mountain flying squirrel	SOC	SSC	Breeding: Low Foraging: High
<i>Myotis ciliolabrum</i> Small-footed myotis	SOC	C	Roosting: Low Foraging: High
<i>Myotis evotis</i> Long-eared myotis	SOC	C	Roosting: High Foraging: High
<i>Myotis lucifugus</i> Occult little brown bat	SOC	SSC	Roosting: High Foraging: High
<i>Myotis thysanodes</i> Fringed myotis	SOC	C	Roosting: Low Foraging: Moderate
<i>Myotis volans</i> Long-legged myotis	SOC	C	Roosting: Moderate Foraging: Moderate
<i>Myotis yumanensis</i> 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	
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	SOC	SSC	None; no suitable habitat
<i>Perognathus alticola alticola</i> White-eared pocket mouse	SOC	SSC	None; presumed extinct locally
<i>Plecotus townsendii townsendii</i> 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 umbricata*). 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 outcrops 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 Emeritus of Zoology and Environmental Sciences, Cal Poly 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 chrysaetos*). 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.

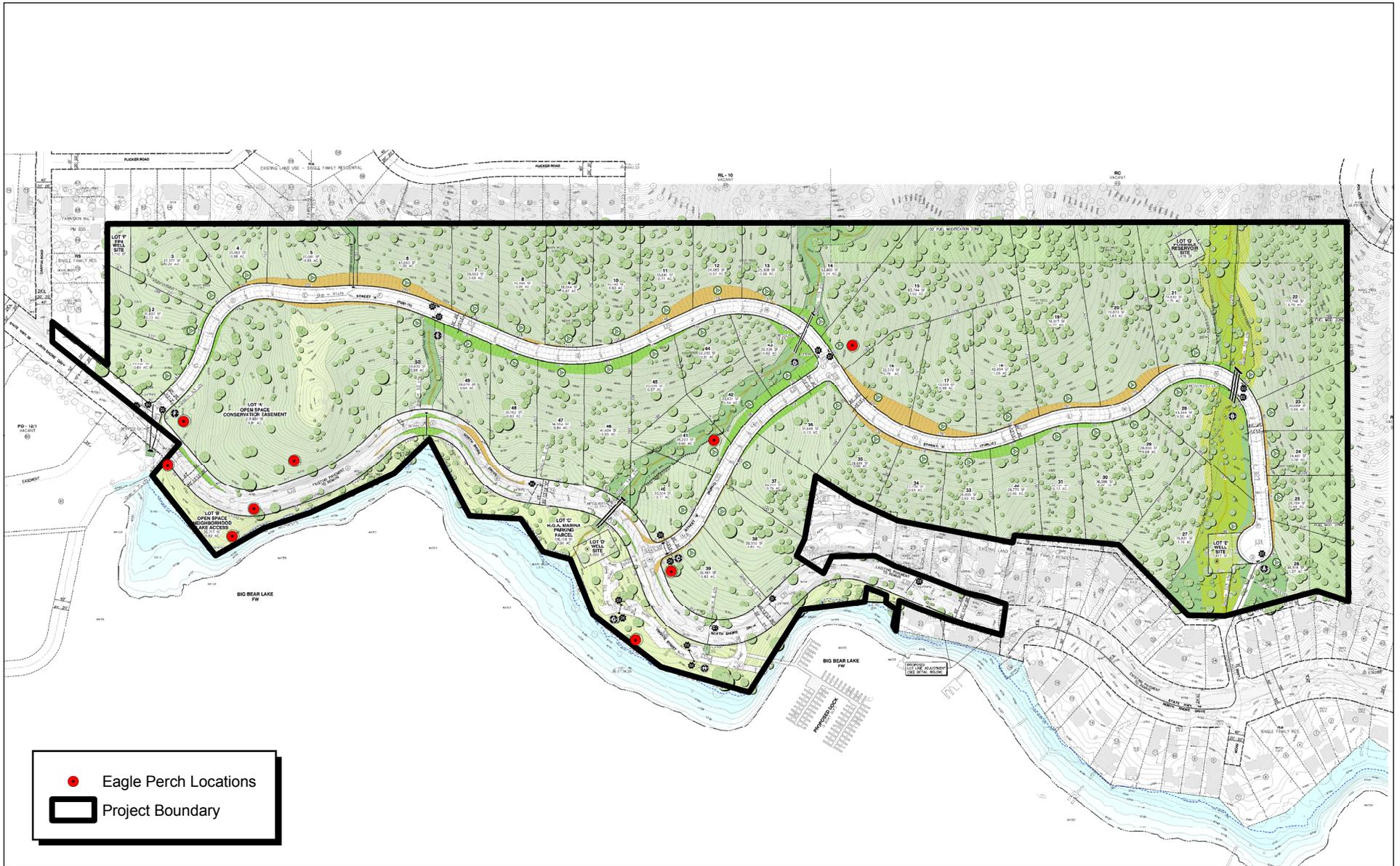
Southwestern Willow Flycatcher (*Empidonax traillii extimus*). The southwestern willow flycatcher is a federally- and State-listed endangered species. This subspecies has declined drastically due to a loss of breeding habitat and nest parasitism by brown-headed cowbirds. This species occurs in riparian 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.



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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 Treaty 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.

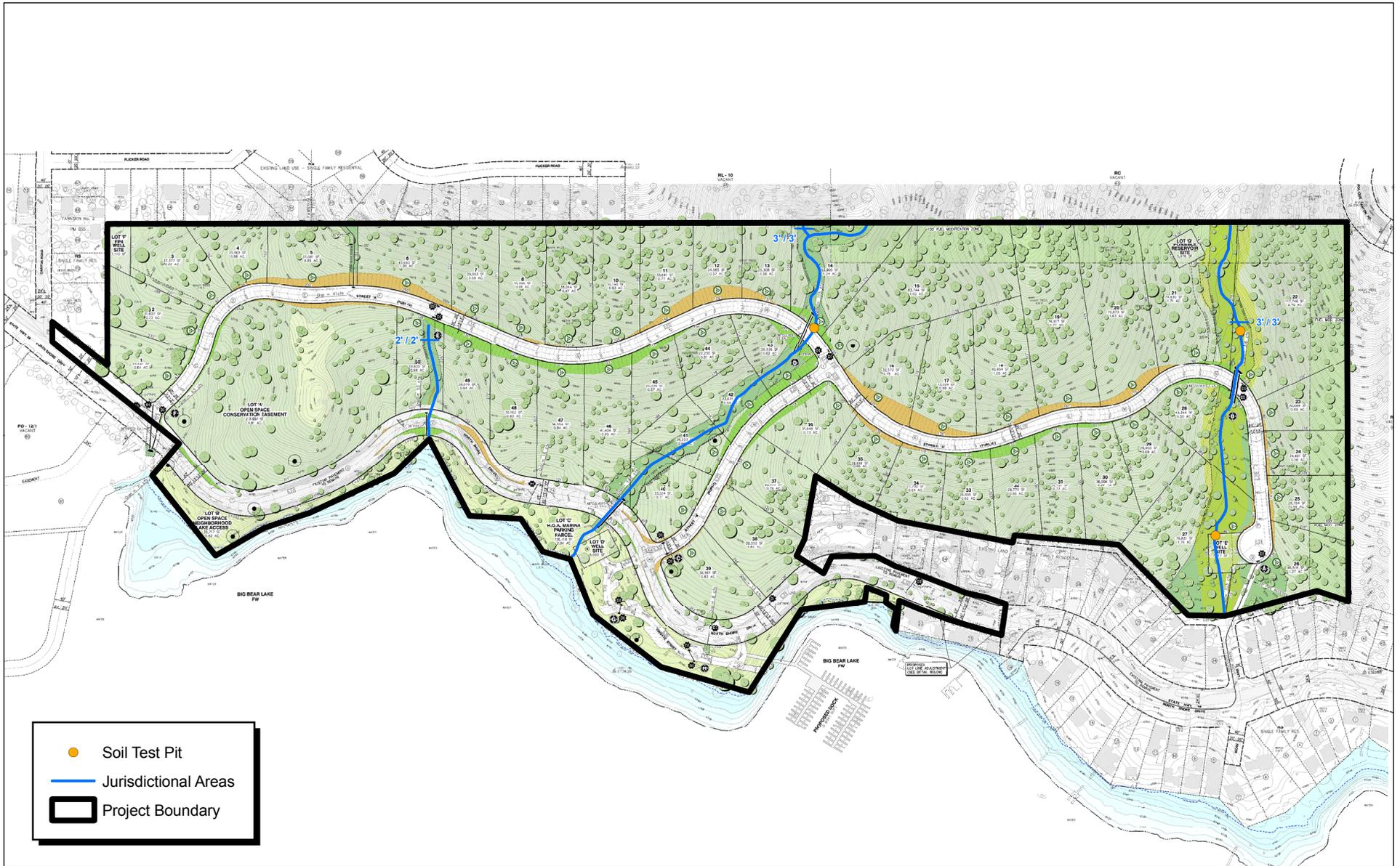
Vegetation within the drainages of the project site consisted of upland habitat, dominated by Jeffrey pines. Soils within the drainage were documented to be silty-sand (large grain). Soil samples taken on-site were generally dry and lacked characteristics of hydric soils (i.e., odor, streaking, mottling). 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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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 (*Lesquerella 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.

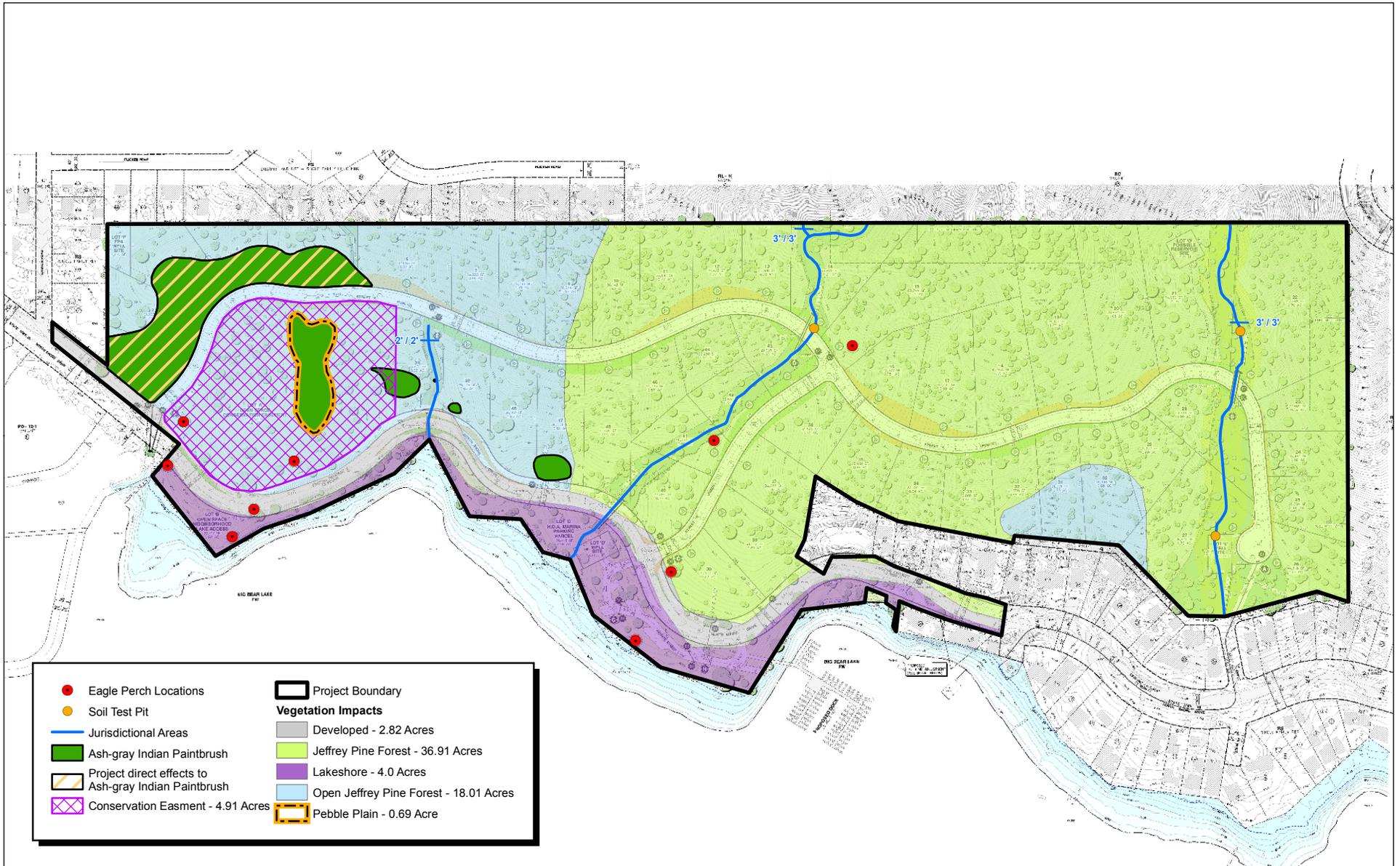
Special Status Plant Species Known to Occur on the Project Site

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.



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 Emeritus 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 effects (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 administered 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.

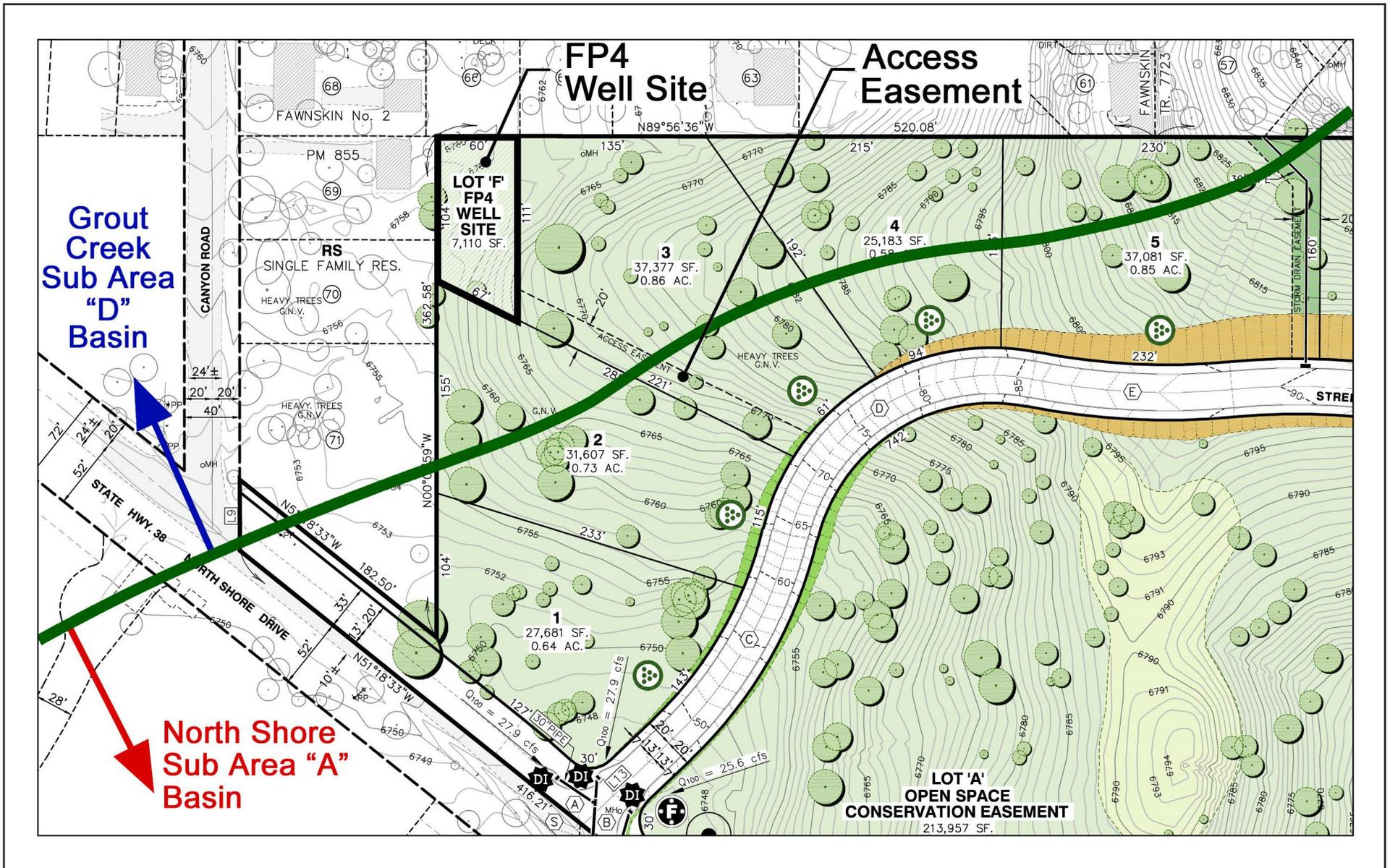
The baseline depth to groundwater in the North Shore Subunit is at 5 to 50 feet below surface depth. During the period 1996 to 2003, the groundwater level dropped approximately 20 feet in the North Shore Subunit. There are 40 private, homeowner, active wells currently extracting water from the Subarea 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).



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 (HCO) 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 synthetic 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 Permittees 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

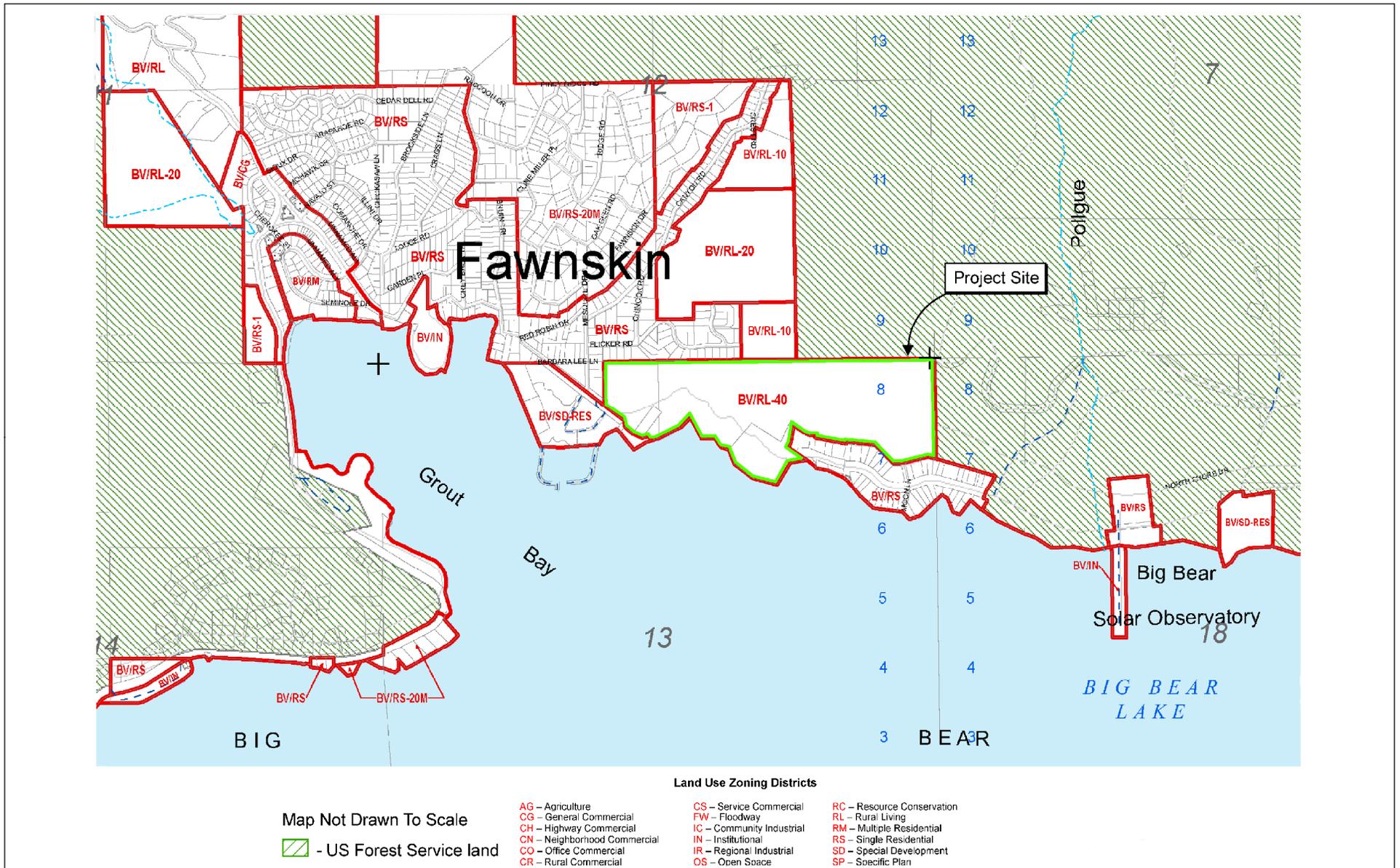
According to the Bear Valley Community Plan, a proposed project would have significant land use impacts if it would:

- 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).

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	45	60
	commercial retail, bank, restaurant	50	NA
	office building, research and development, professional offices	45	65
	amphitheater, concert hall, auditorium, movie theater	45	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 dBA¹. 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 less 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

2006 Without Proposed Alternative Project						2006 With Proposed Alternative Project					Difference in dBA at 100 Feet from Roadway
Roadway Segment	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).											

Year 2025 Traffic Conditions

Noise levels within the vicinity of the project area were modeled for with and without Proposed Alternative Project scenarios for 2025 traffic conditions to determine the location and extent of future vehicular generated noise conditions. Table 4.6-8 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 4.6-8, under the “2025 Without Proposed Alternative Project” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 33 to 64 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).

As shown in Table 4.6-8, under the “2025 With Proposed Alternative Project” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 33 to 64 dBA. Similar to the “2025 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.

Table 4.6-8 also compares noise levels under the “2025 Without Proposed Alternative Project” scenario with the “2025 With Proposed Alternative Project” scenario. Based on the information cited in Table 4.6-8, 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, Impacts and Mitigation Measures.

Table 4.6-8: Exterior Noise Exposure to Nearby Roadways, 2025

Roadway Segment	2025 Without Proposed Alternative Project					2025 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	5,890	58.10	17	37	79	6,557	58.57	18	40	85	0.47
East of Stanfield Cutoff	8,556	59.72	22	47	102	8,556	59.72	22	47	102	0.00
Stanfield Cutoff:											
North of N. Shore Dr.	155	33.16	0	1	2	155	33.16	0	1	2	0.00
N. Shore Dr. to Big Bear Blvd.	6,975	58.83	19	41	89	7,642	59.23	20	44	94	0.40
South of Big Bear Blvd.	2,790	50.09	5	11	23	2,790	50.09	5	11	23	0.00
Big Bear Boulevard:											
West of Stanfield Cutoff	25,420	63.80	45	98	211	25,687	63.85	46	98	212	0.05
East of Stanfield Cutoff	22,444	63.26	42	90	194	22,844	63.34	42	91	196	0.08
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 TIA (refer to Appendix 15.3, Traffic Data, from the 2005 Final EIR).											

Watercraft Noise

The Proposed Alternative Project includes the installation of a removable, floating dock with 55 boat slips on the north shore of Big Bear Lake. The 2005 Final EIR determined that 103 boat slips (as originally proposed), if multiplied by the weekend use factor of 9 percent, would add approximately nine boats per day to the daily average number of boats using the lake. All persons undertaking boating activities would be responsible for complying with rules and regulations established by the Big Bear Municipal Water District. Boating operation requirements that include speed limits, mooring and launching restrictions, and muffler requirements would serve to reduce noise impacts generated by watercraft activities. As previously stated, the Proposed Alternative Project would add fewer than nine boats to the average daily use of the Lake. Not only is this considered a nominal increase in daily boating numbers, adherence to the Water District's rules and regulations, and the Harbor and Navigational Code 654, would reduce noise impacts from watercrafts to a less than significant level. It is noted that during peak holiday and summer periods, the daily use of watercraft would significantly increase. However, compliance with the Water District's rules and regulations would reduce impacts to less than significant levels.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Operational Noise – Stationary Sources

Impact Analysis

Proposed Alternative Project operation would result in stationary noise source impacts on-site. These sources would include the typical residential noise sources and activities at the nearby marina and adjacent parking lot. The potential impacts from these sources were analyzed in terms of their proximity to the nearby off-site sensitive receptors.

Residential

Development of the residential lots adjacent to existing residences located to the north (along Flicker Road), west (along Canyon Road) and east (along SR-38) would result in new sources of stationary noise typical of any residential development. Residential noise sources include children playing, pet noise, amplified music, car repair, pool and spa equipment, woodworking and home repair. Noise typically associated with residential land uses does not exceed 60dBA and usually occurs during daytime hours from 7:00 a.m. to 10:00 p.m. In addition, all residents must comply with the noise standards set forth in the County Development Code, which states that exterior noise levels in residential property shall not exceed the basic noise standard of 55 dBA between the hours of

7:00 a.m. and 10:00 p.m. and shall not exceed 45 dBA between the hours of 10:00 p.m. and 7:00 a.m. (refer to Table 4.6-4). Thus, noise impacts from the residential uses are less than significant in this regard.

Marina Facilities

The Proposed Alternative Project includes the development of a marina on Big Bear Lake and an associated parking lot and boat launch. Proposed Alternative Project revisions include a floating, removable dock with 55 boat slips (down from 103 slips). Surface parking lots generate instantaneous noise from tire squeals, trash pick-up, delivery trucks, lot sweeping, door slamming, back-up alarms, and engine start-ups. Noise would primarily remain on-site and would be temporary (during peak events). Parking lot noise can also be considered a “stationary” noise source and may occur after 10 p.m. Typical noise levels generated by parking areas are an estimated 70 dBA at 50 feet during peak events (this is an “instantaneous” or peak noise level). Parking lot noise would also be partially masked by background noise from adjacent SR-38 and other roads and typical community noise sources. Based on the distance to the nearest existing residential areas from the proposed marina parking lot, noise levels would not exceed 55 dBA during the daytime or 45 dBA at nighttime. Therefore, typical parking lot noise generated at the Proposed Alternative Project site would be below both the daytime and nighttime noise standards at the nearest existing residential uses. Thus, noise impacts from the marina facilities are less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

4.7 - Public Services

This section presents a discussion of the existing and proposed public services available to serve the Proposed Alternative Project, which has been modified from the Original Proposed Project that was described in the 2005 Final Environmental Impact Report (EIR). Public services include police and fire protection, parks, schools, and libraries.

4.7.1 - Existing Conditions

Fire Services

The County of San Bernardino Fire Department provides fire protection and emergency service to the Fawnskin area. County Fire Station No. 49 is located at 39188 Rim of the World Drive, approximately 0.75 mile west of the site. Station 49 has two permanent personnel, one of whom is a paramedic, and approximately eight to ten volunteer fire fighters. Mutual aid agreements with the City of Big Bear Lake and Big Bear City Community Services District supplement service by providing first-response in the event that additional manpower and/or equipment is needed during a fire, emergency medical call, or in the event that the Big Bear Lake or Big Bear City stations could provide first alarm response with the closest available equipment.

The private Insurance Service Organization (ISO) research group rates fire danger on a scale of 1 to 10, depending on type of vegetation, structures, climate and availability of fire protection services. The Community of Fawnskin has an ISO rating of 9, with 1 representing the lowest threat and 10 the highest.

The project site is located within San Bernardino County Fire Safety Area 1 (FS1). Since the Proposed Alternative Project is located within a FS1 designated area, it is subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control. The requirements applicable to each fire safety area are found in the County's Development Code in Section 82.13.050 (General Development Standards), Section 82.13.060 (FS1, FS2, and FS3 Development Standards), and 82.13.070 (FS1 Additional Development Standards). The provisions for the FS1 District apply to all phases of the Proposed Alternative Project development.

Police Services

Police protection for the Community of Fawnskin is provided by the San Bernardino County Sheriff's Department. The Big Bear Sheriff's Station is located at 477 Summit Boulevard in the City of Big Bear Lake, approximately 6 miles east of the project area. The station also provides staffing for the contract law enforcement personnel for the City of Big Bear Lake (the County Sheriff is the City's Police Department under contract with the City) and houses a Type I jail. The department has nine patrol duties, 24-hour personnel coverage of unincorporated areas, one detective and support personnel. The Big Bear Sheriff's Station serves a population of approximately 16,000 in the

unincorporated San Bernardino County areas of Big Bear Valley. The average response time for emergency calls is plus or minus 6.97 minutes.

The mountain communities in the Valley have volunteer support of law enforcement through an active Search and Rescue team, Citizen's Patrol and Neighborhood Watch Programs.

School Services

Moon Camp is within the Bear Valley Unified School District (BVUSD). The BVUSD provides public education for grades Kindergarten through 12. School facilities serving the project site, along with their enrollment and capacity, are shown in Table 4.7-1. Although one of the schools is operating beyond capacity, enrollment is declining in the elementary and middle schools. Measure Q, a local bond for \$25 million to improve school facilities, recently passed. Measure Q includes projects to renovate existing facilities and to provide new classrooms to replace portable classrooms at North Shore Elementary, Big Bear Middle School and Big Bear High School. Big Bear High School has recently completed an expansion project and is no longer functioning over capacity. From 2006 to 2007, enrollment decreased at the elementary and middle school levels, yet increased for the high schools.

Table 4.7-1: Bear Valley School District Facilities

School	Grade Level	Maximum Capacity	2006 Enrollment	2007 Enrollment	Currently Impacted?
North Shore Elementary 765 N. Stanfield Cutoff	K-6	588	568	535	No
Big Bear Middle 41275 Big Bear Blvd.	7-8	408	534	436	Yes
Big Bear High ¹ 351 N. Maple Lane	9-12	ND	1,026	1,038	No
Chautauqua High ² (Alternative) 525 Maple Lane	9-12	ND	104	114	No
ND = data not available ¹ Recently expanded ² All portable buildings with ability to expand Source: BVSD, personal contact.					

Libraries

Big Bear Lake Branch Library serves the community from a 9,543- square-foot building located at 41930 Garstin Drive. It is one of 28 branch libraries in the County system and serves approximately 6,000 visitors per month. According to the San Bernardino County Library Facility Master Plan, the library needs to expand to 15,443 square feet. However, at present, there are no plans to expand.

Parks

The project site is located in the Community of Fawnskin. The Fawnskin area supports visitors and residents with the provisions of lodging, restaurants, boat docks, fishing, hiking, backpacking, off-roading, bicycling paths, campgrounds and picnic areas. Although the project site is privately owned and not formally in operation as public parkland, the site currently supports multiple recreational activities inline with the lakeside communities.

There are multiple recreational opportunities in the immediate vicinity. Big Bear Lake is considered a premier recreational and vacation resort area of southern California. The lake's waters are utilized by recreational boaters, as well as smaller recreational craft (jet skis, sailboats, kayaks, etc.), and fishing. Most of the recreational activities are privately owned and operated. However, the Big Bear Municipal Water District (MWD) has authority to regulate recreational activity on the lake's surface.

According to the Big Bear Municipal Water District Management Plan, dated August 3, 2000 (Revision), MWD has constructed two public boat launch ramps and improvements at the Stanfield Marsh that includes a parking, viewing location and boardwalk for public access. Additional public access to the lake is provided on property along the north shore, which is owned by the Forest Service. Also, there are 11 commercial marinas providing access to the lake. The MWD also owns and operates a recreational vehicle (RV) park adjacent to their administrative offices.

Recreational Bike Trail

The U.S. Forest Service (USFS) constructed the Alpine Pedal Path Bike Trail along the north shore of the Lake extending from Stanfield Cutoff, through the MWD East Boat Ramp, to the Solar Observatory, which is immediately to the east of the project site. Currently, the trail does not extend through the properties east of the project site, nor through the project site itself.

4.7.2 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on public services were derived from Appendix G of the California Environmental Quality Act (CEQA) guidelines. The Proposed Alternative Project would result in potentially significant impacts to public services if the following criteria are met:

- a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities.

4.7.3 - Project Impact Analysis

Fire Services

Wildfire is the primary safety issue in mountainous areas. Fire conditions in the San Bernardino National Forest are more dangerous than ever, according to the USFS (2006). The recent Butler II fire (September 2007) required the evacuation of the Fawnskin community for a short period. Many decades of fire suppression policy, which led to growth of the understory and bark beetle infestation, is partially to blame for this fire hazard. Implementation of the San Bernardino National Forest Plan (2006) for mechanical thinning of under-story trees and provision of fire-flow would reduce fire danger in the project area.

The project site is located adjacent to the National Forest Service on the north and east. The USFS requires a 100-foot firebreak for residential lots that are adjacent to USFS land. The Proposed Alternative Project is designed to include this 100-foot fuel modification zone adjacent to USFS land.

The project site is in a high fire hazard area and included in the County's Fire Hazard Overlay District (FS1). The FS1 Area "includes areas within the mountains and valley foothills. It includes all the land generally within the San Bernardino National Forest boundary and is characterized by areas with moderate and steep terrain and moderate to heavy fuel loading contributing to high fire hazard conditions."

Since the Proposed Alternative Project is located within a FS1 designated area, it is subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control. The requirements applicable to each fire safety area are found in the County's Development Code in Section 82.13.050 (General Development Standards), Section 82.13.060 (FS1, FS2, and FS3 Development Standards), and 82.13.070 (FS1 Additional Development Standards). The provisions for the FS1 District include, but are not limited to, fuel modification zones, set backs, emergency access, water supply (for fire flows), and apply to all phases of project development. For a complete list of applicable codes, see Appendix F, San Bernardino County Development Code, Fire Safety Overlay District.

Exhibit 2-5, in Section 2, *Project Description*, shows the required 100-foot fuel modification zone required for any development project that abuts USFS land. Ten of the residential lots are affected by this requirement and must abide by the Fuel Modification Plan required to be prepared for the Proposed Alternative Project. In addition, because the proposed residential lots would be sold as custom lots and would be developed as they are sold, fuel modification on individual lots may be required if a lot being developed is adjacent to other lots that have not been sold or remain undeveloped. Under this condition, Development Code Section 82.13.060(6) (B) would apply. This provision states in part that "when a development project is phased, individual phases may be required to provide temporary fuel modification areas, where the development perimeter of a phase is contiguous to a subsequent phase of a project, which in its undeveloped state is a hazardous fire area..."

The fuel modification zone adjacent to the USFS boundary and areas within the site that would be required to maintain temporary fuel modification areas will be maintained by the prospective homeowners of these specific lots. Each homeowner will be required to pay property taxes and development impact fees based on then-current rates. The project's increase in demand for fire protection services would be offset through project-related fees and taxes.

Regular thinning of these buffer zones would lessen the fire hazard. A potential loss of habitat could result from the removal of trees required for fire control. However, the County of San Bernardino requires under Chapter 88.01, Plant Protection and Management, of the Development Code 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. The Proposed Alternative Project would comply with this Plant Protection and Management Ordinance and the design standards specific for high fire areas.

Related to this issue, a Water Supply Feasibility Study (Appendix G) was prepared for the Proposed Alternative Project that addresses both domestic water supply and water supply for fire flow. As part of the permitting process, the Applicant must provide adequate domestic water supply as well as meet 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 requirements for emergency storage are equivalent to one day of maximum day demand. Fire-flow storage capacity would be equal to the fire-flow capacity of 1,750 gallons per minute (gpm) times its duration (2 hours). Fire-flow storage for 1,750 gpm (based on 120 minutes) is 210,000 gallons (see Section 4.9, Utilities, for this discussion). According to the Water Supply Feasibility Study, the Proposed Alternative Project would have sufficient water to meet these requirements. In addition, mitigation measures pertaining to fire protection are included to address the potential fuels- and fire-related impacts of the Proposed Alternative Project. Implementation of these mitigation measures will ensure that fire protection impacts of the Proposed Alternative Project are less than significant.

Emergency Evacuation

The project site is currently vacant; therefore, implementation of the Proposed Alternative Project would increase the demand for fire protection in the area and increase the probability of additional calls for service. The average household size in Big Bear Valley has been estimated to be 2.31 persons. Therefore, at full build-out of the 50 residential lots, the Fawnskin population has the potential to increase by approximately 116 persons, assuming that all residences are occupied full

time, that would require evacuation, in the event of an emergency (currently, Big Bear Valley experiences one third permanent occupancy and two thirds part time, vacation occupancy).

The project site is located adjacent to State Route 38 (SR-38), which serves as the evacuation route for the Fawnskin Community. At this location on SR-38, Fawnskin residents can evacuate the Community (at the direction of the County Sheriff) to the west by going directly west on SR-38 towards Big Bear Dam and then west on SR-18 to Running Springs and onward to San Bernardino and Interstate 210 (I-210). If the Fawnskin residents are directed to evacuate to the east, they travel on SR-38 to the east. As they pass through Big Bear City on SR-38, they can leave the Valley either to the northeast on State Highway 18 to Lucerne Valley, Victorville and I-15, or to the Southeast on SR-38 to Redlands and I-10. There are three two-lane State Highways providing access into and out of Big Bear Valley.

The County of San Bernardino has proactively worked to provide efficient emergency response and an emergency evacuation plan to protect residents and visitors to the Big Bear Valley. The efforts of the County include providing regulations for property owners to reduce the potential for wildfires, coordination with other jurisdictions in the Big Bear Valley to provide emergency response, and an emergency evacuation plan that includes notification of local media and a reverse 911 system.

The County has enacted several ordinances and regulations in order to proactively work to reduce emergency situations such as wildfires. These regulations include weed abatement requirements and property maintenance standards. Weed abatement requirements and property maintenance standards reduce the amount of fuel that is located adjacent to houses, reducing the risk to structures and humans from wildfire. In addition, fuel reduction of plants, trees, and shrubs along major roads (such as SR-38 and SR-18) has been an ongoing process in coordination with the USFS.

The San Bernardino County Operational Area Coordination Council (SBCOACC) consists of 24 cities and towns that meet on a quarterly basis to discuss emergency preparedness in San Bernardino County. The Council has access to resources from all members, including the County and City of Big Bear Lake. Member jurisdictions of the Council coordinate with one another to provide aid in the event of an emergency.

Other participants in interagency planning and cooperation include the USFS, Natural Resources Conservation Service (NRCS), CALFIRE, California Department of Transportation (Caltrans) California Highway Patrol (CHP), San Bernardino County Fire Department, San Bernardino County Roads, San Bernardino County Sheriff, Big Bear Lake Fire Department, Big Bear City Fire Department, and other local fire departments.

The County has adopted an Emergency Operations Plan for all types of disasters, including snowstorms, earthquakes, and fires. This Plan incorporates policies and procedures to care for full-time residents and visitors in a time of disaster. Depending upon the situation or disaster, citizens and

visitors would be instructed on the appropriate action to take. Instructions can be disseminated by a wide array of options. The San Bernardino County Telephone Emergency Notification System (TENS) provides for recorded messages to be sent to all standard telephones in the Big Bear Valley in a reverse 911 system. KBHR 93.3 FM radio and TV6, in addition to their normal emergency broadcasts, have agreed to participate in sending out messages. In addition, a siren system has been installed in the City of Big Bear Lake and can be utilized in the event of an emergency. Scan USA, which is a web-based emergency notification system, sends out locally generated messages by email, telephone, text messaging, and cell phone for individuals that sign up for the service.

With respect to an evacuation, the Emergency Operations Plan allows for conservative trigger points to be established when calling for voluntary and mandatory evacuations. The County has not released the Plan, as doing so could jeopardize security, and therefore the Plan cannot be attached as an Appendix to this Revised and Recirculated Draft EIR. However, the County has an approved evacuation plan, and it would be implemented in the event of an emergency.

The Big Bear Valley Mutual Aid Association provides public outreach to educate the public for preparedness in the event of an emergency. The County and City provide additional disaster education to residents of the Big Bear Valley through presentations at elementary and pre-schools for earthquake and fire preparedness, open houses at the fire station, press releases to the media, and active participation in community activities to provide awareness for residents. In addition, the County, City and Community Services District through Mountain Mutual Aid have conducted disaster drills, which included all local agencies, public service organizations and utilities.

In summary, the County has an approved Emergency Operations Plan, and strict development standards will be applied to the Proposed Alternative Project. The County and City Emergency Services Agencies have an Evacuation Plan for the Big Bear Valley that has been used successfully in the past and the addition of the 50-lot Proposed Alternative Project will not have a significant impact on the evacuation of Big Bear Valley. The Proposed Alternative Project is subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control, including regulations on fire flows. The Water Feasibility Study has determined that there is sufficient water available to meet the requirements for the FS1 Overlay District Overlay (Section 82.13.060 of the Development Code). In addition, the Proposed Alternative Project design includes adequate fuel modification zones that will reduce the risk of wildfire associated with the adjacent National Forest. Furthermore, the individual homeowners will be required to pay development impact fees, a portion of which are directed to fire protection services. Therefore, impacts to fire services and emergency evacuation will be less than significant, and no mitigation measures are recommended.

Police Services

As with any new residential development, implementation of the Proposed Alternative Project would increase police service calls to the vicinity beyond existing conditions. This would be a direct result

of the addition of 50 single-family residences and associated population. The average household size has been estimated to be 2.31 persons; therefore, at full build-out of the 50 residential lots, the Fawnskin population has the potential to increase by approximately 116 persons. This increase in population would incrementally increase the number of police service calls.

Anticipated police calls that may occur include increased burglar alarm calls, general criminal investigations, missing or lost persons, emergency medical calls, thefts of boats, and vandalism. Although there would be an incremental need for increased police service, it is not anticipated that Proposed Alternative Project implementation would require any new police facilities. Each homeowner will be required to pay property taxes and development impact fees based on then-current rates. The Proposed Alternative Project's increase in demand for police services would be offset through project related fees and taxes. Therefore, impacts to law enforcement services are expected to be less than significant, and no mitigation measures are proposed.

School Services

Development of the Proposed Alternative Project could generate an increased student population of approximately 11 students (based on 0.21 students per unit times 50 units) within the BVUSD. This is less than one student per grade. As noted in Table 4.7-1, the middle school is over capacity. All of the schools have augmented existing facilities with portable classrooms to accommodate overcrowding, and the local electorate recently passed Measure Q to build new classrooms and/or improve facilities at all of the BVUSD schools that could be affected by this Proposed Alternative Project. In addition, both the elementary and middle schools have experienced a decline in enrollment.

Currently, the BVUSD collects development impact fees from new development projects within the service district boundaries. The fees are determined by a Developer Justification Study commissioned by the District every 2 years. Each homeowner will be required to pay these development impact fees, regardless of whether or not they will have students in the BVUSD. Payment of these fees are considered full mitigation under the CEQA Guidelines. Therefore, the impacts to school services would be less than significant, and no mitigation is proposed.

Libraries

Big Bear Lake Branch Library serves the community from a 9,543-square-foot building located at 41930 Garstin Drive. It is one of 28 branch libraries in the County system and serves approximately 6,000 visitors per month. According to the San Bernardino County Library Facility Master Plan, the library needs to expand to 15,443 square feet. However, at present, there are no plans to expand.

The Proposed Alternative Project would add an additional 116 residents to the Fawnskin community, and these additional residents would place an incremental demand on public libraries primarily the Big Bear Lake Branch Library. The increase in population could necessitate a proportionate increase in staffing, resources, materials and library space. The demand for library services has decreased because of the internet (i.e., online publications). The current state average is 0.35 square feet of

library space per capita. However, the Division of Library Development Services of the State of California recommends up to 0.5 square feet of space per capita. The Big Bear Lake Branch Library is currently impacted and in need of expansion. According to the San Bernardino County Library Facility Master Plan, the library needs to expand to 15,443 square feet. However, at present, there are no plans to expand.

The individual homeowners will pay property taxes, of which a portion will go toward funding library services. The revenue from property taxes would offset the incremental cost of providing services to the project residents. Furthermore, modern technology (computers) has reduced the need for library services. The impacts to library services are expected to be less than significant and no mitigation is required.

Parks

The Proposed Alternative Project would add an additional 116 residents to the Fawnskin community, and these additional residents would place an incremental demand on public parks. With implementation of the Proposed Alternative Project, the existing unauthorized trails and dirt roads on site would be eliminated. However, these features are on private property and could be blocked from public use at any time. An area for Neighborhood Lake Access (Lot B) will be included in the development plan that will be accessible by foot and bicycle. In addition, the Applicant intends to dedicate a 66-foot-wide road easement for SR-38 that would accommodate an extension of the multipurpose trail that runs along the north shore of the lake. Furthermore, the mountain community has multiple recreational facilities, both public and private, and Big Bear Lake has multiple access points that will remain accessible to the general population.

Summary of Impacts

The Proposed Alternative Project will result in less than significant impacts on police services, schools, and libraries, because project-related fees and property taxes would offset the additional demand for police services, schools, and libraries. The project would have sufficient water to meet fire flow requirements and the County's Emergency Operations Plan would provide guidance in the event of an emergency evacuation. Furthermore, implementation of mitigation measures pertaining to fire protection would ensure that fuels- and fire-related impacts associated with the Proposed Alternative Project would be less than significant.

4.7.4 - Standard Conditions and Uniform Codes

Fire Services

The County requires that all land use proposals, including subdivisions, site plans, and use permits, be consistent with Uniform Fire Code and other site design requirements relative to fire safety such as water supply, fire hydrant number and location, etc. The project site is located within San Bernardino County Fire Safety Area 1 (FS1). Since the Proposed Alternative Project is located within a FS1 designated area, it is subject to compliance with various requirements relative to construction,

building separations, project design, and erosion and sediment control. The requirements applicable to each fire safety area are found in the County’s Development Code in Section 82.13.050 (General Development Standards), Section 82.13.060 (FS1, FS2, and FS3 Development Standards), and 82.13.070 (FS1 Additional Development Standards). The provisions for the FS1 District include fuel modification zones, and apply to all phases of project development. The individual homeowners will be required to pay development impact fees, a portion of which are directed to fire protection services.

Police Services

The individual homeowners will be required to pay development impact fees, a portion of which are directed to law enforcement services. In addition, the Police Department reviews development plans to make sure they provide “defensible space” (e.g., areas visible at night to patrolling officers, unit numbers readily visible, etc.).

School Services

The individual homeowners will be required to pay development impact fees to the BVUSD. These fees are considered full mitigation under CEQA Guidelines. Service levels and needs for additional staff or school facilities are determined by the CJUSD as development is proposed.

Libraries

Other than payment of property taxes, there are no Standard Conditions and Uniform Codes that pertain to library services.

Parks

There are no Standard Conditions and Uniform Codes that pertain to park services.

4.7.5 - Project Design Features

Fire Services

The Proposed Alternative Project would have two public access points (Street A and Street B) on the north side of SR-38 that connect to the residences, and one emergency access point at the easterly terminus of Street A. In addition, there are two points of access to the marina parking lot south of SR-38. From these access points, residents would follow the San Bernardino County emergency evacuation procedures for the Big Bear Valley, as discussed in the Emergency Evacuation section (above). Therefore, the Proposed Alternative Project will allow emergency vehicles unrestricted access to project site. The Proposed Alternative Project also has a water feasibility study and the Applicant must install a network of water mains and fire hydrants to protect the site, prior to development of any individual home sites. Residences and related structures will be constructed out of fire resistant materials as required by the County’s development code.

Police Services

The Proposed Alternative Project has a circulation master plan that provides emergency access, and that also incorporate principles of “defensible space.”

School Services

There are no design features of the Proposed Alternative Project that specifically address school services or facilities other than the payment of development impact fees, which are required of all new development.

Libraries

There are no design features of the Proposed Alternative Project that specifically address library services or facilities, other than the payment of development impact fees, which are required of all new development

Parks

The Proposed Alternative Project includes an area for Neighborhood Lake Access (Lot B) that will be accessible by foot and bicycle, a dock with 55 boat slips, and will provide a 66-foot-wide road easement for SR-38 that allows for the future extension of the Alpine Pedal Path Bike Trail.

4.7.6 - Mitigation Measures

The following mitigation measures pertaining to fire protection would apply to the Proposed Alternative Project.

Fire Protection

- PS-1** The fire flow requirement shall be 1750 gpm at 2 hours based on homes in the range of 3,600 to 4,800 square feet, and 2,000 gpm at 2 hours for homes greater than 4,800 square feet.
- PS-2** All residences less than 5,000 square feet shall be subject to the standard fire sprinkler requirement (NFPA 13D). Homes above 5,000 square feet shall be subject to the NFPA13R sprinkler requirement.
- PS-3** A Fuels Management Plan, with specifications, shall be prepared and subject to approval by the County of San Bernardino Fire Department and San Bernardino National Forest Service. The Fuels Management Plan shall implement the fire safety requirements of the FS1 Fire Safety Overlay District, including a 100-foot minimum setback requirement from the National Forest. The fuel modification zone shall be located entirely within the project boundaries. The minimum fuel modification zone requirements may be greater in steeper areas (up to 300 feet), as determined by the Fire Department.

PS-4 A Homeowner’s Association shall be established to implement the Fuels Management Plan. The Fuels Management Plan shall specify any professional assistance, if necessary, to implement the action portion of the Plan. The Plan shall determine if a Registered Professional Forester is necessary for professional guidance to implement the Plan. The HOA is to be responsible for fuel modification in common areas.

Police Protection

No mitigation measures are recommended.

Schools

No mitigation measures are recommended.

Libraries

No mitigation measures are recommended.

4.7.7 - Level of Significance after Mitigation

With the implementation of appropriate Development Code, design features, Emergency Operations Plan, Mitigation Measures and payment of development impact fees, the Proposed Alternative Project-related impacts on public services would be less than significant.

4.8 - Transportation, Circulation, and Parking

This report summarizes the Moon Camp Traffic Analysis (April 2007) and the Revised Traffic Study for the Moon Camp Project (June 2007), both of which were prepared by Urban Crossroads (Appendix E), to assess the potential impacts of the Moon Camp Proposed Alternative Project on the roadway system in the study area. The proposed development is generally located along North Shore Drive in the County of San Bernardino. The Proposed Alternative Project would include 50 new single-family detached dwelling units and seven lettered lots on approximately 62.43 acres.

In conformance with the requirements of the San Bernardino County Congestion Management Program (CMP), the Proposed Alternative Project does not require a CMP traffic study. The CMP requires no analysis for projects generating less than 250 peak hour trips. The Proposed Alternative Project would generate approximately 51 trips during the AM peak hour and 51 trips during the PM peak hours; which is fewer than the required threshold for a CMP traffic study. However, per discussion with County staff, the traffic study should follow CMP guidelines and a long-range traffic analysis is required.

Proposed Alternative Project Overview

The proposed Moon Camp residential development is generally located north of North Shore Drive, south of Flicker Road and east of Canyon Road in San Bernardino County. The Proposed Alternative Project would include 50 new single-family detached dwelling units and seven lettered lots, of which one would be designated as Pebble Plain Habitat and Open Space/Conservation (4.91 acres), one would be designated as Open Space/Neighborhood Lake Access (0.82 acre with 891 lineal feet of lakefront access), one would be developed as the marina parking lot with a boat ramp for a 55-slip private boat marina, three are the existing well sites, and one is a potential reservoir site. There are two (2) primary full access points to the Proposed Alternative Project site located off North Shore Drive.

Study Area

The overall study area evaluated in the TIA is presented in Exhibit 4.8-1. Based on discussions with County transportation staff, the study area includes the following existing study intersections:

Stanfield Cutoff (NS) at:

- North Shore Drive (SR-38) (EW)
- Big Bear Boulevard (SR-18) (EW)

North Shore Drive (SR-38) (NS) at:

- Big Bear Boulevard (SR-18) (EW)

Traffic Study Methodology

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with the San Bernardino County CMP.

The following analysis years are considered in this report:

- Existing Conditions – 2007.
- Interim Year – 2010.
- Long Range – 2030.

The overall methodologies used to develop future traffic volume forecasts, and the explicit traffic operations analysis methodologies are summarized herein and further discussed in the Traffic Impact Assessment (TIA).

Overall Analysis Methodology

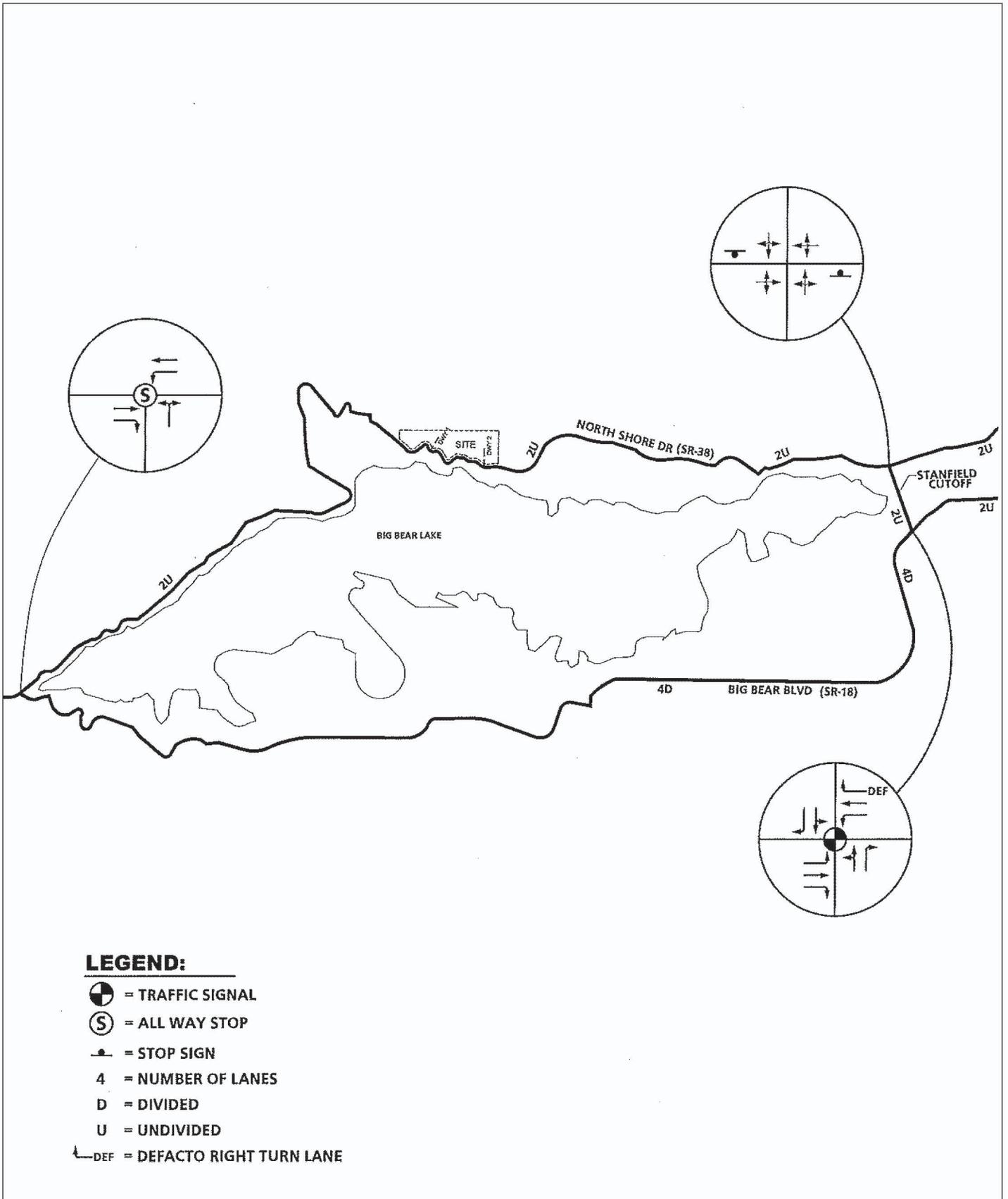
As stated previously, traffic conditions were evaluated for existing conditions, 2010 Interim Year Without Project conditions, 2010 Interim Year With Project conditions, and Long Range General Plan Buildout (2030) conditions.

Actual traffic count data was obtained from manual intersection counts (conducted in March 2007, refer to Appendix “A” of the TIA that is included in Appendix E of this Revised and Recirculated Draft EIR) to quantify existing traffic conditions. Per discussion with County staff, the peak season of the study area occurs during the summer months, thus a 16 percent growth is applied to manual intersection counts to represent existing peak hour intersection volumes.

Interim Year conditions have been estimated based on area-wide growth (other projects that are approved, pending, or under construction) and the addition of the Proposed Alternative Project related peak hour volumes. An area-wide growth of 2 percent per year is applied to adjusted existing volumes (with 16 percent growth).

The Interim Year 2010 without project traffic volumes are estimated based on the 2007 existing traffic volumes (with 16 percent adjustment) plus the 2007 to 2010 background growth volumes (2 percent) plus the known cumulative development volumes.

Project traffic volumes for all future conditions were estimated using the manual approach described in the CMP guidelines. The trip generation calculation is based on the most recent “Institute of Transportation Engineers Trip Generation Rates,” 7th Edition. The project trip distribution was developed from a select zone run of the “San Bernardino Mountain Model” and was reviewed by the County of San Bernardino staff. The project only traffic forecasts have been generated by applying the trip generation, distribution and traffic assignment calculations, as shown in Tables 4.8-1 and 4.8-2.



Source: URBAN CROSSROADS TIA, EXHIBIT 3-A, 2007.

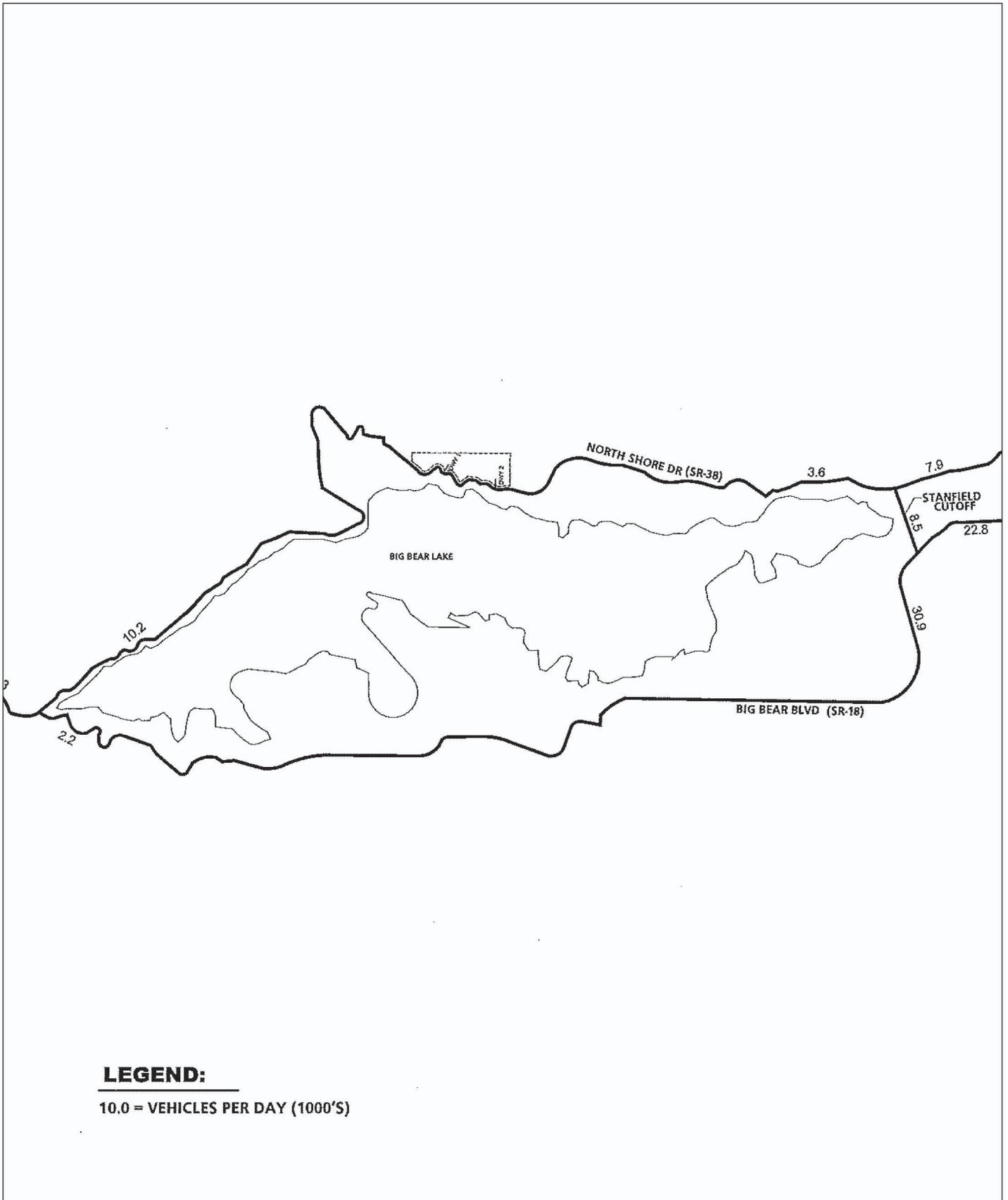


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Exhibit 4.8-1 Existing Through Lanes and Intersection Controls

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS TIA, EXHIBIT 3-B, 2007.

Table 4.8-1: Moon Camp Proposed Alternative Project Trip Generation Rates

Trip Rate/Land Use	AM Peak Hour			PM Peak Hour			Total Daily Trips
	In	Out	Total	In	Out	Total	
PROJECT – 50 DU							
Single Family Residential	0.64	0.37	1.01	0.64	0.37	1.01	9.57
CUMULATIVE PROJECTS							
Hotel	0.31	0.28	0.59	0.31	0.28	0.59	8.17
Townhomes / Condominiums	0.35	0.17	0.52	0.35	0.17	0.52	5.86
Fast Food with drive through	18.01	16.63	34.64	18.01	16.63	34.64	496.12
Shopping Center	6.57	7.12	13.70	6.57	7.12	13.70	152.03
Shopping Center	4.99	5.4	10.39	4.99	5.4	10.39	114.43
Automobile Care Center	1.69	1.69	3.38	1.69	1.69	3.38	20.00
Mini-warehouse	1.99	1.84	3.83	1.99	1.84	3.83	38.87
Office	0.17	0.83	1.00	0.17	0.83	1.00	11.01
Church	0.34	0.32	0.66	0.34	0.32	0.66	9.11
Source: Urban Crossroads (Moon Camp Traffic Analysis, County of San Bernardino, California, April 24, 2007).							

Long Range General Plan Buildout (2030) conditions have been estimated based on the San Bernardino Mountain Model and the addition of both the Proposed Alternative Project related peak hour volumes and the known cumulative development peak hour volumes per discussions with County staff.

Proposed Alternative Project traffic volumes for all future conditions were estimated using the manual approach. Trip generation has been estimated based on data collected by the Institute of Transportation Engineers (ITE). The Proposed Alternative Project trip distribution was derived from a select zone run of the San Bernardino Mountain Model.

Table 4.8-2: Summary of Moon Camp Proposed Alternative Project Trip Generation

Land Use	Quantity	Units	Friday Pm Peak Hour			Sunday Mid-Day Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Single Family Residential	50	DU	32	19	51	32	19	51	479

Traffic Operations Analysis

The current technical guide to the evaluation of traffic operations is the “2000 Highway Capacity Manual” (HCM) (Transportation Research Board Special Report 209). The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted. The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS “A” represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
- LOS “B” is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
- LOS “C” is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- LOS “D” represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- LOS “E” represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
- LOS “F” is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

Uninterrupted flow is generally found only on limited access (freeway) facilities in urban areas. The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control.

The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The LOS determined in this study are calculated using the HCM methodology.

For signalized intersections, average total delay per vehicle for the overall intersection is used to determine LOS. LOS at signalized study intersections have been evaluated using a HCM intersection analysis program.

The study area intersections which are stop sign controlled with stop-control on the minor street only have been analyzed using the two-way stop controlled unsignalized intersection analysis methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations to calculate average intersection delay; the level of service has been calculated. The LOS criteria for this type of intersection analysis is based on total delay per vehicle for the worst minor street movement(s)

The six qualitative categories of Level of Service, LOS (A through F), which are standard for California, have been defined for the project area along with the corresponding delay range as measured in seconds, as shown in Table 4.8-3. The peak weekday hours selected for this analysis are 7 to 9 AM (morning or AM peak) and 4 to 6 PM (afternoon or PM peak).

Table 4.8-3: Level of Service Definitions

Level of Service (LOS)	Description	Average Total Delay Per Vehicle (seconds)	
		Signalized	Unsignalized
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 – 10.00	0 - 10.00
B	Occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average total delay.	10.01 - 20.00	10.01 - 15.00
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level, although many still pass through the intersection without stopping.	20.01 - 35.00	15.01 - 25.00
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 - 55.00	25.01 - 35.00
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 - 80.00	35.01 - 50.00

Table 4.8 3 (cont.): Level of Service Definitions

Level of Service (LOS)	Description	Average Total Delay Per Vehicle (seconds)	
		Signalized	Unsignalized
F	Considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrive flow rates exceed the capacity of the intersection). It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up
Source: Highway Capacity Manual, 2000.			

Definition of Deficiency

County of San Bernardino guidelines indicate that peak hour intersection operations of LOS “C” or better are considered acceptable. Therefore, any intersection operating at LOS “D” or worse is considered deficient. Per CMP direction, state controlled facilities (state highways, freeway ramp intersection, etc.) are subject to local jurisdiction (California Department of Transportation) traffic operations requirements, with no greater than 45 seconds average stopped delay per vehicle allowed during peak hour operations (middle of LOS “D”).

The identification of a CMP deficiency requires further analysis in satisfaction of CMP and County requirements, including:

- Evaluation of the mitigation measures required to restore traffic operations to an acceptable level of service with respect to CMP and local jurisdiction LOS standards.
- Calculation of the Proposed Alternative Project share of new traffic on the impacted CMP facility during peak hours of traffic.
- Estimation of the cost required to implement the improvements required to restore traffic operations to an acceptable level of service as described above.

Definition of a Significant Impact

The identification of significant impacts is a requirement of California Environmental Quality Act (CEQA) and is not directly addressed in the CMP document. The County of San Bernardino General Plan and Circulation Element have been adopted in accordance with CEQA requirements, and any roadway improvements within the County of San Bernardino which are consistent with these documents are not considered a significant impact, so long as the Proposed Alternative Project contributes its “fair share” funding for improvements.

A traffic impact is considered significant and immitigable if a project both:

- i) Contributes measurable to traffic; and
- ii) Substantially and adversely changes the LOS at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the County of San Bernardino General Plan cannot be constructed.

4.8.1 - Existing Conditions

This section summarizes existing roadway and traffic conditions in the study area. All analysis locations which exist today have been analyzed. The number of through travel lanes for existing roadways and intersection controls are presented, along with existing traffic count data collected for this study. This data was used to analyze existing traffic operations in the study area. Existing plans for roadway improvements are also described in this section.

Existing Roadway System and Daily Traffic Volumes

The number of through travel lanes for existing roadways and existing intersection controls within the study area are presented in Exhibit 4.8-1.

Exhibits 4.8-2 and 4.8-3 depict the current average daily traffic (ADT) volumes in the study area on Friday and Sunday, respectively. Existing ADT volumes are estimated based upon the latest traffic data collected by Urban Crossroads, Inc. (refer to E of this Revised and Recirculated Draft EIR). Peak hour data has been used to estimate the average daily traffic volumes on each leg using the following formula:

- Peak Hour (Approach Volume + Exit Volume) x 12 = Leg Volume.
- Regional access to the site is provided by North Shore Drive (SR-38)

Existing Peak Hour Traffic Volumes

Actual traffic count data was obtained from manual intersection counts (March 2007, see Appendix E) to quantify existing traffic conditions. The Friday PM peak hour traffic volumes were determined by counting the two hour period between 4:00 PM- 6:00 PM in the evening. The Sunday mid-day peak hour traffic volumes were identified by counting the two hour period from 12:00 PM – 2:00 PM. Per discussions with County staff, since the peak season of the study area occurs during the summer months, a 16 percent growth is applied to the manual intersection counts to represent existing peak hour intersection volumes.

Existing intersection level of service calculations are based upon the adjusted manual Friday PM and Sunday mid-day peak hour turning movement counts, as shown in Exhibits 4.8-4 and 4.8-5.

Based on the traffic study data, the LOS and estimated delay times at the local area intersections for both the morning (AM) and afternoon (PM) peak hours are currently below the standards (refer to Appendix E).

Existing Traffic Operations

Existing peak hour traffic operations have been evaluated for both the Friday PM and Sunday mid-day peak hours of traffic throughout the study area. The results of this analysis are summarized in Table 4.8-4, along with geometrics and control devices at each analysis location. As indicated in Table 4.8-4, the following study area intersections are currently operating at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

The operations analysis worksheets for existing conditions are included in Appendix “B” of the TIA.

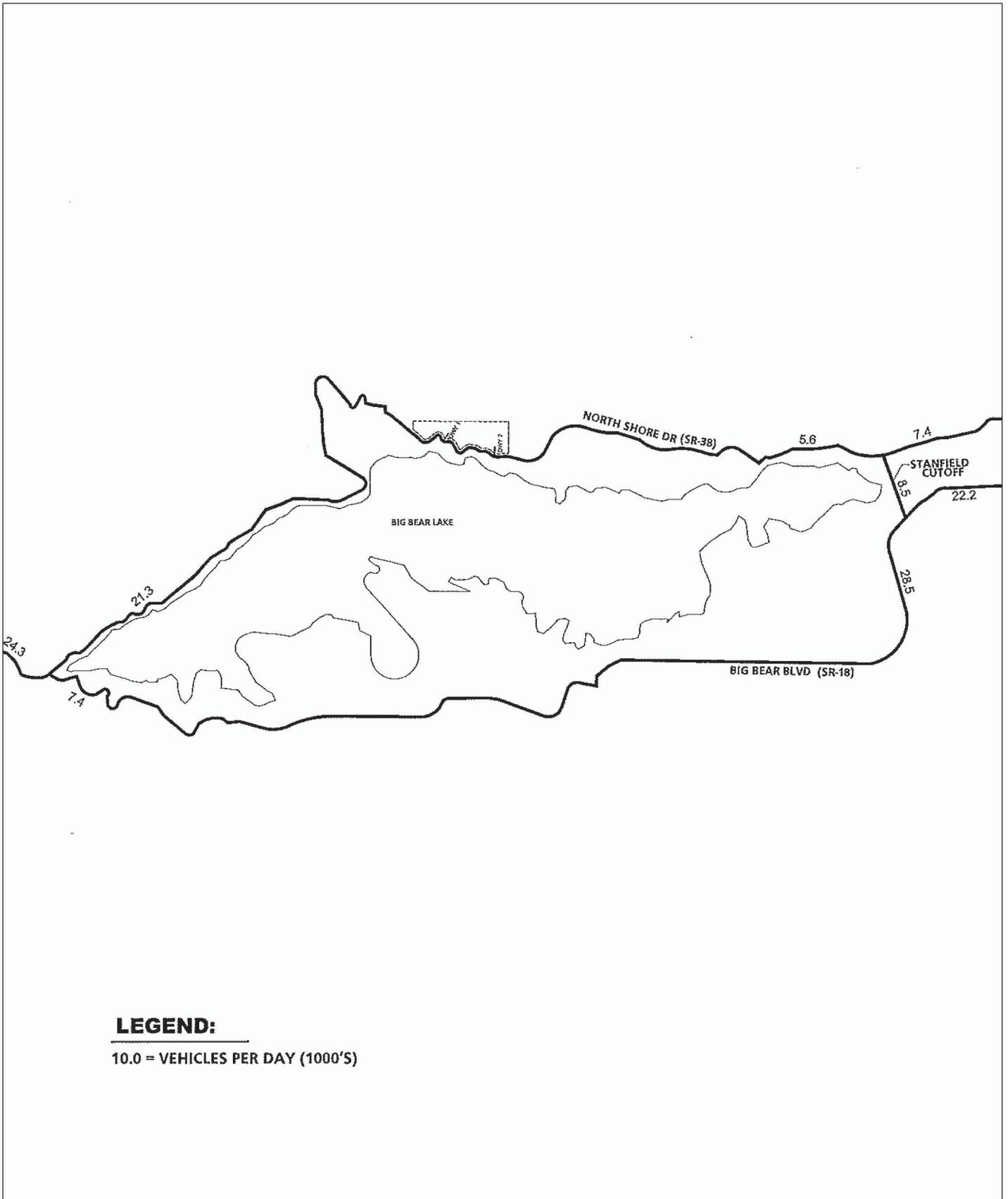
Traffic signal warrant analysis (included in Appendix “D” of the TIA) has been conducted for existing conditions and traffic signals are currently warranted at the following study area intersections:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)



Source: URBAN CROSSROADS TIA, EXHIBIT 3-C, 2007.

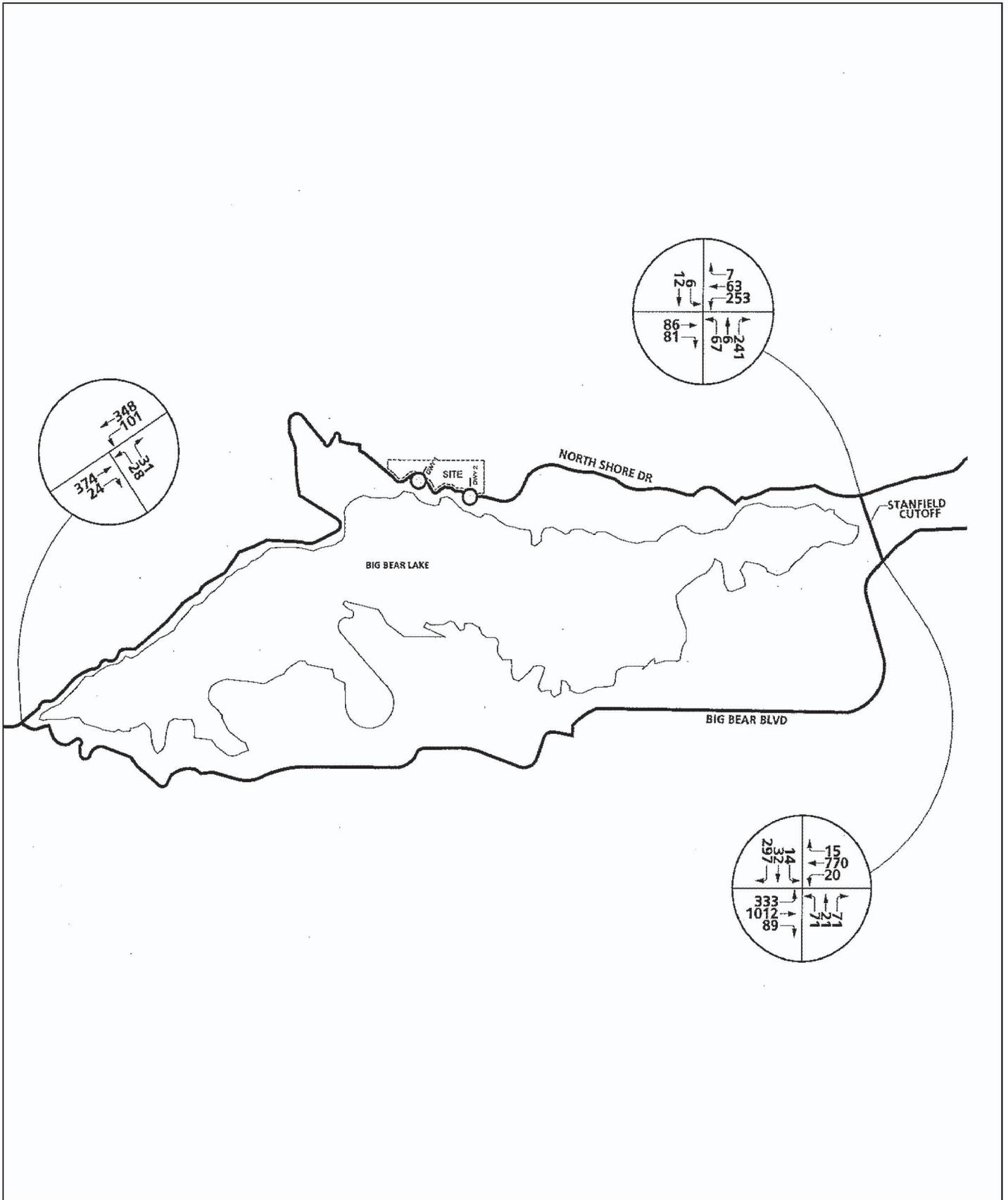


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Exhibit 4.8-3 Existing Sunday Average Daily Traffic (ADT)

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS TIA, EXHIBIT 3-D, 2007.

Exhibit 4.8-4 Existing Friday PM Peak Hour Intersection Volumes



Source: URBAN CROSSROADS TIA, EXHIBIT 3-E, 2007.

Table 4.8-4: Local Intersection Conditions

Intersection	Traffic Control*	Seconds of Delay		Level of Service	
		Friday PM	Sunday MD	Friday PM Peak	Sunday MD Peak
North Shore Dr. (SR-38) at: Big Bear Blvd.(SR-18)(EW)	CSS	22.5	—	C	F
Stanfield Cutoff (NS) at: North Shore Dr. (SR-38)(EW)	CSS	25.5	34.5	D	D
Stanfield Cutoff (NS) at: Big Bear Blvd. (SR-18)(EW)	TS	—	81.1	F	F
TS = Traffic Signal; CSS = Cross Street Stop; MD = mid-day -- = Delay High, Intersection Unstable, Level of Service "F"					
Source: Urban Crossroads (Moon Camp Traffic Analysis, County of San Bernardino, California, 2007).					

Parking

There is currently no parking provided within the project site, as it is unimproved except for State Route 38 (SR-38).

Mass Transit and Railroad Service

There is currently no mass transit or rail service provided within the project site, as it is unimproved except for SR-38.

Scoping Meeting Comments

The following public comments regarding traffic were provided during the March 31, 2007, scoping meeting:

Discuss emergency access to the property. Emergency access to the property would be via Northshore Drive (SR-38) from the east or west. Interior circulation roads would provide access to all parts of the Proposed Alternative Project. Since there are no residences proposed along SR-38, emergency access through the property would be unencumbered.

Address emergency evacuation plan for the site and how it will integrate with the existing plan for the community. Emergency evacuation would occur via SR-38 and would be consistent with the existing plan for the community.

Will/Can the 80 foot easement along the existing Highway be used for a trail? Can it be used as a designated Class II bikeway? See recommended Proposed Alternative Project Design Features for Traffic in this Section.

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. Traffic impacts and recommended improvements both on and off site are discussed in this Section.

Will bikeway go through the existing neighborhood? The Proposed Alternative Project would provide the right-of-way that would allow a bikeway to follow Northshore Drive (SR-38).

The following criteria for establishing the significance of potential impacts on transportation and circulation were derived from Appendix G of the CEQA Guidelines. A significant impact would occur if the Proposed Alternative Project would:

- a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).
- b) Exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.
- c) Result in a change in traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment).
- e) Result in inadequate emergency access.
- f) Result in inadequate parking capacity.
- g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

4.8.2 - Project Impact Analysis

The following paragraphs describe the development of the future year traffic volume forecasts and present the resulting daily traffic volumes which were used for traffic operations analysis. Future traffic conditions without the Proposed Alternative Project are presented first, followed by the future with Proposed Alternative Project traffic volumes. Traffic signal warrant analysis for future conditions has also been presented in this section.

Based on discussions with County staff, the areawide growth was interpolated from adjusted existing volumes (with 16 percent growth) to General Plan Buildout (2030) volumes. The area-wide growth varies for each movement at each intersection (see Appendix “D” of the TIA). The interpolated area-wide growth rate was added to peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the Proposed Alternative Project and other development.

Long Range General Plan Buildout (2030) conditions were estimated based on a select zone run of the San Bernardino Mountain Model, in addition to traffic generated by the Proposed Alternative Project and the known cumulative development.

The County of San Bernardino was contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on information given by the County of San Bernardino and City of Big Bear staff, a total of 17 cumulative projects were identified that could affect the study intersections. The location of each of these other developments is shown in Exhibits 4.8-6 and 4.8-7A (Exhibit 4-A of the TIA).

As indicated in Table 4.8-3, other developments are projected to generate 15,111 trip-ends per day with 1,455 vehicles per hour during the AM peak hour and 1,455 vehicles per hour during the PM peak hour. Based on the identified trip distribution for the other development on arterial highways throughout the study area, other development ADT and Friday PM/Sunday mid-day peak hour intersection turning movement volumes (based on PM peak hour trip generation) are shown on Exhibits 4.8-7A and 4.8-7B (Exhibits 4-B and 4-C of the TIA), respectively.

**Table 4.8-5: Friday PM Peak Hours/Sunday Mid-day Peak Hour
Other Development Trip Generation**

Id #	Project Name	Land Use	Quantity	Units	Peak Hour						
					Friday PM			Sunday Mid-day			Daily
					In	Out	Total	In	Out	Total	
San Bernardino County											
1	TT 16771	SFR	242	DU	155	90	245	155	90	245	2,316
2	TT 16934	SFR	228	DU	146	84	230	146	84	230	2,182
3	TT 17217 & TT17022	SFR	53	DU	34	20	54	34	20	54	607
4	TT 16036	SFR	116	DU	74	43	117	74	43	117	1,110
5	TT 14916	SFR	51	DU	33	19	52	33	19	52	488
6	TT 16980	SFR	15	DU	10	6	16	10	6	16	144
7	TT 1776H	SFR	10	DU	6	4	10	6	4	10	98
8	TT 16749	SFR	86	DU	55	32	87	55	32	87	823
9	TT 17201	SFR	66	DU	42	24	66	42	24	66	632
	TOTAL (CO. OF SAN BERNARDINO)				556	322	877	555	322	877	8,298
CITY OF BIG BEAR											
10	Hilton Garden Inn	Hotel	91	Rooms	28	25	63	28	25	53	743

**Table 4.8 5 (cont.): Friday PM Peak Hours/Sunday Midday Peak Hour
Other Development Trip Generation**

Id #	Project Name	Land Use	Quantity	Units	Peak Hour							
					Friday PM			Sunday Mid-day			Daily	
					In	Out	Total	In	Out	Total		
11	Mixed Use Development	Retail	22.5	TSF	112	122	234	112	122	234	2,575	
		Less pass-by (15%)				-17	-16	-35	-17	-18	-35	-386
		Subtotal Commercial				95	104	199	95	104	199	2,189
		Office	6.3	TSF	1	5	6	1	5	6	69	
		SFR	10	DU4	6	4	10	6	4	106	96	
Subtotal					102	113	215	102	113	215	2,354	
12	Residential Lots	SFR	8	DU	5	3	8	5	3	8	77	
13	Condominiums	MFDU	78	DU	27	13	40	27	13	40	457	
14	41820 Big Bear Blvd.	Hotel	55	Rooms	17	15	32	17	15	32	449	
		Retail	10	TSF	66	71	137	66	71	137	1,620	
		Fast-food	2.5	TSF	45	42	87	45	42	87	1,240	
		Less Pass-by (15%)				-17	-17	-34	-17	-17	-34	-414
		Subtotal Commercial				94	98	190	94	96	190	2,346
Subtotal					111	111	222	111	111	222	2,795	
15	World Harvest Faith Center	Church	20	TSF	7	6	13	7	6	13	182	
16	Boat Parts Retail & Service	Auto Care Center	4,375	TSF	7	7	14	7	7	14	88	
17	Storage Yard	Mini Warehouse	3	AC	6	6	12	6	6	12	117	
Total (City of Big Bear)					294	284	576	294	284	578	6,813	
TOTAL					849	606	1,455	849	606	1,455	15,111	

SFR = Single Family Residence, DU = Dwelling Unit, TSF = Thousand Sq. Feet, AC = Acres

Short-Term Impacts (Year 2010)

The ADT at key intersections for 2010 Without Project traffic conditions have been determined by adding the 2007 existing traffic volumes (with 16 percent adjustment) plus the two percent background growth volumes per year (6 percent for three years) plus the known cumulative development volumes. The 2010 Friday ADT and Sunday ADT volumes for without project traffic conditions are shown in Exhibits 4.8-8A and 4.8-8B (4-D and 4-E in the TIA).

2010 Without Project Conditions

For 2010 Without Project traffic conditions, no new traffic signals are projected to be warranted compared to Existing Conditions. Without improvements, the same intersections continue to operate at an unacceptable level of service. With traffic signals, the level of service would improve to acceptable levels.

Table 4.8-6: Intersection Analysis for 2010 Without Project Conditions

Intersection	Traffic Control	Delay in Seconds		Level of Service	
		Friday PM	Sunday MD	Friday PM	Sunday MD
Northshore Drive (SR-38) at Big Bear Blvd (SR-18)					
Without Improvements	CSS	—	—	F	F
With Improvements	TS	14.0	21.2	B	C
Standfield Cutoff at Northshore Drive:					
Without Improvements	CSS			F	F
With Improvements	TS	31.9	30.7	C	C
Stanfield Cutoff at Big Bear Blvd. (SR-18)					
Without Improvements	TS	—	—	F	F
With Improvements	TS	31.4	26.8	C	C
CSS = Cross Street Stop, TS = Traffic Signal, MD = mid-day -- = Delay High, Intersection Unstable, F LOS					

2010 With Project Conditions

The ADT for the 2010 With Project was determined by adding the Proposed Alternative Project-only traffic volumes to the 2010 Without Project traffic volumes. The 2010 Friday and Sunday ADT volumes with Proposed Alternative Project traffic are shown on Exhibit 4.8-8A and 4.8-8B (Exhibits: 4-F and 4-G of TIA), respectively.

For 2010 With Project traffic conditions, no new traffic signals are projected to be warranted as compared to 2010 Without Project conditions.

The intersection operations analysis for 2010 With Project traffic conditions are summarized in Table 4.8-7, based on the geometrics analysis at the study area intersections, without and with improvements. 2010 Without Project Friday PM and Sunday mid-day peak hour intersection turning movement volumes are shown on Exhibits 4.8-9A and 4.8-9B (Exhibits:5-A and 5-B of TIA) , respectively. As shown in Table 4.8-7, the following study area intersections are currently operating at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

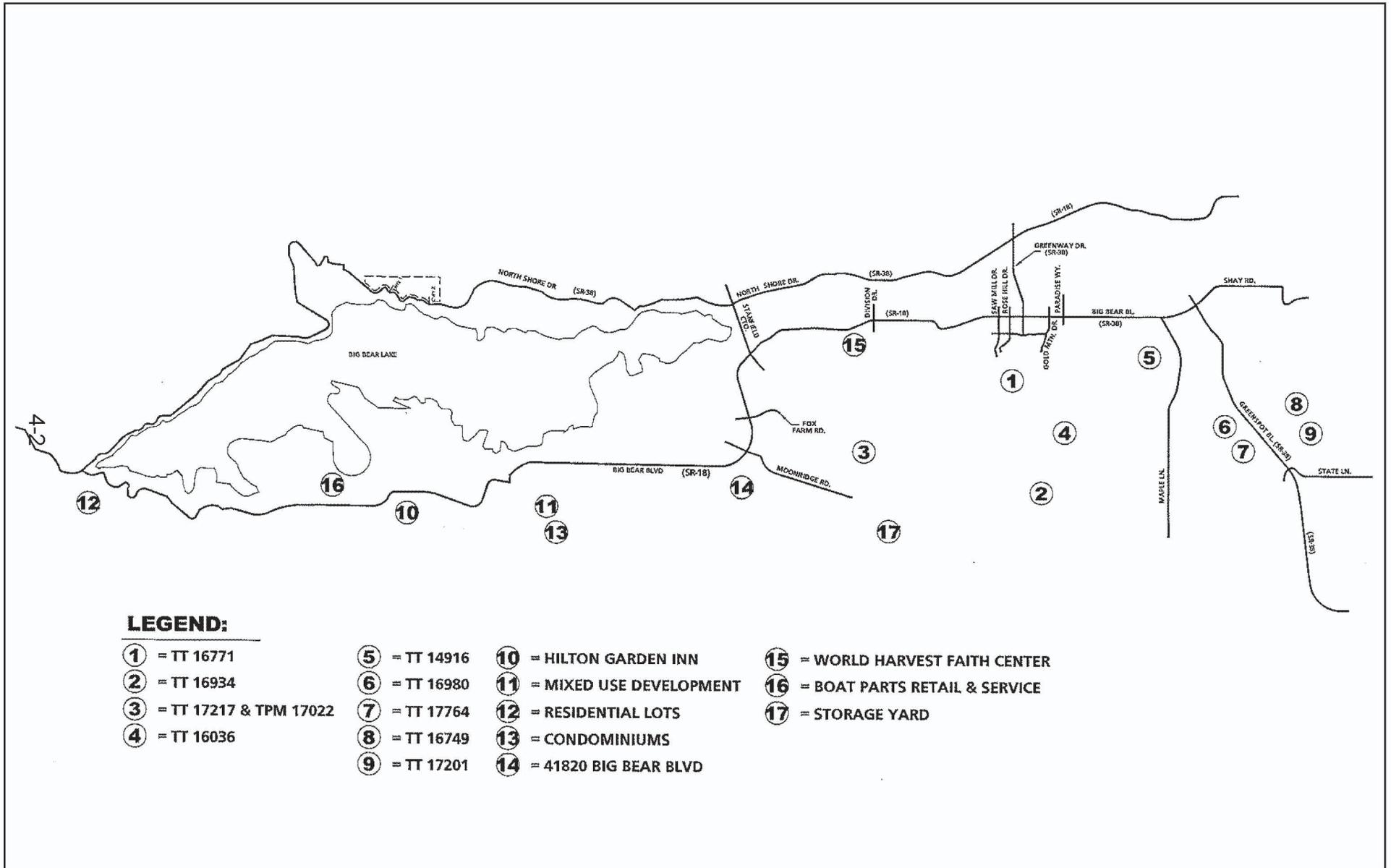
Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

As shown in Table 4.8-7, these intersections will continue to operate at unacceptable levels without improvements, but will improve to acceptable levels with the addition of traffic signals with no significant impact due to this Proposed Alternative Project. Driveway or street intersections within the Proposed Alternative Project are projected to operate at acceptable levels without traffic signals.

Table 4.8-7: Intersection Analysis for 2010 With Project Conditions

Intersection	Traffic Control	Delay in Seconds		Level of Service	
		Friday PM	Sunday MD	Friday Pm	Sunday MD
Northshore Drive (SR-38)(NS) at Big Bear Blvd. (SR 18) (EW)					
Without Improvements		—	—	F	F
With Improvements		14.0	22.1	B	C
Stanfield Cutoff (NS) at Northshore DR. (SR-38)(EW)					
Without improvements	CSS	—	—	F	F
With Improvements	TS	32.4	31.5	C	C
Stanfield Cutoff at Big Bear Blvd (SR 18) (EW)					
Without Improvments	CSS	—	—	F	F
With Improvements	TS	32.5	276	C	C
Driveway # 1 at Northshore Drive	CSS	11.1	12.0	B	B
Driveway # 2 at Northshore Drive	CSS	11.2	12.1	B	B
CSS = Cross Street Stop, TS = Traffic Signal, MD = mid-day -- = Delay High, Intersection Unstable, F LOS					



Source: URBAN CROSSROADS TIA, EXHIBIT 4-A, 2007.

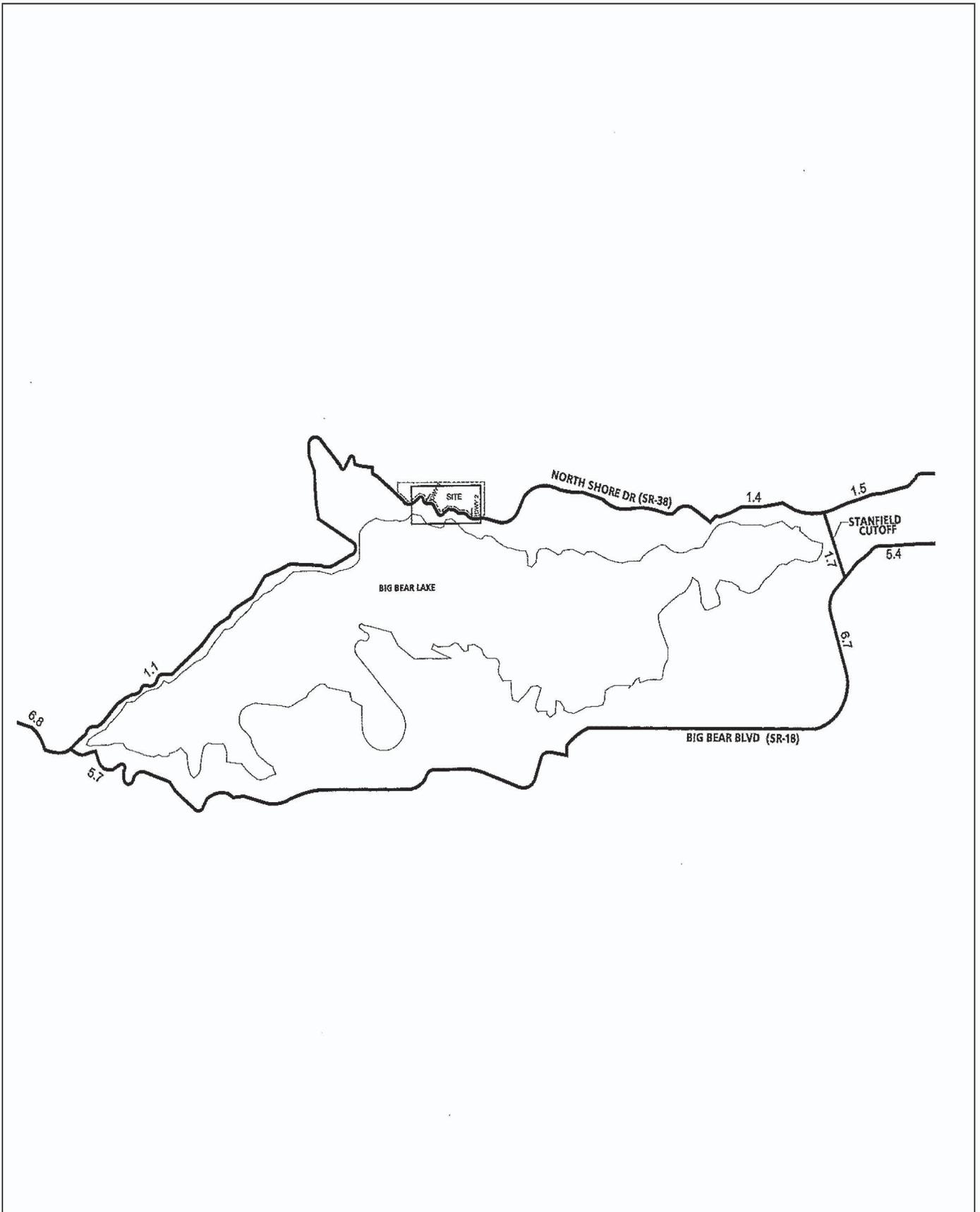


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Exhibit 4.8-6 Other Development Location Map

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Source: URBAN CROSSROADS TIA, EXHIBIT 4-B, 2007.

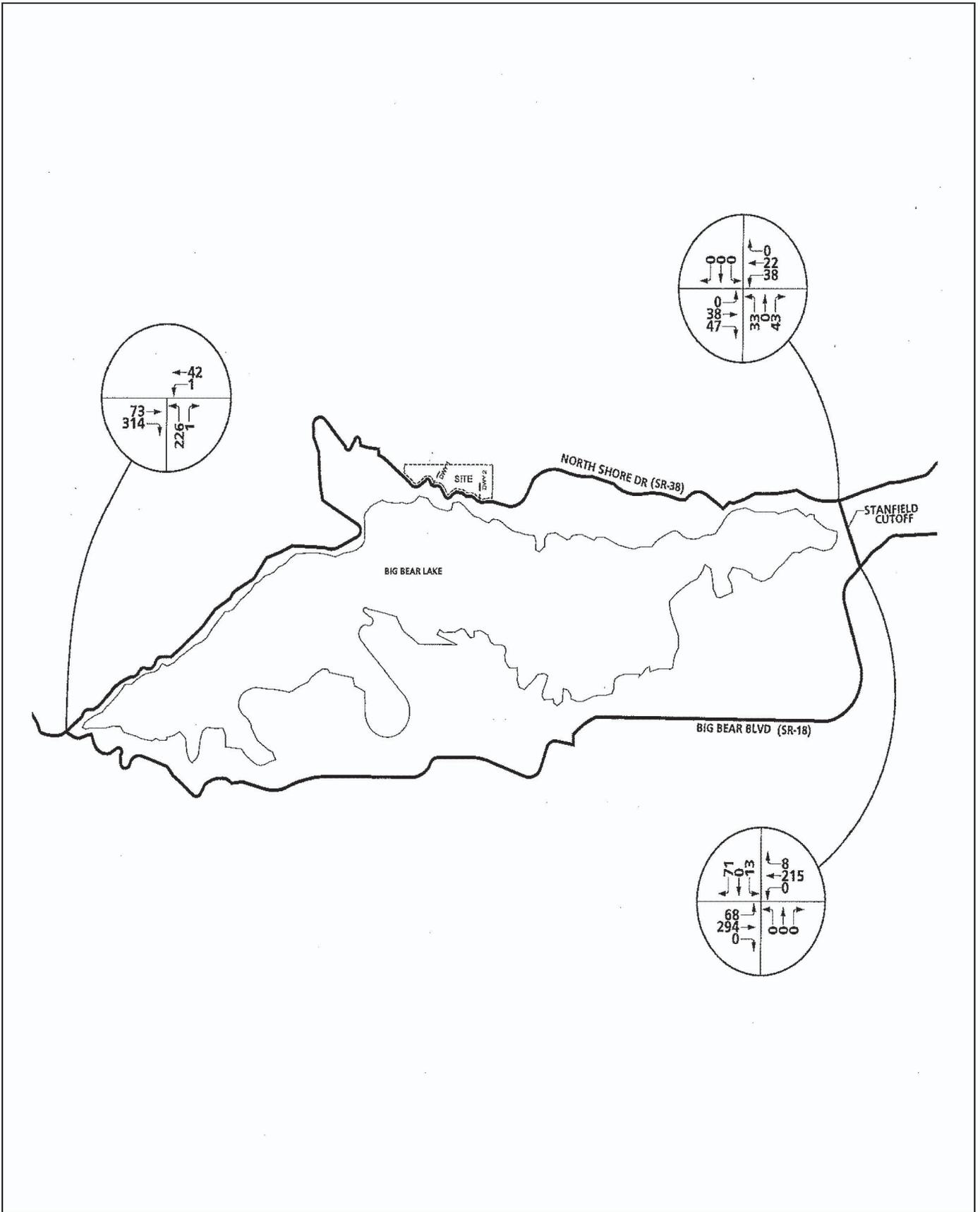


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Exhibit 4.8-7A Other Development Average Daily Traffic (ADT)

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Source: URBAN CROSSROADS TIA, EXHIBIT 4-C, 2007.



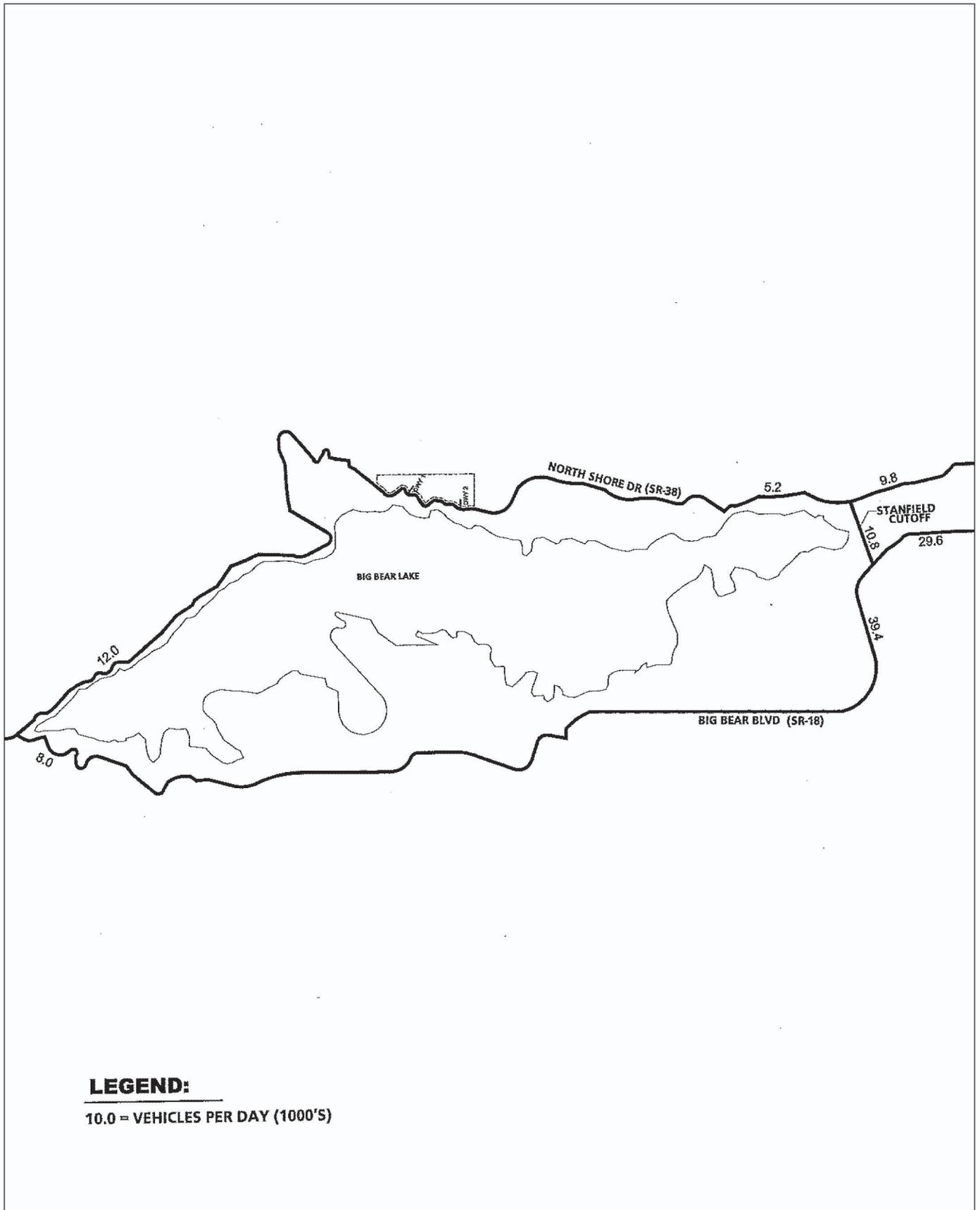
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Exhibit 4.8-7B

Other Development Friday PM Peak Hour Sunday Mid-Day Peak Hour Intersection Volume

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS TIA, EXHIBIT 4-D, 2007.

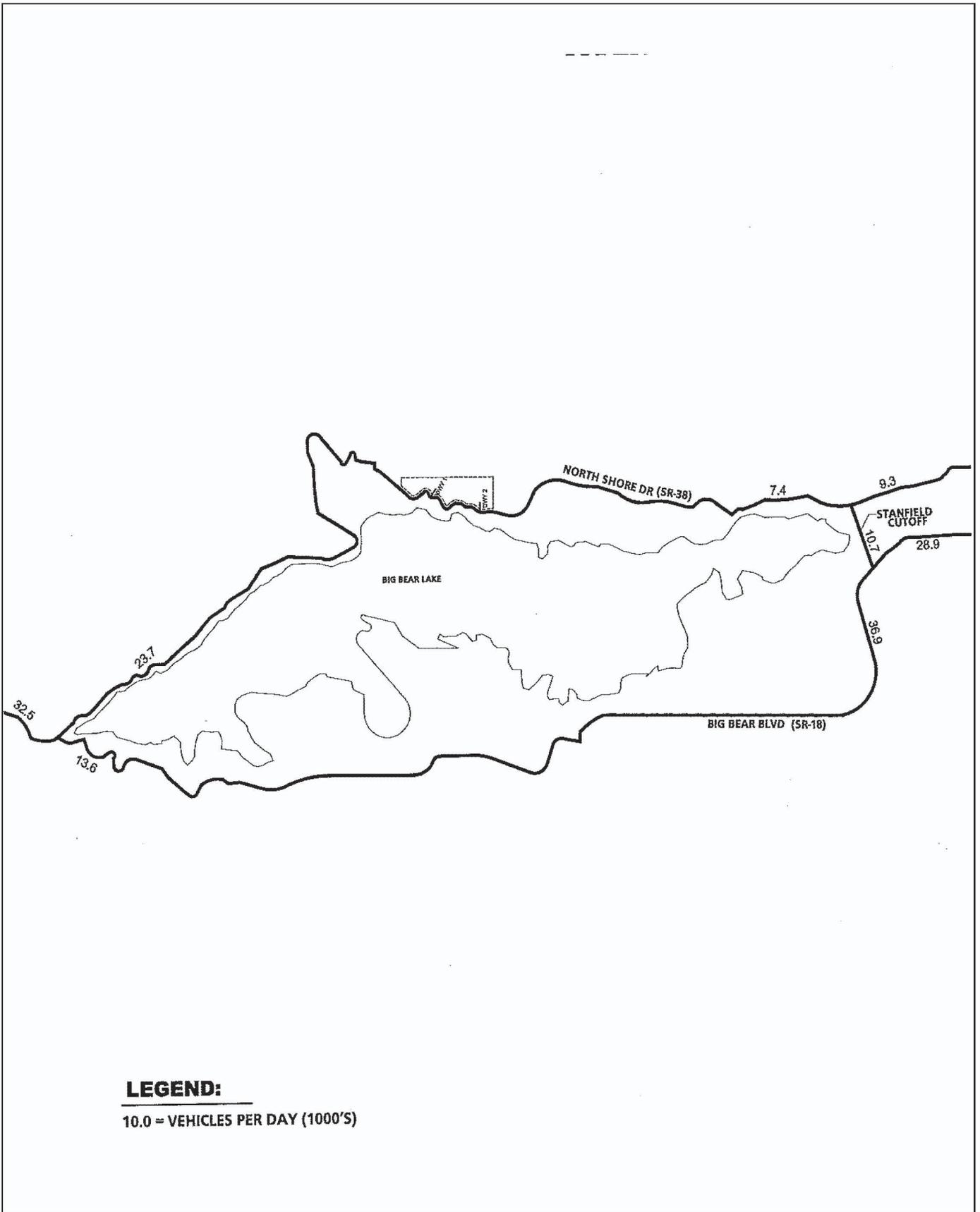


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Exhibit 4.8-8A 2010 Without Project Friday Average Daily Traffic (ADT)

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Source: URBAN CROSSROADS TIA, EXHIBIT 4-E, 2007.

Long-Term Impacts (2030)

Long Range conditions were based on a General Plan Buildout (2030) that was estimated by adding the Proposed Alternative Project peak traffic and the known cumulative development peak traffic volumes to the San Bernardino Mountain Model. The intersection operations analysis for General Plan Buildout With Project (2030) traffic conditions are summarized in Table 4.8-8, based on the geometrics analysis at the study area intersections, without and with improvements. General Plan Buildout With Project (2030) Friday PM and Sunday mid-day peak hour intersection turning movement volumes are shown on Exhibits 4.8-10 A and 4.8-10B (Exhibits 5-E and 5-F of the TIA), respectively. The General Plan Buildout post-processed volumes worksheets are provided in Appendix “G” to the TIA. As shown in Table 4.8-8, without improvements, the following study area intersections would operate at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

Driveway #1 (NS) at:

- North Shore Drive (SR-38) (EW)

Driveway #2 (NS) at:

- North Shore Drive (SR-38) (EW)

Table 4.8-8: Intersection Analysis for General Plan Buildout (2030) Conditions

Intersection	Traffic Control	Intersection Approach Lanes				Delay (Secs.)		Level of Service	
		North-bound	South-bound	East-bound	West-bound	Fri. PM	Sun. MD	Fri. PM	Sun. MD
		L T R	L T R	L T R	L T R				
Northshore Dr. (SR-38)(NS) at Big Bear Blvd									

Table 4.8 8 (cont.): Intersection Analysis for General Plan Buildout (2030) Conditions

Intersection	Traffic Control	Intersection Approach Lanes				Delay (Secs.)		Level of Service	
		North-bound	South-bound	East-bound	West-bound	Fri. PM	Sun. MD	Fri. PM	Sun. MD
		L T R	L T R	L T R	L T R				
Without improvements	CSS	0 1 0	0 0 0	0 1 1	1 1 0	— ¹	— ¹	F	F
With improvements	TS	1 0 1	0 0 0	0 2 1>	1 1 0	20.4	18.6	C	B
Stanfield Cutoff (NS) at Northshore Dr. (SR38) (EW)									
Without improvements	CSS	0 1 0	0 1 0	0 1 0	0 1 0	-- ¹	-- ¹	F	F
With improvements	TS	2 1 0	1 1 0	1 1 1>	1 1 0	34.2	26.0	C	C
Stanfield Cutoff (NS) at Big Bear Blvd (SR 16) (EW)									
Without improvements	TS	0 1 1	0 1 1	1 1 1	1 1 1	— ¹	— ¹	F	F
With improvements	TS	1 1 0	1 1 1>	1 2 0	1 2 1	31.7	21.5	C	C
Driveway #1 (NS) at Northshore Dr. (EW)									
Without improvements	CSS	0 0 0	0 1 0	0 1 0	0 1 0	49.6	24.2	E	C
With improvements	CSS	0 0 0	0 1 0	0 2 0	0 1 0	23.1	15.7	C	C
Driveway # 2 (NS) at Northshore Dr. (EW)									
Without improvements	CSS	0 0 0	0 1 0	0 1 0	0 1 0	41.9	18.8	E	C
With improvements	CSS	0 0 0	0 1 0	0 2 0	0 1 0	23.6	15.7	C	C
L = left, T= through, R = right, CSS = Cross Street Stop, TS = Traffic Signal, MD = mid-day -- ¹ = Delay high, intersection unstable, level of service F 1 = Improvement, > = Right turn overlap phase									

Parking

Under the Proposed Alternative Project, each residence would have two parking spaces in the driveway, as required by San Bernardino County Development and building codes. Additionally, there would be a parking lot to service the marina and the open space conservation easement on the lakeshore. The parking lot would have 12 parking spaces for use by the public and the residents of Moon Camp. Only the residents would be allowed access to the marina and the boat launch. Each residence would be assigned a slip to store one boat.

Emergency Access

Emergency access would occur through the two driveways, and an additional fire gate would be provided on the east end of the Proposed Alternative Project.

Summary of Traffic Impacts

The traffic issues related to the Proposed Alternative Project have been evaluated in the context of CEQA and the San Bernardino County CMP. In conformance with the requirements of the San Bernardino County CMP, the Proposed Alternative Project does not require a CMP traffic study. (The CMP requires no analysis for projects that generate less than 250 peak hour trips.) The Proposed Alternative Project generates approximately 51 trips during the AM peak hours and 51 trips during the PM peak hours, which is less than the required threshold for a CMP traffic study. However, a long-range traffic analysis has been required by County staff.

Proposed Alternative Project traffic volumes for all future conditions were estimated using a manual approach. The trip generation calculation was based on the most recent *Institute of Transportation Engineers Trip Generation Rates*, 7th Edition. The Proposed Alternative Project trip distributions were derived from a select zone run of the San Bernardino Mountain Model. Long Range General Plan Buildout (2030) conditions were estimated based on the San Bernardino Mountain Model and the addition of both the Proposed Alternative Project related peak hour volumes and the known cumulative development peak hour volumes per discussions with County staff.

The traffic analysis indicates that under present conditions, affected intersections will operate at less than acceptable rates with or without the Proposed Alternative Project. Traffic improvements are needed for existing conditions and projected conditions whether or not this Proposed Alternative Project is implemented. According to the traffic study, all study intersections are expected to operate at a LOS C or better during peak hours for the scenario analyzed with improvements installed.

Level of Significance before Mitigation

Potentially significant.

4.8.3 - Standard Conditions and Uniform Codes

The traffic evaluation shall be consistent with CEQA and the San Bernardino County Congestion Management Plan. Additionally, the County of San Bernardino has required a long range traffic study to be generated for this Proposed Alternative Project.

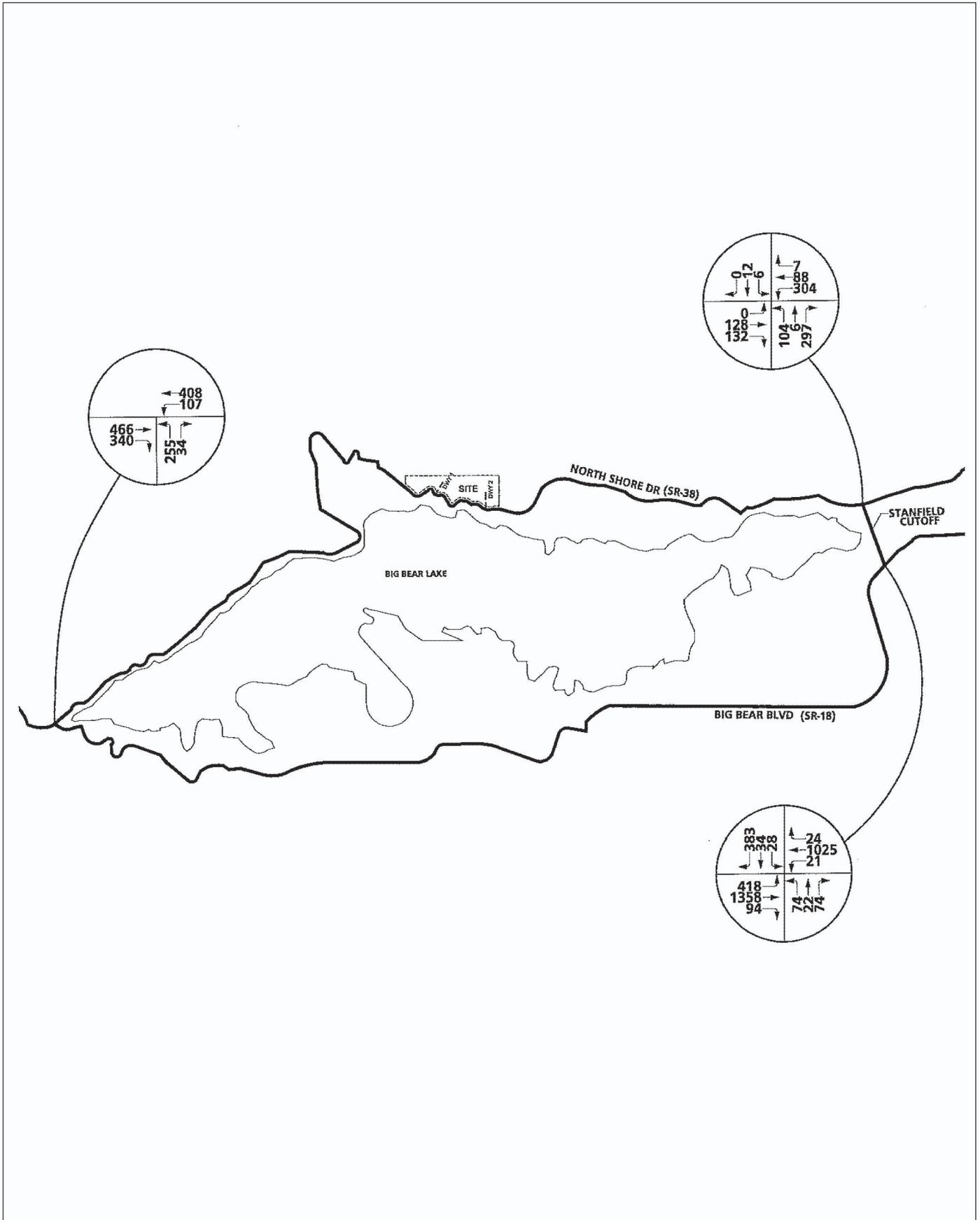
4.8.4 - Project Design Features

The TIA recommends the following Proposed Alternative Project design features:

On-Site Improvements

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the Proposed Alternative Project. Exhibit 4.8-11 (Exhibit 6-A of TIA) illustrates the recommended improvement measures to address on-site circulation requirements of the proposed site, which include the following:

- Sight distance at the Proposed Alternative Project access roadway should be reviewed with respect to Caltrans / County of San Bernardino sight distance standards at the time of final grading landscape and street improvement plans.
- Traffic signing / striping should be implemented in conjunction with detailed construction plans for the Proposed Alternative Project site.
- Construct North Shore Drive at its ultimate half-section width as a Mountain Major highway from Canyon Drive to the Easterly Proposed Alternative Project boundary.
- Install a stop sign control at Driveway #1 and Driveway #2
- Construct an Eastbound Left Turn Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions
- Construct a 2nd Eastbound Through Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions.



Source: URBAN CROSSROADS TIA, EXHIBIT 5-A, 2007.

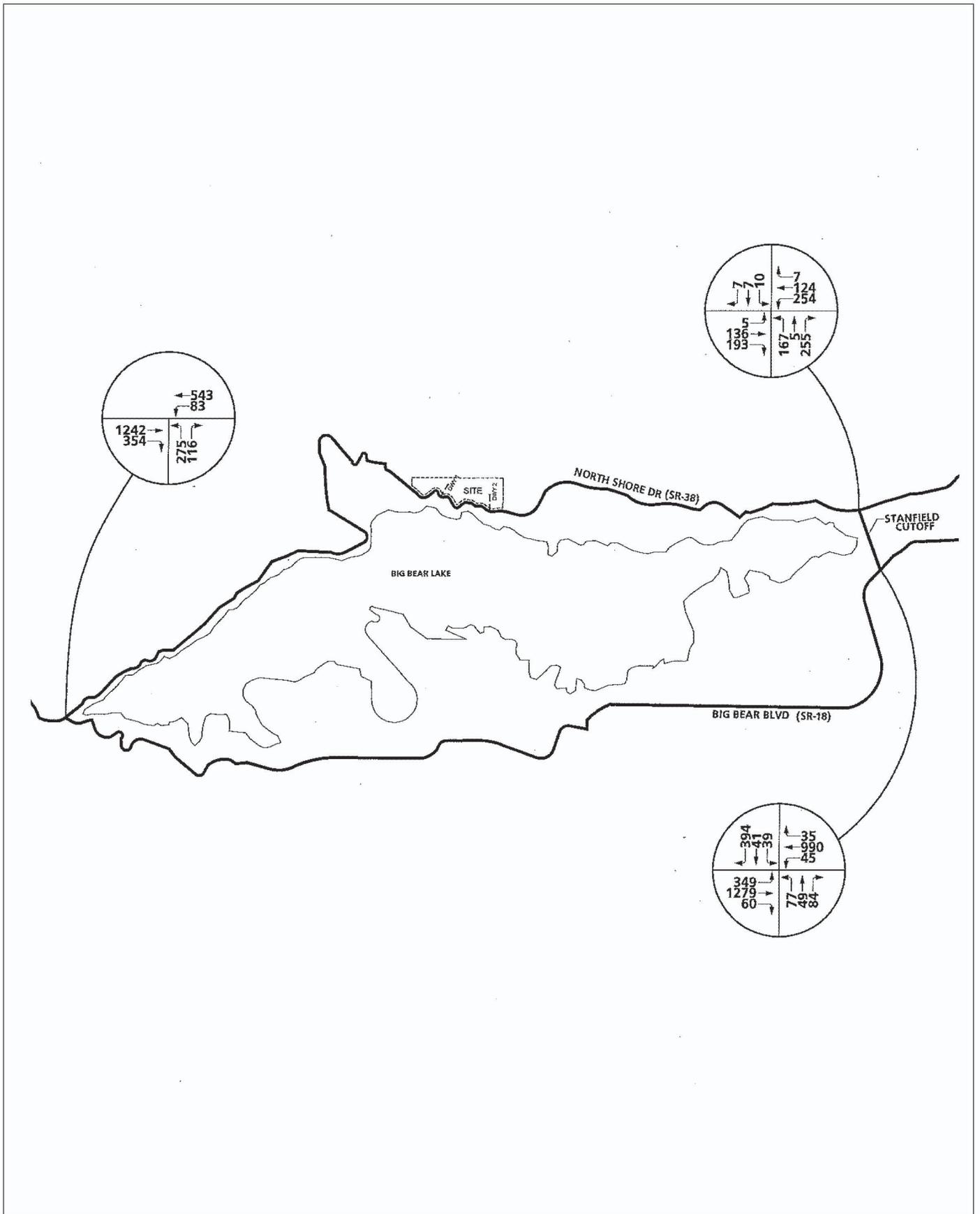


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Exhibit 4.8-9A 2010 Without Project Friday PM Peak Hour Intersection Volumes

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Source: URBAN CROSSROADS TIA, EXHIBIT 5-B, 2007.

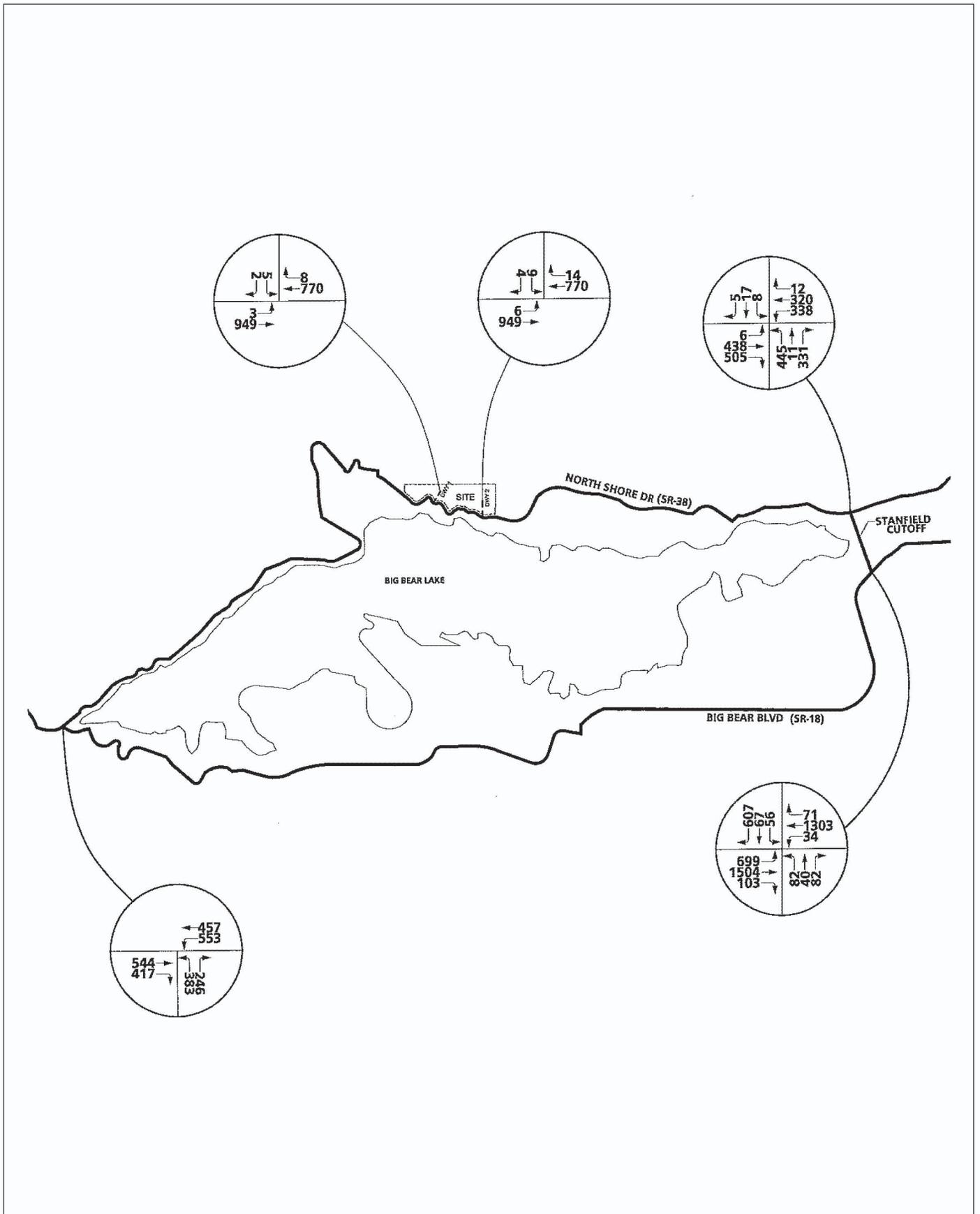


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Exhibit 4.8-9B 2010 Without Project Sunday Mid-Day Peak Hour Intersection Volumes

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MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS TIA, EXHIBIT 5-E, 2007.

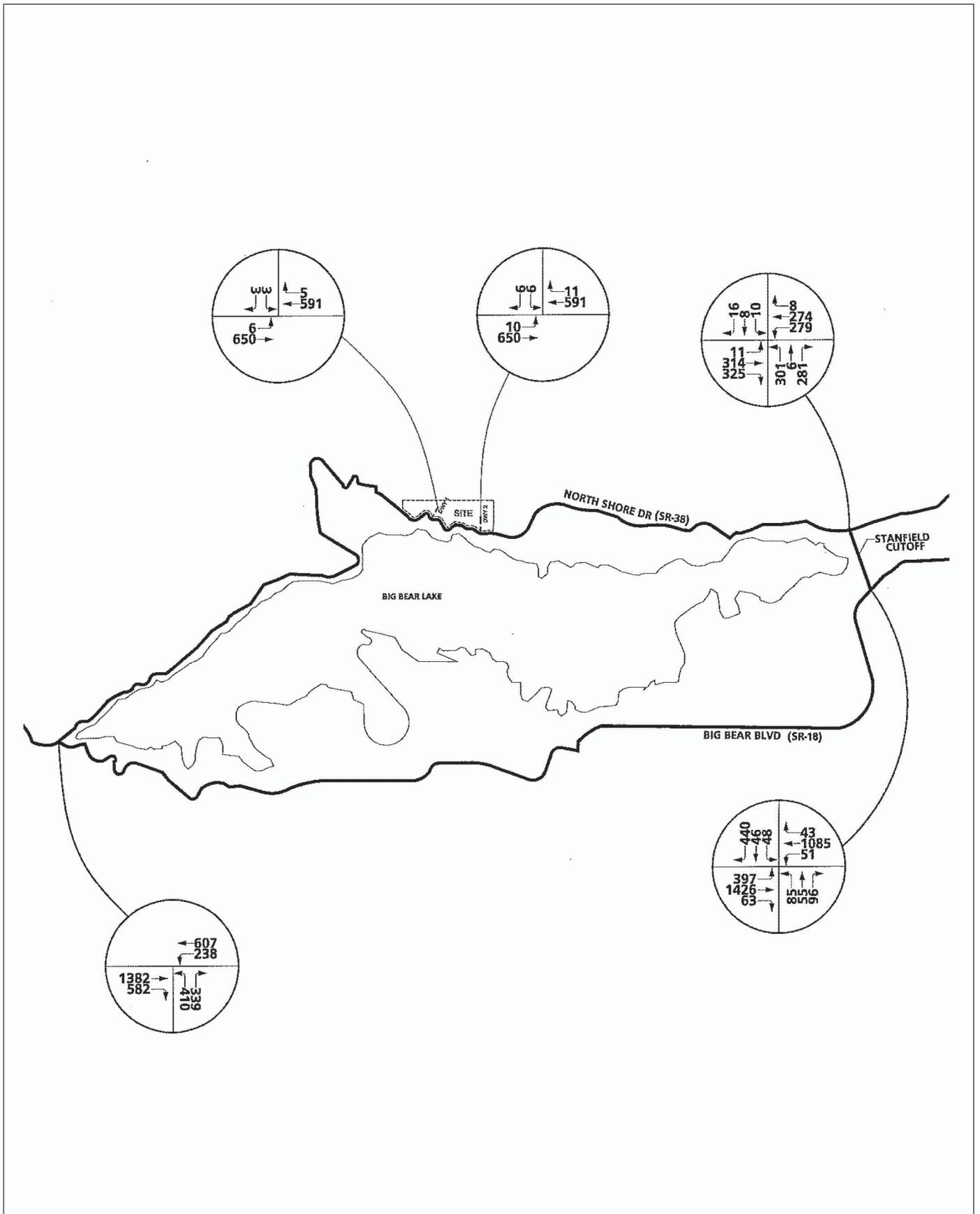


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Exhibit 4.8-10A General Plan Buildout With Project Friday PM Peak Hour Intersection Volumes

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS TIA, EXHIBIT 5-F, 2007.

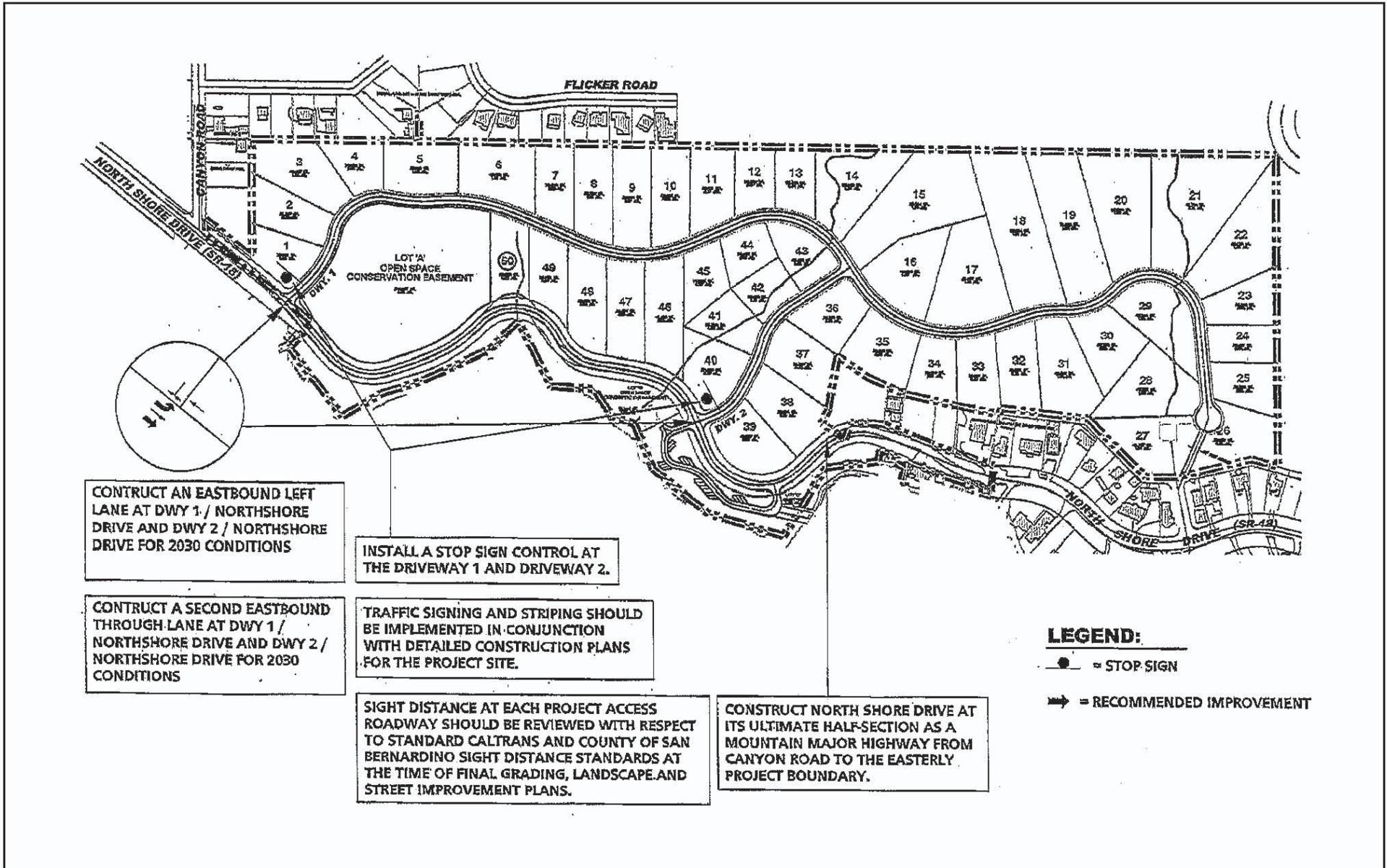


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Exhibit 4.8-10B General Plan Buildout With Project Sunday Mid-Day Peak Hour Intersection Volumes

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT



Source: URBAN CROSSROADS.



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Exhibit 4.8-11 Circulation Recommendations

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Off Site Improvements

The traffic analysis indicates that under present conditions, affected intersections will operate at less than acceptable rates with or without the Proposed Alternative Project. Traffic improvements are needed for existing conditions and projected conditions whether or not this Proposed Alternative Project is implemented. If needed improvements are installed, implementation of this Proposed Alternative Project will not significantly reduce the level of service off-site. Nevertheless, fair share costs have been calculated.

Table 4.8-9 lists traffic improvements and associated costs needed to improve future traffic conditions in the Big Bear area as related to this Proposed Alternative Project.

Table 4.8-9: Roadway Improvement Costs

Intersection	2030 Improvements	Costs
North Shore Dr. (SR-38) at Big Bear Blvd (SR 18) (EW)	Install Traffic Signal	\$400,000
	Construct NB Left Turn Lane	\$50,000
	Construct EB Through Lane	\$289,720
	Add Right Turn Overlap Phasing	\$25,000
	Subtotal	\$764,720
Stanfield Cutoff (NS) at Northshore Drive (EW)	Install Traffic Signal	\$400,000
	Construct 2 NB Left Turn Lanes	\$100,000
	Construct SB Left Turn Lane	\$50,000
	Construct EB Left Turn Lane	\$50,000
	Construct EB Right Turn Lane	\$50,000
	Add Right Turn Overlap Phasing	\$25,000
	Construct WB Left Turn Lane	\$50,000
	Subtotal	\$725,000
Stanfield Cutoff (NS) at Big Bear Blvd. (EW)	Construct NB Left Turn Lane	\$50,000
	Construct SB Left Turn Lane	\$50,000
	Construct SB Right Turn Lane	\$50,000
	Add Right Turn Overlap Phasing	\$25,000
	Construct EB Through Lane	\$289,720
	Construct WB Through Lane	\$289,720
	Signal Modification	\$40,000
	Subtotal	\$794,440
Total Cost of Construction		\$2,284,160
Source: Appendix G of the San Bernardino Congestion Management Program, 2003 Update.		

The Proposed Alternative Project fair share contribution towards the required improvements has been calculated. Table 4.8-10 includes the Proposed Alternative Project's cost contribution based on the Proposed Alternative Project's percent of new traffic. As indicated in Table 4.8-10, the highest Friday PM or Sunday mid-day fair share cost is approximately \$48,921.

Table 4.8-10: Proposed Alternative Project Fair Share Costs

Segment	Cost (\$)	Peak Hours	Existing Traffic	2030 With Project Traffic	Project Traffic	Total New Traffic	Project % of New Traffic	(A) Friday PM Project Cost Share (\$)	(B) Sunday MD Project Cost Share (\$)	Highest Friday PM or Sunday MD Cost Share (\$)
Northshore Dr. at Big Bear Blvd.	764,720	Fri. PM Sunday MD	906 2,208	2,600 3,558	16 26	1,694 1,350	0.94% 1.93%	7,223	14,728	14,728
Standfield Cutoff at Northshore Dr.	725,000	Fri. PM Sunday MD	822 904	2,436 1,833	36 26	1,614 929	2.23% 2.80%	16,171	20,291	20,291
Standfield Cutoff at Big Bear Blvd.	794,440	Fri. PM Sunday MD	2,745 2,635	4,648 3,835	29 21	1,903 1,200	1.52% 1.75%	12,107	13,903	13,903
Grand Total – Cost Share for Improvements								35,500	48,921	48,921

4.8.5 - Mitigation Measures

To assure that potential traffic impacts of the Proposed Alternative Project remain at less than significant levels, the following mitigation measures are proposed:

T-1 The following Project Design Features recommended in the Traffic Impact Analysis shall be incorporated into the Proposed Alternative Project design:

- Construction of North Shore Drive at its ultimate half-section width as a Mountain Major highway from Canyon Drive to the Easterly Proposed Alternative Project boundary.
- Installation of a stop sign control at Driveway #1 and Driveway #2
- Construction of an Eastbound Left Turn Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions.
- Construction of a 2nd Eastbound Through Lane at Driveway 1 / North Shore Drive and Driveway 2/ North Shore Drive for 2030 Buildout Conditions.

T-2 The eastbound left turn lanes at both project access points will be constructed at opening year at 100 percent cost to the Applicant. The Applicant shall pay fair share costs of the construction of the eastbound through lanes at both project access points for the horizon year conditions. The developer shall pay the fair share cost of \$48,921 toward the off-site traffic improvements recommended in Appendix G of the San Bernardino Congestion Management Program, 2003 Update.

4.8.6 - Level of Significance After Mitigation

Less than significant. With incorporation of recommended project design features and payment of fair share costs of impacted off-site roadway intersections, traffic and circulation impacts related to the Moon Camp Proposed Alternative Project will be reduced to less than significant.

4.9 - Utilities

This section presents a discussion of the existing and proposed utilities available to serve the Proposed Alternative Project (Moon Camp Project - 50 lots), which has been modified from the Original Proposed Project (92 lots) described in the 2005 Final Environmental Impact Report (EIR). This section includes an analysis of potential impacts to water supply, sewer and wastewater, natural gas, electricity, and stormwater.

In addition, the discussion of groundwater and water supply is based on the Recommendations for Groundwater Monitoring, prepared by Geoscience Support Services, Inc, September 2004 (Appendix G), the Final Feasibility Study to Serve the Proposed Moon Camp Residential Development (TTM No. 16136), March 2007, Prepared by ALDA Engineering, Inc. (Appendix G); the Moon Camp Well FP-Z Report, August 2008, prepared by California Collaborative Solutions, August 2008 (Appendix G); the "Water Supply Analysis," February 2009, prepared by California Collaborative Solutions (Appendix C); and the "Water Supply Report," May 2009, prepared by California Collaborative Solutions (containing the Thomas Harder Groundwater Consulting Analysis and Big Bear DWP correspondence letter, May 2009) (Appendix C).

4.9.1 - Existing Conditions

Water

The project site lies primarily within a tributary aquifer of the North Shore Subunit designated as Subarea A. A small area within the northwest portion of the project site lies within a separate, adjoining tributary aquifer of the Grout Creek Subunit designated as Subarea D. There are three groundwater wells within the project site, FP2, FP3 and FP4, which were constructed and are owned by the project's property owner and developer. Two of these Project Wells (FP2 and FP3) are located in Subarea A. As part of the North Shore Subunit, Subarea A is a separate groundwater basin and is not a part of the Grout Creek Subunit from which the existing Fawnskin system draws its water. Approximately 40 private, homeowner wells also withdraw water from Subarea A's groundwater aquifer. Project Well FP4 is located in the northwest corner of the project site and draws its water from Subarea D of the Grout Creek Groundwater Subunit. The general location of Project Well FP-4 is shown in Exhibit 4.4-1, Grout Creek Hydrologic Subunit.

Although water service is not presently provided to the project site, the site is immediately adjacent to the Fawnskin Water System, which is owned and operated by the Big Bear Lake Department of Water and Power. Water supply in the Fawnskin Water System is provided by two groundwater wells in the Lower Fawnskin pressure zone and by slant wells in the vicinity of the Racoon Reservoir, all of which draw water from the Grout Creek Subunit. Excess groundwater production from the Lower Fawnskin pressure zone is conveyed to the Upper Fawnskin pressure zone through a booster station located at the Cline Miller Reservoir.

The Department of Water and Power (DWP) provides water service to more than 16,000 customers from four separate water systems within the San Bernardino Mountains of southern California. All of the DWP's water comes from snow and rain that percolates back into the ground. Only 3 to 5 percent of the snow and rain reaches the water table and is recharged for future use. The DWP does not utilize water from Big Bear Lake and no additional water is imported into the Big Bear Valley. The DWP maintains 50 wells, 13 booster stations, 17 reservoirs, 16 chlorination stations, 20 sample stations, approximately 170 miles of water main pipeline, and a complex pressure-reducing network (www.bbldwp.com).

The majority of DWP customers are located in Big Bear Valley. The DWP provides water to its Big Bear Valley customers by pumping ground water from local aquifers. Currently, no outside water source is available to augment the local supply. The remaining system is in Rimforest, California, located near Lake Arrowhead and water used in this system is purchased from the Crestline-Lake Arrowhead Water Agency (CLAWA) (www.bbldwp.com).

Although DWP has completed a Water Feasibility Study (Alda, 2007) and provided a conditional will serve letter to the Applicant, the majority of the project site is outside of the DWP authorized service area as well as the City's Sphere of Influence. As a result, DWP cannot provide water service without first complying with the provisions of Government Code Section 56133, which requires that cities receive Local Agency Formation Commission (LAFCO) annexation approval to provide new or extended services outside their jurisdictional boundaries, but within their spheres of influence.

Wastewater

The project site is located within County Service Area 53B (CSA 53B) and the Big Bear Area Regional Wastewater Agency (BBARWA) sanitary sewer service area. The service area for BBARWA includes the entire Big Bear Valley (79,000 acres) and is served by three separate collection systems: City of Big Bear Lake, Big Bear City Community Services District, and the County of San Bernardino CSA 53B (representing approximately 4 percent of the BBARWA total flow). Each underlying Agency maintains and operates its own wastewater collection system and delivers wastewater to BBARWA's interceptor system for transport to BBARWA's Regional Wastewater Treatment Plant. The regional plant is a 93.5-acre site located adjacent to Baldwin Lake in unincorporated San Bernardino County. The regional plant processes approximately 2.8 billion gallons per year (gpy). In 2006, the Fawnskin area (CSA 53B) produced an average of 80,000 gallons of effluent per day, or approximately 29 million gpy.

Sewage from CSA 53B is transported via the BBARWA North Shore Interceptor/Force Main system to the Regional Wastewater Treatment Plant. Currently, BBARWA has a 10-inch sewer force main located within the shoulder along the south side of State Route 38 (SR-38) that traverses the project site. This force main conveys raw sewage from CSA 53B to the Regional Wastewater Treatment Plant.

Solid Waste

Solid waste collection within the project area would most likely be provided by Big Bear Disposal, Inc. Waste would be transported to the Big Bear Transfer Station, located on Holcomb Valley Road in Big Bear City, approximately 1.5 miles north of Highway 18. The transfer station is owned and operated by the County of San Bernardino Waste Management Division. From the transfer station, solid waste is transferred to the Barstow Landfill; a County of San Bernardino owned and operated facility. The landfill is currently permitted to receive 750 tons of waste per day. The landfill is currently at approximately 25 percent of the original capacity of 3.58 million cubic yards. Closure is scheduled for May 1, 2012. However, as part of the County's strategy for long-range solid waste disposal, the Barstow Landfill could be expanded onto adjacent county-owned property.

Natural Gas

The project site is located entirely within the Southwest Gas Corporation (SGC) utility service territory. A natural gas pipeline is currently installed on the project within the SR-38 right-of-way, very near Big Bear Lake. However, since the site is vacant, no service currently extends onto the site.

SGC is principally engaged in the business of purchasing, transporting and distributing natural gas to residential, commercial and industrial customers in the southwestern United States. SGC serves approximately 1.8 million customers in Arizona, Nevada and portions of California. The company added 71,000 customers in 2006, maintaining its status as one of the fastest-growing natural gas distribution companies in the nation (excluding mergers and acquisitions).

Electricity

Bear Valley Electric Service (BVE) is the local provider of electricity. BVE provides electric power to more than 20,000 customers in the communities surrounding Big Bear Lake, including the Fawnskin area.

BVE recently constructed a local power generating station to provide backup power and peak power to supplement the two power lines that feed the valley. An overhead power line traverses the project site in an east/west direction and is adjacent to and along SR-38.

4.9.2 - Thresholds of Significance

The following criteria for establishing the significance of potential impacts on public services resources were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The proposed project would result in potentially significant impacts to public services if the project would:

- a.) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB);

- b.) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- c.) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- d.) Have insufficient water supplies available to serve the project from existing entitlements and resource, or are new or expanded entitlements needed;
- e.) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- f.) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- g.) Not comply with federal, state, and local statutes and regulations related to solid waste.

4.9.3 - Project Impact Analysis

Projected Utility Use

Table 4.9-1 estimates the utilities consumed/generated by the Proposed Alternative Project.

Table 4.9-1: Projected Utility Use

Utility	Average Usage	Moon Camp Total/Day*	Moon Camp Total/Year*
Water			
Consumption Rate	250gallons/day/unit	12,500 gallons/day	14 acre-feet/year ⁽¹⁾
Sewer			
Generation Rate	215 gallons/day/unit	10,750 gallons/day	3.9 million/gallons/year ⁽²⁾
Electricity			
Consumption Rate	16.66 kWh /unit/day	833 kWh/day	304 thousand kWh/year
Natural Gas			
Consumption Rate	219.12 cubic feet/unit/day	10,956 cubic feet/day	4 million cubic feet/year
Solid Waste			
Generation Rate	20 pounds/day/household	1,000 pounds/day	182.5 tons/year
Source - Water Feasibility Study ⁽¹⁾ (Alda, 2007); Sewer Feasibility Study ⁽²⁾ (So, 2007). * Based on 116 residents (50 units at 2.31 persons/unit; persons/unit). Note: Totals could be slightly off due to rounding.			

4.9.4 - Water Service Alternatives

Although water service is not presently provided to the project site, the site is immediately adjacent to the jurisdiction of the DWP and annexation to the DWP's authorized service area is one of three

possible water service alternatives. DWP has conducted a Water Feasibility Study (Alda, 2007), and provided a conditional will serve letter to the Applicant. However, the majority of the project site is outside of the DWP authorized service area as well as the City's Sphere of Influence. DWP cannot provide water service without first complying with the provisions of Government Code Section 56133, which pertains to the LAFCO annexation process. In order for the DWP to provide water service to the project site and to own and operate the Proposed Alternative Project's water system, LAFCO would have to approve an expansion of the City of Big Bear Lake's Sphere of Influence (SOI) to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site. The developer would be required to construct the on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007). This is Water Service Alternative #1 (see below for details).

Water Service Alternative #2 (see below for details) would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Instead, County Service Area 53C (CSA 53C) would own and operate the water facilities within the project site and contract with the DWP for a water interconnection to the existing Fawnskin water system. The developer would be required to construct the same on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda, 2007).

Water Service Alternative #3 (see below for details) would not require LAFCO's approval and would not create the expansion of the City's Sphere of Influence around Fawnskin and the project site. Alternative #3 would involve the developer constructing an independent water system completely within the project site. The developer would construct the same on-site water lines as in Water Alternatives #1 and #2, and, in addition the required water reservoir and water booster station would be constructed by the developer on the project site (rather than constructing the off-site water facilities identified in the DWP's Water Feasibility Study). CSA 53C would own and operate this independent water system.

Water Service Alternative #1

According to the Water Feasibility Study prepared by Alda Engineering Inc. (Appendix G), water service to the project site could be provided from the DWP's Upper Fawnskin pressure zone (*Water Feasibility Study*, Appendix G, Alternative B). However, significant transmission improvements in the Fawnskin system would be needed to provide fire flow to the project site. The closest DWP pipeline within the Upper Fawnskin system is a single six-inch-diameter pipeline located near the intersection of Flicker Road and Chinook Road, approximately 2,000 feet from the westerly boundary of the project site.

The Upper Fawnskin pressure zone has an operating hydraulic grade of 7,113 feet set by the high water level of the existing 0.25-million gallon Racoon Reservoir. Based on this hydraulic elevation, static pressures within the project site would range from a low of 71 psi at the highest point in Lot 18 to 157 psi near the lake. Therefore, individual pressure regulators would be required for all lots with

static pressures exceeding 80 psi. The future home owners would install and fund the individual pressure regulators as required for specific lots.

Projected water demand for the Proposed Alternative Project, Moon Camp 50-lot subdivision, is based on the DWP's Water Feasibility Study consumption rate of 250 gallons per day (gpd) per connection. Exhibit 2-6, Proposed Water Facilities, shows the proposed water system. Maximum day demand is estimated based on information provided in the recently completed DWP Water Master Plan and it is equivalent to 1.76 times the average day demand. Therefore, the average and maximum day demands for the Proposed Alternative Project's 50-lot subdivision are estimated as follows:

- Average Day Demand (ADD) = 12,500 gpd or 8.68 gallons per minute (gpm); and
- Maximum Day Demand (MDD) = 15.27 gpm.

Based on an estimated average day demand of 12,500 gallons, the annual water demand for the Proposed Alternative Project (50 lots) is estimated at 4.56 million gallons or 14 acre-feet per year. Required fire flow and water storage for the Proposed Alternative Project are identified in the Alda Water Feasibility Study (Appendix G) as 1,750 gpm with a 2-hour duration, and 238,600 gallons of storage.

Currently there are three groundwater wells on-site (constructed by the project's property owner and developer), Wells FP2, FP3 and FP4. Alternative #1 involves wells FP2, FP3, and FP4 being deeded to the DWP at the time the tract map is recorded.

The Water Feasibility Study provides two options (A and B) for expanding the existing Fawnskin Water System infrastructure. Option B has been chosen by DWP and the Applicant as the preferred Water Feasibility Study alternative for Water Service Alternative #1. In either case, the Applicant would install all common infrastructures, including fire hydrants, and would also install the water main lines within the project site. The water improvements will primarily occur within existing paved roads. Nearby residents are not required to tie into the proposed DWP water system. The impacts related to the installation of the off-site and on-site water improvements would be temporary and are considered less than significant. See Exhibit 2-6 for the proposed water facilities and improvements.

Water Service Alternative #2

This Alternative assumes the City does not wish to expand its Sphere of Influence, or that LAFCO does not approve an expansion of the City of Big Bear Lake's Sphere of Influence to include the entire existing DWP Water Service Area in Fawnskin as well as the entire project site (Water Service Alternative #1). The existing County Service Area 53C (CSA 53C) is authorized to own and operate water systems, and currently CSA 53C encompasses the entire project site. No LAFCO action would be required for CSA 53C to own and operate the Proposed Alternative Project's Water System.

Alternative #2 would include the developer constructing the on-site and off-site water facilities contained in the DWP's Water Feasibility Study (Alda, 2007); CSA 53C owning and operating the Proposed Alternative Project's Onsite Water System (the three water wells and the water main lines); DWP owning and operating the water facilities constructed by the developer within the DWP's Fawnskin Water System; and CSA 53C contracting with the DWP for a water interconnect between the DWP's existing Fawnskin Water System and the Proposed Alternative Project's Onsite Water System.

All of the water demand calculations for the Proposed Alternative Project, water system descriptions, and the Water Feasibility Study Option B described in Water Service Alternative #1, apply to Water Service Alternative #2.

The water improvements for Water Service Alternative #2 would primarily occur within existing paved roads. The impacts related to the installation of the off-site and on-site water improvements would be temporary and are considered less than significant. See Exhibit 2-6 for the proposed water facilities and improvements.

Water Service Alternative #3

Instead of constructing the off-site water facilities (within the Fawnskin Water System) identified in the DWP's Water Feasibility Study Option B (Alda, 2007, which is the basis for Water Service Alternatives #1 and #2, above), the Proposed Alternative Project's developer would construct an on-site reservoir (238,600 gallons) and an on-site booster station capable of providing the daily water supply flow and the required 1,750 gallons per minute fire flow. The reservoir and booster station would be sized based upon the same demand calculations contained in the Water Feasibility Study and Water Service Alternatives #1 and #2:

- Average Day Demand (ADD) = 8.68 gpm.
- Maximum Day Demand (MDD) = 15.27 gpm;
- Fire Flow = 1,750 gpm with a 2 hour duration;
- Operational Storage = 30% of MDD (15.27 gpm) = 6,600 gallons;
- Emergency Storage = 100% of MDD (15.27 gpm) = 22,000 gallons;
- Fire Flow Storage for 1,750 gpm (2 hour duration) = 210,000 gallons; and
- Total Storage Requirement per the Alda Water Feasibility Study = 238,600 gallons.

The developer would also construct the same on-site (within the project site) water facilities (water main lines, fire hydrants, etc) identified in the Alda Water Feasibility Study. Existing water wells FP2 and FP4 would be connected to the on-site water system and pump their water into the 238,600 gallon on-site reservoir. The on-site booster station would produce the Average and Maximum Daily Demand flows (8.68 gpm and 15.27 gpm) and the Fire Flow of 1,750 gpm for the 2-hour duration. The booster station would include an emergency electrical generator to allow the station to operate during a power outage.

The water improvements for Water Service Alternative #3 will primarily occur within the Proposed Alternative Project's paved roads and at the Proposed Alternative Project's reservoir site. The construction of the reservoir would include grading an approximately 75-foot-diameter pad for the reservoir. The impacts related to the installation of the on-site water improvements would be temporary and are considered less than significant.

4.9.5 - Proposed Alternative Project - Water Demand and Water Supply

The Water Feasibility Study calculates the Water Demand for the Proposed Alternative Project as:

- 250 gallons per day per connection x 50 lots = 12,500 gallons per day;
- 12,500 gallons per day x 365 days/year = 4,562,500 gallons per year; and
- 4,562,500 gallons per year is equal to 14 acre-feet per year.

The water supply for the Proposed Alternative Project's 14 acre-feet per year demand will come from two groundwater basins. Based on two separate reports prepared by Geoscience in 2000 and 2003 (included as appendices to the 2005 Final EIR), the annual groundwater recharge for Subarea A of the North Shore Subunit is between 14 and 44 acre-feet per year, with an estimated annual Maximum Perennial Yield of 29 acre-feet per year. In order to be as conservative as possible, the "minimum recharge" of 14 acre-feet per year will be utilized for Subarea A. There are also existing private, homeowner wells that withdraw their water supply from Subarea A. Table 4-2 of the DWP's 2006 Water Master Plan, prepared by CDM Engineering, shows the "Private Wells Production" within Subarea A as 5 acre-feet per year of groundwater production. Subtracting the 5 acre-feet of groundwater production from the minimum recharge for Subarea A of 14 acre-feet leaves 9 acre-feet available to supply the Proposed Alternative Project. Existing Project Well FP-2 is capable of pumping the 5.6 gallons per minute that will produce the 9 acre-feet per year of groundwater production from Subarea A and will also produce the Maximum Day Demand of 15.27 gpm (Geoscience Support Services Inc, 2008, Results of Rehabilitation and Aquifer Testing Moon Camp Well FP2).

The remaining 5 acre-feet per year of Proposed Alternative Project Demand will be supplied from the Grout Creek Groundwater Subunit, Subarea D. Project Well FP-4, which was drilled by the developer in the northwest corner of the project site, will supply the 5 acre-feet per year of groundwater production, which is 3.1 gallons per minute (Harich Enterprises, 2009, Well FP-4 Driller's Report). Thomas Harder Groundwater Consulting noted in its report that the only potential impact from FP-4 would be the draw-down influence onto neighboring private wells as indicated from pump test data. The data indicated that FP-4, at a sustained rate of 3.5 gpm, would result in a 2-foot draw-down in groundwater level for the nearest private well, which is located approximately 250 feet from Well FP-4. The available data on private wells suggests that the nearest private well has a saturated thickness that would be able to accommodate the additional 2-foot draw-down and that pumping from Well FP-4 would not significantly impact the private well's routine operations. Based on these data, mitigation (per the 2009 Water Supply Report) shall be incorporated into the Proposed

Project Alternative that will limit the Proposed Alternative Project's allocation of water supply from Well FP-4 to a maximum of 5 acre-feet per year.

Geoscience (2003) reports the groundwater annual recharge of Grout Creek Subarea D to be between 32 and 99 acre-feet per year, with an estimated annual Maximum Perennial Yield of 66 acre-feet per year. At present, the only groundwater production in this subarea is from 11 private wells and is calculated to be 3 acre-feet per year. The additional 5 acre-feet per year of annual groundwater production from Well FP-4, combined with the existing 3 acre-feet per year of annual groundwater production, results in 8 acre-feet per year of total annual groundwater production, well below the low end of the annual recharge for Subarea D, which is 32-acre-feet per year, and also well below the estimated Maximum Perennial Yield for Subarea D which is 66 acre-feet per year.

Project Well FP-2 was cleaned, rehabilitated and test pumped by Roadrunner Drilling, under the supervision of Geoscience, in July of 2008. Geoscience's August 2008 Report concluded that:

- Well FP-2 has successfully been rehabilitated and its specific capacity restored to near original levels;
- Well FP-2 can yield up to 35 gpm on a long term basis with less than 10 ft of drawdown;
- At the 35 gpm discharge rate, pumping interference with the nearest private well (910 feet to the east of FP2) is expected to be less than 0.3 ft (less than 3.6 inches);
- Groundwater quality data from Well FP-2 indicates the water from the well is suitable for municipal supply; and
- There is no evidence from the Microscopic Particulate Analysis that the ground water produced by Well FP-2 is under the direct influence of surface water in Big Bear Lake.

Thomas Harder, Groundwater Consulting (formerly with Geoscience), stated in his May 1, 2009, letter (Appendix C) that the potential impact of pumping Project Well FP-2 on the surface water of Big Bear Lake would be minimal. The top of perforations for Project Well FP-2 (the area of the well where water is withdrawn from the surrounding soil) occur (begin) approximately 60 feet below ground surface, at an elevation of approximately 6,686 feet above mean sea level (msl). The high surface water elevation in the lake is 6,743 feet msl and the average depth of the lake is 30 feet. Thus, the elevation of the bottom of Big Bear Lake is approximately 27 feet above the top of perforations for Project Well FP-2. The geologic log for Project Well FP-2 shows multiple silt and clay layers between the land surface and top of perforations. If the silt and clay layers extend beneath the lake, they would provide some hydraulic separation between the lake water and aquifer system. While it is possible that some vertical leakage could occur from the lake into the aquifer system of FP-2, the majority of groundwater produced by FP-2 would be from the aquifer underlying Subarea A.

The third existing, on-site well, FP-3, located to the east of the FP-2 well, would not be equipped nor pumped, but will be used as a monitoring well to record groundwater levels.

Groundwater Recharge

Impacts from Project Wells FP-2 and FP-4 will be less than significant as long as mitigation measures established in the Thomas Harder Groundwater Consulting Report are implemented to ensure that annual groundwater production limits for FP-2 are 9 acre-feet per year; and FP-4 are 5 acre-feet per year.

In summary, the Proposed Alternative Project demand is 14 acre-feet per year. Well FP-2 is capable of producing the 5.6 gallons per minute, which is 9 acre-feet per year from North Shore Subunit, Subarea A, and Well FP-4 will produce the 3.1 gallons per minute, which is 5 acre-feet per year from Grout Creek Subunit, Subarea D. Therefore, there is sufficient water available to serve the Proposed Alternative Project, and the impacts in regard to water supply for the Proposed Alternative Project are considered less than significant.

Wastewater

So and Associates Engineers Inc. prepared a wastewater feasibility study for the Proposed Alternative Project (So, April 2007; Appendix G). According to So and Associates, the project would generate approximately 10,750 gallons of effluent per day, with an estimated peak flow of 43,000 gallons per day. According to the study, the existing sewer system has the capacity to service the Proposed Alternative Project.

Before service can be extended to the site, both on and off-site improvements would be necessary. The improvements include an extension of 1,200 linear feet along North Shore Drive to connect to the existing 8-inch collector sewer southwest of the property. Other requirements include that 1) all gravity facilities must be minimum 8-inch diameter; 2) all on-site facilities must meet CSA 53B standards and specifications and construction plans must be submitted for plan check and approval by the District Engineer; and 3) the Applicant will be required to construct 4,400 lineal feet of on-site collector sewer mainlines as shown in Exhibit 2-7, Proposed Sewer Facilities.

The Proposed Alternative Project would convey part of the wastewater flow via gravity sewer to the existing Pump Station B, southeast of the property, as shown in Exhibit 2-7. However, depending upon where houses are built on each lot, some of the lots may require individual, on-site, household pump stations. This will depend on the individual lot design and will be decided at the time each lot is developed. The future homeowner will fund and install the lot-specific sewer improvements.

The Applicant would construct and pay for all common sewer infrastructure required for implementing the Proposed Alternative Project. The future homeowners will fund the lot-specific improvements. The future homeowners will pay for the associated connection fees to CSA 53B and BBARWA. The County's local fee for connecting to CSA-53B is \$1,358.72 per dwelling unit. This

represents \$67,936 in local connection fees for the 50 residential lots in the Proposed Alternative Project. Regional fees are also imposed by BBARWA for sewage treatment and disposal. These fees are assessed at \$2,704.99 per dwelling unit, which represents \$135,249.50 in regional connection fees for the 50 residential lots in the Proposed Alternative Project.

The sewer line design and connection details must be submitted to the County's Special Districts Department (SDD) for plan check and approval. The Applicant will pay the sewer line design and inspection fees that are related to the common infrastructure. Individual lot owners / home builders do not pay any of these fees. Individual home builders would pay an inspection fee to CSA 53B for the inspection of their house lateral connection to the common infrastructure.

The future residents would pay monthly user fees that offset the sewer system maintenance. Therefore, all project related costs would be paid for by the Applicant and/or the future residents, and the utility providers would not be financially impacted by the future residential development.

The existing sewer system has the capacity to service the 50 residential lots in the Proposed Alternative Project, and the cost of providing service will not impact BBARWA, the County or existing Fawnskin residents. The impacts in regard to sewer service are considered less than significant and no mitigation is required.

Solid Waste

According to the website of the California Integrated Solid Waste Management Board, local residents generate an average of 20.0 pounds of solid waste per household per day. Since the Proposed Alternative Project would have 50 single-family residences, the Proposed Alternative Project could generate as much as 1,000 pounds or one-half ton of solid waste per day.

Solid waste collection within the project area would be provided by Big Bear Disposal, Inc. Waste would be transported to the Big Bear Transfer Station, located on Holcomb Valley Road in Big Bear City, approximately 1.5 miles north of Highway 18. The transfer station is owned and operated by the County of San Bernardino Waste Management Division. From the transfer station, solid waste is transferred to the Barstow Landfill; a County of San Bernardino owned and operated facility. The landfill is currently permitted to receive 750 tons of waste per day. The landfill is currently at approximately 25 percent of the original capacity of 3.58 million cubic yards. Closure is scheduled for May 1, 2012. However, as part of the County's strategy for long-range solid waste disposal, the Barstow Landfill could be expanded onto adjacent county-owned property.

County landfills do not accept hazardous wastes. The County operates regular programs/operations to routinely collect hazardous wastes from residential sources (i.e., residential round-ups, once a month collection locations, etc.). Each new residence is expected to generate approximately 50 pounds of hazardous waste per year, according to data from the State Integrated Waste

Management Board website. All residents, including those within the project site, are expected to take advantage of these programs to a similar degree as existing County residents.

Since the cost is passed down to the residents via monthly service fees and because the landfill has adequate storage capacity, no significant impacts are anticipated with regard to solid waste collection or disposal.

Natural Gas

SGC has indicated that natural gas main pipelines are installed in the right-of-way of SR-38. According to the 2005 Final EIR, the Southwest Gas Corporation has concluded that there is sufficient capacity in their facilities to provide natural gas service to the project area without any significant impact on the environment. As such, extensions to existing facilities would be required in order to provide service to the Proposed Alternative Project. Service would be provided in accordance with SGC's policies and extension rules on file with the California Public Utilities Commission. Future natural gas service to the project area would require coordination with the company's engineering department for a comprehensive plan as to levels of service required.

Because the larger (92-lot) Original Proposed Project would not cause significant impacts, the Proposed Alternative Project, with 46 percent fewer residential units, would also not cause significant impacts. Therefore, implementation of the Proposed Alternative Project would result in a less than significant impact with respect to natural gas service.

There is a natural gas line underneath Big Bear Lake, located to the east of the proposed marina. There has been some public concern regarding this natural gas line and the potential for it to rupture during construction activities in the lake, associated with the construction of the boat launch ramp and placement of the floating docks. The gas line does not pose a threat to public safety, as it is buried, and, therefore, protected from boating activities during low lake levels. Furthermore, no dredging of the lake is proposed for the marina. The only proposed construction that would interfere with the lake is the proposed ramp. However, the ramp would not be located in the area of the natural gas line. Additionally, prior to any excavation, Underground Service Alert must be called and all utilities respond and mark the location of their underground lines. The impacts in this regard are therefore considered less than significant.

Electricity

The Proposed Alternative Project would result in an increased demand for electrical service. Based on a daily average of 16.66 kilowatts per unit, at project buildout the Proposed Alternative Project would utilize 833 kilowatts per day. BVE recently constructed a local power generating station to provide backup power and peak power to supplement the two power lines that feed the valley. According to BVE, service is available and of adequate supplies.

The Applicant will construct and fund all infrastructure related to the Proposed Alternative Project. In addition, the future residents of the site will pay monthly user fees that offset the cost of service and maintenance. Therefore, the impacts in this regard are considered less than significant and no mitigation is required.

4.9.6 - Standard Conditions and Uniform Codes

All utility improvements constructed as part of the Proposed Alternative Project will meet applicable uniform codes (i.e., plumbing, fire, and building), including potable water and sewer systems, electrical cables and wiring, natural gas lines, solid waste containers and enclosures, and telephone/cable lines. The County's development review and construction inspection processes would assure that these improvements are constructed according to appropriate standards.

Water conservation measures recommended by the California Department of Water Resources must be incorporated as appropriate, including but not limited to: (a) low flush toilets of no greater than 1.6 gallons per flush; (b) insulation of hot water lines to provide hot water faster with less waste; and (c) keeping water pressure at 55 pounds psi or less. Some portion of the landscaping, especially shrubs and trees, may be native species or species that are adapted to drought conditions.

The project must comply with energy conservation standards contained in Titles 20 and 24 of the California Code of Regulations, Section 2-5307(b), which is the California Energy Conservation (CEC) Standard for New Buildings. These regulations prohibit the installation of fixtures unless the manufacture has certified to the CEC compliance with the flow rate standards. Title 24, California Code of Regulations Sections 2-5452(i) and (j) addresses pipe installation requirements, which can reduce water use before hot water reaches equipment or fixtures. Title 20, California Code of Regulations Section 1604(f) and 1606(b) are Applicable Efficiency Standards that set the maximum flow rates of all plumbing fixtures and prohibit the sale of non-conforming fixtures.

The Applicant or individual property owners would also be responsible for paying applicable utility impact fees charged by various service providers. Payment of these fees helps the local agencies anticipate future demand and establish plans and construct new facilities to serve growth.

4.9.7 - Project Design Features

The Proposed Alternative Project includes master water and sewer plans that will provide comprehensive utility systems. All utility improvements will be constructed to the satisfaction of the County Public Works Department; and SWG, Bear Valley Electric and BBARWA, CSA 53B, CSA 53C and Big Bear Lake Department of Water and Power will maintain their respective utility lines within the public right-of-way, as appropriate. The Applicant will install all common infrastructures necessary to support the proposed residential development, including the required wastewater improvements, water mains, and fire hydrants.

4.9.8 - Mitigation Measures

Project design features and standard conditions and uniform code reduce many potential impacts to less than significant levels. However, the following mitigation measures are recommended in order to mitigate utility impacts associated with the Proposed Alternative Project to the maximum extent feasible.

Water

U-1a The Moon Camp Home Owners Association shall create a “conservation guidelines” booklet that outlines the following measures:

- All indoor water fixtures shall be low flow / low flush.
- Landscape shall not be irrigated between the hours of 9:00 a.m. and 6:00 p.m.
- Residences, buildings, and premises shall be limited to watering landscaping every other day.
- Water from landscape irrigation shall not be allowed to run off into streets or other paved areas.
- Water leaks are not permitted and must be repaired as soon as practicable.
- Sidewalks, paved driveways, and parkways shall not be washed off with hoses, except as required for sanitary purposes.
- Washing non-commercial vehicles (cars, boats RVs) is permitted; however, it shall only be permitted with an automatic shut-off nozzle on a hose, or with a bucket.
- Turf landscaping shall be limited to 500 square feet on a parcel or lot unless the water purveyor’s regulations allow additional turf area.
- Turf irrigation shall include an automatic controller that incorporates evapo-transpiration and rain shutoff features.
- Sprinklers are only allowed on turf. All other landscape plantings must be irrigated with efficient, low water use devices, such as, drip systems or bubblers.
- All outdoor irrigation systems shall be shut off and winterized between November 1st and April 1st of each year.
- A model landscaping and irrigation guide shall be prepared for the tract and required by homeowner association rules. The guide shall identify the following conservation measures: Landscaping shall include a plant palate that emphasizes Xeriscape, native plants and cultivars that are suitable for the mountain climate. Plant materials shall be low water consuming and fire

resistant. Irrigation shall limit aerial spray methods and shall emphasize drip and bubbler type emitters. The landscaping guidelines shall be reviewed and approved by the Land Use Services Department. In addition, the project shall comply with the local water agency's Model Landscape and Irrigation Ordinance'.

- The Project shall comply with the local water agency's "Model Landscape and Irrigation" ordinance.

U-1b Pumping and extraction of groundwater shall be limited to 9 acre-feet per year for Well FP-2, 0 acre-feet per year for Well FP-3, and 5 acre-feet per year for Well FP-4. If the water purveyor desires to extract groundwater from Well FP-2 in excess of 9 acre-feet per year, the purveyor shall conduct an independent environmental analysis to identify and consider potential impacts at that time.

U-1c The grant deeds transferring ownership of Wells FP-2, FP-3 and FP-4 shall include the pumping and extraction limitations included in Mitigation Measure U-1b. The grant deeds shall also state that the water purveyor, on January 1st of each year, shall report the amount of the prior year's annual groundwater production from Wells FP-2, FP-3 and FP-4 to the County Land Use Services Department and the County Health Department.

Wastewater

U-2 Prior to issuance of building permits, the Applicant shall fund all on-site and off-site sewer improvements required to support development of the project site. Such improvements shall be to the satisfaction of the County Service Area (CSA)53B.

U-3 Prior to issuance of building permits, the Applicant shall provide evidence to the County of San Bernardino that the BBARWA has sufficient transmission and treatment plant capacity to accept sewage flows from the project site.

4.9.9 - Level of Significance after Mitigation

The utility impacts of the Proposed Alternative Project would be less than significant with mitigation.

SECTION 5: CUMULATIVE IMPACTS

5.1 - Introduction

California Environmental Quality Act (CEQA) Guidelines (Section 15130) require identification of related projects, both public and private, that together with a proposed project could have cumulative impacts on the environment. There are several development projects in the general vicinity of the Proposed Alternative Project that may produce a cumulative impact on the community. These projects may produce community-wide and area-wide cumulative impacts related to traffic, noise, and air quality, in addition to various site-specific impacts.

CEQA Guidelines Section 15604(i), which is the same as CEQA Statute Section 21083(b), includes a vague definition of “cumulatively considerable.” Project contributions to cumulative impacts are “considerable” when viewed in connection with the effects of past, current, and “probable future projects.” This information will be used as guidance in evaluating the cumulative impacts of planned growth and the Proposed Alternative Project’s contributions to those impacts. For all environmental issues, the area of consideration of potential cumulative impacts will be specified so the contribution of the Proposed Alternative Project to cumulative impacts can be clearly identified.

5.2 - Cumulative Projects

CEQA Guidelines Section 15130 requires identification of related projects, both public and private, that together with a proposed project could have cumulative impacts on the environment. The County of San Bernardino and City of Big Bear Lake have identified 17 development projects, in addition to the Proposed Alternative Project, that are either pending or recently approved, or in process of being constructed within the Proposed Alternative Project area. These “cumulative” projects represent a total of 957 residential units, 146 hotel rooms, approximately 40,000 square feet of retail space, 6,300 square feet of office space, a 20,000 square-foot church, and 3 acres of mini-storage. Table 5-1, Cumulative Project List, summarizes the projects within the study area that could have a direct or connected indirect impact or influence on the project site or surrounding area.

If approved and constructed, these projects could introduce an additional 2,110 residents into the Big Bear Valley. This estimate is based on an average household size of 2.31 persons per household for standard single-family units based on data from the federal census.

Table 5-1: Cumulative Project List

Project Type	Description	Number of Units/Size	Population
<i>County of San Bernardino</i>			
TT 16771	SFR	242	559
TT 16934	SFR	228	527
TT 17217 &TT17022	SFR	53	122
TT 16036	SFR	116	268
TT 14916	SFR	51	118
TT 16980	SFR	15	35
TT 1776H	SFR	10	23
TT 16749	SFR	86	199
TT 17201	SFR	66	152
Total (County of San Bernardino)		867 Residential Lots	2,003
<i>City of Big Bear Lake</i>			
Hilton Garden Inn	Hotel	91 Rooms	--
Mixed use Development	Retail	22,500 square feet	9
	Office	6,300 square feet	
	Residential	10 acres/4 lots	
Residential	SFR	8 lots	18
Residential	Condominiums	78 dwelling units	180
Mixed use Development	Hotel	55 rooms	--
	Retail	10,000 square feet	--
	Fast Food	2,500 square feet	--
World Harvest Faith Center	Church	20,000 square feet	--
Boat Parts Retail & Service	Boat/Auto Care Center	4,375 square feet	--
Storage Yard	Mini Storage	3 acres	--
Total (Big Bear)		12 SFR/78 MFR, 65,675 square feet of mixed use, 3 acres of storage, 149 hotel rooms	207
TOTAL		879 SFR 78 MFR 65,675 square feet of mixed use 3 acres of storage 146 hotel rooms	2,210

The potential cumulative impacts of these developments are evaluated herein. Each environmental issue analyzed previously in Sections 4.1 through 4.9 of this Revised and Recirculated Draft Environmental Impact Report (EIR) is also evaluated here in terms of cumulative impacts.

5.3 - Cumulative Impacts Analysis

Cumulative impacts related to Geology and Soils, Public Safety, and Cultural Resources were determined to have been adequately addressed in the 2005 Final EIR and are not re-analyzed in this Revised and Recirculated Draft EIR. Please refer to the 2005 Final EIR for a discussion of cumulative impacts to these areas.

5.3.1 - Aesthetics/ Light and Glare

Build-out of the Proposed Alternative Project, together with cumulative projects, may alter the nature and appearance of the area and contribute to the loss of undeveloped areas. As development occurs in the Fawnskin area as well as the broader Big Bear Valley, residents and visitors in the area would notice the visual effects of development projects. Construction of currently approved and pending projects in the vicinity would permanently alter the nature and appearance of the area through the loss of undeveloped properties. Security and street lighting would introduce some light and glare to the area; however with adherence to development code requirements, these impacts can be minimized. The significance of these visual/aesthetic changes is difficult to determine, since aesthetic value is subjectively determined and potential impacts are site-specific, and impacts are typically evaluated on a project-by-project basis.

The County of San Bernardino identifies the Proposed Alternative Project site within a Scenic Resources (SR) Overlay District and SR-38 as a County Scenic Highway. The State of California has also designated this portion of SR-38 as a “Scenic Highway” and the U.S. Forest Service (USFS) has designated SR-38 as a “scenic byway.” The intent of the SR Overlay District is to “provide development standards that will protect, preserve, and enhance the aesthetic resources of the County.” Thus, cumulative impacts in this area can be mitigated to less than significant levels by following the development standards of the SR Overlay District for building and structure placement, project design, access drives, landscaping, roads, undergrounding of utilities, grading and signs, in addition to the use of building materials that are consistent with the general character of the area, and proper lighting techniques to direct light on-site and away from adjacent properties. Although no mitigation measures were specifically recommended to reduce cumulative impacts, Mitigation Measures A-1a through A-4f are required to further reduce the Proposed Alternative Project’s impacts to Aesthetics/Light and Glare.

Project-specific impacts to Aesthetics/Light and Glare will be reduced to less than significant levels by the incorporation of mitigation measures, along with standard conditions and Conditions, Covenants & Restrictions (CC&Rs). Similarly, the Proposed Project Alternative’s contribution to

Aesthetics/Light and Glare is less than significant when considered in connection with cumulative projects and will not result in a significant cumulative impact.

5.3.2 - Air Quality

The requirement for the assessment of cumulative impacts to Air Quality has evolved recently and now includes discussions of greenhouse gas emissions and global warming. There are no published thresholds for measuring the significance of a project's cumulative contribution to global climate change. Global climate change is an international phenomenon; the regulatory background and scientific data are changing rapidly. However, it is reasonable to apply the same requirements used for criteria pollutants; that significance is when a project results in a cumulatively considerable net increase of greenhouse gases (GHG).

The following four-tiered approach was used to assess cumulative air quality impacts.

- Consistency with the South Coast Air Quality Management District (SCAQMD) project specific thresholds for construction and operation;
- Project consistency with existing air quality plans;
- Assessment of the cumulative health effects of the pollutants; and
- Cumulative impact of global climate change.

Cumulative Health Impacts

The South Coast Air Basin is in non-attainment for ozone, 10-micron or less particulate matter (PM₁₀), Fine particulate matter (PM_{2.5}), and Carbon monoxide (CO), which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect the health of sensitive individuals (i.e., elderly, children, and the sick). Therefore, when the concentration of those pollutants exceed the standard, it is likely that some of the sensitive individuals of the population experience health effects.

The localized significance analysis (Section 4.2, Air Quality) demonstrated that during construction activities, no localized significance threshold was expected to be exceeded; therefore, the emissions of particulate matter, primarily in the form of fugitive dust, would not result in a significant cumulative health impact.

Long-term operational emissions are not expected to exceed SCAQMD's significance thresholds. Reactive organic gases (ROG) and Nitrogen oxides (NO_x) are precursors to ozone; and because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Proposed Alternative Project emissions of VOC and NO_x may still contribute to the background concentration of ozone but such contributions would not be considered cumulatively considerable.

The combination of ozone and PM₁₀ can aggravate health effects. PM_{2.5} is a component of PM₁₀. The ambient air quality standard for both PM₁₀ and PM_{2.5} are exceeded in the Basin. Operational

emissions of PM₁₀ and PM_{2.5} are not expected to exceed the regional significance threshold. Therefore, Proposed Alternative Project emissions may contribute to the background of those pollutants, but such contributions would not be considered cumulatively considerable.

Long-term health effects from residential woodburning are not expected to create a significant impact. Implementation of Mitigation Measures AQ-3 and AQ-4 (identified in Section 4.2, Air Quality) would create an environment where woodburning activities may contribute to the local wood smoke, but such contribution would not be considered cumulatively considerable. Thus, the Proposed Alternative Project's impact to Air Quality is less than significant when considered in connection with cumulative projects.

Greenhouse Gas (GHG) Emissions/Global Climate Change

As demonstrated in the Project Air Quality Analysis (refer to Appendix A) and the information presented in Section 4.2, the Proposed Alternative Project would not conflict with the attainment of the state's goals of reducing greenhouse gas emissions as dictated by AB 32. In addition, the Proposed Alternative Project will include design features that will further reduce the Proposed Alternative Project's contribution to global climate change. As such, the Proposed Alternative Project's potential to contribute considerably (either individually or cumulatively) to a global climate change impact through GHG emissions is less than significant.

5.3.3 - Biological Resources

Significant and unavoidable impacts from development of the Proposed Alternative Project related to Biological Resources have been identified for impacts to bald eagle. Mitigation Measure BR-4 requires that eagle perch locations be preserved in place upon completion of the Proposed Alternative Project, and that any development that may occur within the Proposed Alternative Project site and in the individual lots must avoid impacts to trees larger than 24 inches dbh and their root structures. Still, even with the implementation of Mitigation Measure BR-4 and the establishment of nearly 6 acres of Conservation/Open Space set aside, some trees will still need to be removed from the Proposed Alternative Project site to allow for the development of the 50 residential lots. This is considered a significant and unavoidable project-specific, as well as cumulative, impact.

Six special status plant species have been observed on the Proposed Alternative Project site: ash-gray Indian paintbrush; Parish's rock cress; Big Bear Valley woollypod; Bear valley phlox; purple monkeyflower; and silver-haired ivesia. Impacts to special status plants and plant communities will be reduced by implementation of Mitigation Measures BR-1a and BR-1b, which require creation of a 4.91-acre on-site conservation easement to preserve the 0.69-acre Pebble Plain and 4.91 acres of occupied ash-grey Indian paintbrush habitat, and creation of the 10-acre Dixie Lee Lane Pebble Plain Habitat conservation easement that will mitigate the remaining impacts to ash-grey Indian paintbrush at a 3:1 ratio. Implementation of these Mitigation Measures will reduce impacts to plant species to less than significant levels. When considered in connection with the development of the cumulative

projects, the impacts of the Proposed Alternative Project on special status plant species are less than significant.

A total of 0.69 acres of pebble plain habitat occurs within the Proposed Alternative Project 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 Proposed Alternative Project site. The 0.69-acre site is near 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 site would not result in the removal of any of the pebble plain that occurs on the project site. Further, in addition to the 0.69 acre of pebble plain habitat that will be preserved by Proposed Alternative Project implementation, an additional 10 acres of pebble plain habitat will be preserved through the purchase of the off-site mitigation area. When considered in connection with the development of the cumulative projects, the impacts of the Proposed Alternative Project on pebble plain habitat are less than significant.

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 cumulatively less than significant since this vegetation type is common throughout the San Bernardino Mountains and other mountain ranges in the region.

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.

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.

In sum, when considered in conjunction with the other cumulative projects, the Proposed Alternative Project would add incrementally to the cumulative significant impact on the bald eagle. Accordingly, cumulative impacts to the bald eagle are considered significant. The Proposed Alternative Project would not result in a significant cumulative impact to any other biological resource.

5.3.4 - Hydrology and Water Quality

For purposes of the drainage and water quality analysis, cumulative impacts are considered for projects in the same watershed as the project site, which would also drain into Big Bear Lake. For

purposes of this discussion, it is assumed that the list of cumulative proposed projects would all drain into the lake. 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 operate under an approved WQMP. 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.

It is assumed that any of the cumulative proposed projects would be required to comply with the same standards for urban runoff as outlined in the Santa Ana Region's NPDES Permit and Water Discharge Requirements, as a condition of approval. Each project would be required to prepare and implement a SWPPP for construction and a Water Quality Management Plan (WQMP) for long-term conditions after construction. Therefore, with adherence to the requirements of each project's respective NPDES permit and SWPPP requirements, no cumulative impacts would occur as a result of the Proposed Alternative Project.

5.3.5 - Land Use and Planning

Development of the site under the Proposed Alternative Project would not result in any cumulative significant land use impacts. The Proposed Alternative Project involves a request for a General Plan Amendment from Rural Living – 40 (minimum 40-acre lot sizes) (RL-40) to Single Family Residential with 20,000-square-foot minimum lot sizes (RS-20M). Upon approval of the General Plan Amendment, the Proposed Alternative Project will be developed consistent with the goals and policies of the Bear Valley Community Plan and the San Bernardino National Forest Land Use Management Plan and does not conflict with any applicable Habitat Conservation Plan (HCP) or any Community Conservation Plan.

The current land use designation of the Proposed Alternative Project site, RL-40, is a remnant of the previous General Plan. 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. Thus, the Proposed Alternative Project will have a lower density than other residential uses in the immediate area.

It is assumed that as other projects are implemented in the area, each new project will undergo the same review process as the Proposed Alternative Project, in order to preclude potential land use compatibility issues and planning policy conflicts. It is further assumed that cumulative development will progress in accordance with the City of Big Bear Lake and County of San Bernardino General

Plan and Development Code, and that each individual project would be analyzed independent of other land uses, as well as within the context of existing and planned developments, to ensure that the goals, objectives and policies of the General Plans are consistently upheld. Thus, the Proposed Project Alternative's impacts on Land Use and Planning are less than significant when considered in connection with cumulative projects, and will not result in a significant cumulative impact.

5.3.6 - Noise

Implementation of the Proposed Alternative Project, when combined with development of cumulative projects, would contribute to ambient noise levels in the vicinity. This increase would be due to both vehicular traffic noises along local roadways; noise associated with boating activities on the lake; and stationary noise sources from residences and other proposed land uses. The Proposed Alternative Project is required to reduce noise impacts to comply with County noise standards and to adhere to Development Code and General Plan requirements. The analysis of the Proposed Alternative Project showed that development of the project site would not contribute to ambient noise in excess of County noise standards and, therefore, does not contribute to a significant cumulative noise impact. The evaluation of noise impacts is typically determined on a project-by-project basis in order to focus mitigation on a particular noise source. As such, future development proposals within the County would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify appropriate attenuation measures where appropriate. Thus, the Proposed Project Alternative's contribution to Noise is less than significant when considered in connection with cumulative projects, and will not result in a significant cumulative impact.

5.3.7 - Public Services

The Proposed Alternative Project site is located in an area that is served by existing public services. Service providers have indicated that the Proposed Alternative Project's incremental impacts can be sufficiently mitigated through various fire protection measures, design features, an Emergency Operations plan, implementation of mitigation measures and the payment of development impact fees and property taxes by future homeowners. Therefore, the Proposed Alternative Project would not result in a significant impact to Public Services when considered in connection with cumulative projects and will not result in a significant cumulative impact.

5.3.8 - Traffic and Circulation

The Proposed Alternative Project would generate approximately 51 trips during AM peak hours, 51 trips during PM peak hours, and a total of 479 daily trips. The San Bernardino County Congestion Management Program (CMP) does not require analysis for projects that generate less than 250 peak hour trips; however, a long-range traffic analysis has been prepared for the Proposed Alternative Project.

A total of 17 cumulative projects were identified by the County of San Bernardino and City of Big Bear staff as affecting the study intersections. Other developments are projected to generate 15,111

trip-ends per day, with 1,455 vehicles per hour during the AM peak hour and 1,455 vehicles per hour during the PM peak hour.

For 2010 With Project traffic conditions, including traffic generated by cumulative projects, no new traffic signals are projected to be warranted as compared to 2010 Without Project conditions. The following study area intersections are currently operating at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

These intersections will continue to operate at unacceptable levels without improvements, but will improve to acceptable levels with the addition of traffic signals with no significant impact due to the Proposed Alternative Project.

For General Plan Buildout With Project Conditions, the following study area intersections would operate at an unacceptable level of service during both Friday PM and Sunday mid-day peak hours without improvements:

Big Bear Blvd (SR-18) (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- North Shore Drive (SR-38) (EW)

Stanfield Cut Off (NS) at:

- Big Bear Blvd (SR-18) (EW)

Driveway #1 (NS) at:

- North Shore Drive (SR-38) (EW)

Driveway #2 (NS) at:

- North Shore Drive (SR-38) (EW)

Traffic improvements are needed for existing conditions and projected conditions whether or not this Proposed Alternative Project is implemented. If needed improvements are installed, implementation of this Proposed Alternative Project will not significantly reduce the level of service off-site. Nevertheless, fair share costs for off-site improvements have been calculated in the amount of \$48,921 and will be paid as required by Mitigation Measure T-2.

The installation of on-site improvements as required by Mitigation Measure T-1, and the payment of fair share costs of improvements to impacted off-site roadway intersections will reduce traffic and circulation impacts related to the Proposed Alternative Project to a less than significant level.

According to the traffic study, all study intersections are expected to operate at a level of service C or better during peak hours for the scenario analyzed with improvements installed. Other cumulative projects would also presumably be subject to fair share costs for necessary intersection improvements; thus, when considered in connection with cumulative projects, the Proposed Alternative Project's cumulative impact on traffic and circulation is less than significant and will not result in a significant cumulative impact.

5.3.9 - Utilities

The Proposed Alternative Project site is located in an area that is served by utilities and has its own water wells on-site that, when developed, will be turned over to the Department of Water and Power (DWP) or County Service Area 53C to administer. Although water service is not presently provided to the project site, the site is immediately adjacent to the Fawnskin Water System, which is owned and operated by the Big Bear Lake Department of Water and Power (DWP). DWP has conducted a Water Feasibility Study (Alda, 2007) and has provided a conditional will-serve letter to the Applicant. Annexation to the DWP's authorized service area is one of three possible water service alternatives. Other alternatives include ownership and operation of the Proposed Alternative Project's water facilities by County Service Area 53C, or the construction of an on-site, 238,600 gallon reservoir and on-site booster station.

The Water Feasibility Study calculates the Water Demand for the Proposed Alternative Project (50-lot subdivision) as:

- 250 gallons per day per connection x 50 lots = 12,500 gallons per day;
- 12,500 gallons per day x 365 days/year = 4,562,500 gallons per year; and
- 4,562,500 gallons per year is equal to 14 acre-feet per year.

The Water Supply for the Proposed Alternative Project's 14 acre-feet per year demand will come from two groundwater basins. Based on two separate reports prepared by Geoscience in 2000 and 2003 (which are appended to the 2005 Final EIR) the annual groundwater recharge for Subarea A of the North Shore Subunit is between 14 and 44 acre-feet per year. In order to be as conservative as possible, the minimum recharge of 14 acre-feet per year will be utilized for Subarea A. There are also existing private wells that withdraw their water supply from Subarea A. Table 4-2 of DWP's 2006 Water Master Plan, prepared by CDM Engineering, shows the "Private Wells Production" within Subarea A as 5 acre-feet per year. Subtracting the 5 acre-feet from the minimum recharge for Subarea A of 14 acre-feet leaves 9 acre-feet available to supply the Proposed Alternative Project. Existing Project Well FP-2 is capable of pumping the 5.6 gallons per minute that will produce the 9-acre-feet per year from Subarea A and will also produce the Maximum Day Demand of 15.27 gpm

(Geoscience Support Services Inc, 2008, Results of Rehabilitation and Aquifer Testing Moon Camp Well FP2).

The remaining 5 acre-feet of Project Demand will be supplied from the Grout Creek Groundwater Subunit, Subarea D. Well FP-4, which was drilled by the developer in the northwest corner of the project site, will produce the 5 acre-feet per year, which is 3.1 gallons per minute (Harich Enterprises, 2009, Well FP4 Driller's Report). Geoscience (2003) reports the groundwater recharge of Grout Creek Subarea D to be between 32 and 99 acre-feet per year, with a midpoint of 66 acre-feet per year. At present, the only groundwater production in this subarea is from 11 private wells and is calculated to be 3 acre-feet per year. The additional 5 acre-feet per year of pumping from Well FP-4, combined with the existing 3 acre-feet per year of pumping, results in 8 acre-feet per year of total pumping, well below the low end of the recharge for Subarea D, which is 32 acre-feet per year.

The third existing, on-site well, FP-3, located to the east of the FP2 well, would not be equipped nor pumped, but will be used as a monitoring well to record groundwater levels.

In summary, the Proposed Alternative Project demand is 14 acre-feet per year. Well FP-2 is capable of producing 5.6 gallons per minute, which is 9 acre-feet per year from North Shore Subunit, Subarea A, and Well FP-4 will produce the 3.1 gallons per minute, which is 5 acre-feet per year from Grout Creek Subunit, Subarea D. Impacts to groundwater levels from pumping from FP-2 and FP-4 will be less than significant, with implementation of Mitigation Measure U1-b, which establishes annual groundwater production limits for FP-2 as 9 acre-feet per year, and FP-4 as 5 acre-feet per year, and implementation of Mitigation Measure U1-c, which stipulates that the grant deeds transferring ownership of Wells FP-2, FP-3 and FP-4 must include the pumping and extraction limitations included in Mitigation Measure U-1b. In addition, if the water purveyor desires to extract groundwater from Well FP-2 in excess of 9 acre-feet per year, the purveyor must conduct an independent environmental analysis and consider potential impacts at that time. Therefore, there is sufficient water available to serve the Proposed Alternative Project, and the impacts in regard to water supply for the project are considered less than significant with mitigation, when considered in connection with the development of other cumulative projects.

In addition to project design features and standard conditions and uniform code requirements that will be incorporated into the Project, Mitigation Measures U-1 through U-3 will be implemented to further mitigate utility impacts in the areas of solid waste, wastewater, natural gas, and electricity to the maximum extent feasible, which are less than significant with mitigation. Therefore, the Proposed Alternative Project would not add incrementally to a significant cumulative impact to utilities when considered in connection with the development of other cumulative projects and will not result in a significant cumulative impact.

5.3.10 - Summary

The evaluation of cumulative impacts has shown that all impacts associated with the Proposed Alternative Project can be reduced to less than significant levels except for Biological Resources, due to impacts to the bald eagle. When considered in conjunction with the other reasonably foreseeable cumulative projects, the Proposed Alternative Project would add incrementally to the cumulative significant impact to the bald eagle.

SECTION 6: OTHER CEQA ANALYSIS

This section includes a discussion of the following issues required by California Environmental Quality Act (CEQA) to be analyzed in a project Environmental Impact Report (EIR): Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented; Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented; and Growth Inducing Impacts.

6.1 - Significant Environmental Effects Which Cannot Be Avoided If the Proposed Project Is Implemented

CEQA Guidelines Section 15126.2 (b) requires that an EIR identify any significant environmental impacts that cannot be avoided. The analysis of potential environmental effects that could occur with implementation of the Proposed Alternative Project were addressed in Section 4, Environmental Impact Analysis, of the Revised and Recirculated Draft EIR. The findings of that analysis were that the Proposed Alternative Project - Moon Camp Residential Subdivision, consisting of 50 residential lots on approximately 62.43 acres, including approximately 8.6 acres of open space and other non-residential uses such as flood control and well sites, would have a significant impact on Biological Resources. Specifically, significant and unavoidable impacts to the bald eagle population were identified. Mitigation Measure BR-4 would mitigate impacts by requiring replacement of perch trees at a ratio of 5:1 with the creation of artificial perch trees along the shoreline designated open space. In addition, any development that may occur within the project site and in the individual lots must avoid impacts to these trees and their root structures. All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees. However, because the Proposed Alternative Project would result in a permanent change in existing conditions under which the bald eagle currently occupies the site and vicinity, impacts would remain significant and unavoidable.

No other impacts were identified that could not be mitigated to a less than significant level.

6.2 - Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented

CEQA Guidelines Section 15126.2(c) requires that an EIR include a discussion of Significant Irreversible Environmental Changes associated with the use of non-renewable resources during the initial and continued phases of a project. Approval of the Proposed Alternative Project would cause irreversible environmental changes, as follows:

- Commitment of land, which would be physically altered by the proposed development of the 50 residential lots and related infrastructure;

- Alteration of the project site through the removal of some trees and other vegetation to accommodate grading and construction;
- Commitment to residential and recreational uses which intensify land uses on the project site, thus causing incremental increases in vehicular activity in the surrounding circulation system, resulting in associated increases in air emissions and noise levels; and
- Utilization of various new raw materials, such as lumber, sand and gravel for construction. Some of these resources are already being depleted worldwide. The energy consumed in development and maintaining the site may be considered a permanent investment.

6.3 - Growth Inducing Impacts

CEQA Guidelines Section 15126.2(d) requires the evaluation of growth-inducing impacts of a proposed project. This discussion must address ways a project could encourage economic and population growth, or construction of additional housing in the surrounding area, either directly or indirectly. Also required is a discussion of project characteristics, which may encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Growth inducement can take many forms. A project can remove barriers, provide access, or eliminate other constraints, which encourage growth that has already been approved and anticipated through the General Plan process. The “planned” growth would be reflected in land use plans that have been developed and approved with underlying assumptions that adequate supporting infrastructure will be built. This is perhaps best described as accommodating or facilitating growth, but for the purpose of this section, the term “inducing” is used.

Implementation of the Proposed Alternative Project would result in the development of up to 50 residential lots. Using the City of Big Bear Lake average household size multiplier of 2.31 persons per household, the Proposed Alternative Project has the potential to increase Fawnskin’s population by approximately 115 persons at buildout, or approximately 100 less than under the Original Proposed Project (92 Lots). The potential population growth under the Proposed Alternative Project represents an approximate 28 percent increase over the Community’s permanent population estimate of 409 persons (2000) and an approximately 8 percent increase over the Community’s peak weekend/holiday period population of 1,428 persons. Implementation of the Proposed Alternative Project, like the Original Proposed Project, would be considered growth inducing inasmuch as it would result in the construction of additional housing, consequentially fostering population growth. However, based on the findings of the Environmental Impact Analysis (Section 4 of the Revised and Recirculated Draft EIR), the Proposed Alternative Project would not require the extension of new infrastructure, since infrastructure is available adjacent to the project site, and utility providers have indicated the ability to serve the site.

Overall, development under the Proposed Alternative Project would not require the substantial development of unplanned/unforeseen support uses and services. As a result, the Proposed Alternative Project would not result in significant growth-inducing impacts.

SECTION 7: ALTERNATIVES TO THE PROPOSED PROJECT

7.1 - Development of Alternatives

California Environmental Quality Act (CEQA) Guidelines Section 15126.6 requires consideration of alternatives to the Original Proposed Project in the Environmental Impact Report (EIR). More specifically, Section 15126.6 prescribes the following:

Alternatives to the Proposed Action - Describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

Purpose - Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21001.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objective, or would be more costly.

Selection of a Range of Reasonable Alternatives - The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination.

Evaluation of Alternatives - The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed but in less detail than the significant effects of the project as proposed.

Rule of Reason - The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. The EIR need examine in detail only those

alternatives that the lead agency determines could feasibly attain most of the basic objectives of the project while reducing one or more potential significant environmental impacts of the project to less than significant levels.

7.2 - Summary of the Original Proposed Project

In this section, the Original Proposed Project is evaluated against a range of alternatives, including the Proposed Alternative Project that is the subject of this Revised and Recirculated Draft EIR. Table 7-1 shows a summary of the components of the Original Proposed Project.

Table 7-1: Moon Camp Residential Development Project as Originally Proposed

Land Use	Land Plan	
	Acres	Dwelling Units
Residential	60.84	92
Roads to be Developed for the Project ¹	1.97	
Parking	0.45	
Water Wells	0.11	
Open Space/Conservation ²	0.0	
Minimum Lot Size/land use designation	7,200 sf RS-1	
Marina		103 slips
1-In the Original Proposed Project, all project roads would be private with the exception of SR-38. 2-No conservation areas are associated with the Original Proposed Project.		

7.2.1 - Project Objectives

The range of potential alternatives to the Original Proposed Project must include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The following objectives were identified for the Original Proposed Project:

- Provide up to 92 single-family residential lots to be developed as custom lots in the future;
- Establish single-family residential lots that are part of a planned development;
- Realign State Route 38 (SR-38) to improve the design of the roadway. More specifically, eliminate existing sharp curves of the roadway to minimize conflicts on SR-38 and Project access roads. The proposed roadway realignment would also create the opportunity for lakefront residential lots; and
- Provide marina facilities for residents of Moon Camp to access Big Bear Lake.

7.2.2 - Significant Environmental Impacts of the Original Proposed Project

In evaluating the Original Proposed Project, the 2005 Final EIR concluded that there would be a number of project-related impacts that remained significant and unavoidable. Sections 4.1 through 4.16 of the 2004 Draft EIR evaluated the Original Proposed Project summarized in Table 7-1. The conclusion of the environmental analysis was that the Original Proposed Project would produce significant and unavoidable impacts to the following:

Aesthetics/Light and Glare

Significant and unavoidable impacts related to Aesthetics/Light and Glare were identified for viewshed alterations involving existing residents to the north, east and west of the project site. The proposed 92 dwelling units would adversely impact existing views of the lake and surrounding mountain peaks from some existing adjacent residences. Additionally, significant and unavoidable impacts were identified for views from SR-38, a scenic highway, to the south and from the south shore of Big Bear Lake.

Air Quality

Air quality impacts that would remain significant and unavoidable following mitigation were:

- Construction Activities: Reactive organic gases (ROG) and Nitrogen oxides (NO_x) emissions during site preparation and construction from equipment and vehicles would be significant in the short-term; and
- Project Operations: Long-term use of the project site would result in an overall increase in the local and regional pollutant load due to direct impacts from vehicle emissions, and indirect impacts from electricity and natural gas consumption. Combined mobile and area source emissions would exceed South Coast Air Quality Management District (SCAQMD) thresholds of ROG, Carbon monoxide (CO) and 10-micron or less particulate matter (PM₁₀).

Biological Resources

Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to less than significant levels with the exception of the bald eagle. Impacts to this species were considered to be significant and unavoidable due to short-term construction noise and long-term residential noise, as well as the removal of potential perch trees, particularly in the westerly portion of the project site.

Hydrology and Drainage

Due to potential overdraft conditions (resulting from the 92 lots) for the groundwater basin associated with the North Shore Hydrologic Subunit, project and cumulative impacts were considered to be significant and unavoidable.

Public Services and Utilities

Due to the inability of water providers to confirm service to the Original Proposed Project, the project impacts, as well as cumulative impacts, were considered to be significant and unavoidable. This conclusion was further supported by the significant and unavoidable conclusion cited in Section 5.11, Hydrology and Drainage, due to potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit.

Based on the aforementioned guidelines, several alternatives were developed to reduce or eliminate these significant impacts. In addition to a “No Project” alternative, several different land use alternatives are evaluated in the 2005 Final EIR. Each intended to reduce potential project impacts that are of greatest concern to local residents and local governing agencies.

Subsequent to the circulation of the 2005 Final EIR, and partially in response to public comments received on the document, the Applicant made the decision to consider an alternative that would reduce the impacts that remained significant and unavoidable, and to address other concerns raised in comments received on the 2005 Final EIR. The Proposed Alternative Project, which is the subject of this Revised and Recirculated Draft EIR, is considered herein along with the other alternatives evaluated in the relation to the Original Proposed Project.

7.3 - No Project / No Development Alternative

7.3.1 - Description of Alternative

CEQA requires that a specific “No Project” alternative shall be evaluated along with its impacts compared to the proposed project. The “No Project” analysis essentially evaluates existing conditions on the site. Under this alternative, existing uses on the property would remain as is and the site would not be developed. Assuming that the site remains undeveloped, all significant project-specific impacts will be avoided. However, according to CEQA, if the environmentally superior alternative is the “No Project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

7.3.2 - Evaluation of Impacts Compared to the Original Proposed Project

Aesthetics

The aesthetic impacts associated with the Original Proposed Project would be significant and unavoidable. With the No Project alternative, the visual character of the site, which consists of undeveloped forested land, would remain unchanged, and no site grading would occur. Existing views of Big Bear Lake and the distant mountain ranges to the south would not be obstructed from the project site, which includes views from SR-38. The highway would not be realigned and no lakefront lots that would disrupt views of the lake from the highway would be developed. In addition, there would be no lighting impacts, as no new light sources would be introduced onto the project site.

Therefore, compared to the Original Proposed Project, the No Project/No Development Alternative would be considered environmentally superior.

Agricultural Resources

Impacts to agricultural resources would be less than significant with the Original Proposed Project, because no agricultural use of the site has previously occurred and the site is not designated as prime farmland. Similar to the Original Proposed Project, the No Project / No Development Alternative would not affect agricultural resources.

Air Quality

The air quality impacts (short-and long-term) associated with the Original Proposed Project would be significant and unavoidable. With the No Project Alternative, air quality impacts would be eliminated, as no new emissions sources would be introduced onto the project site via increased traffic, wood burning fireplaces/stoves, etc.

Biological Resources

The Original Proposed Project would have significant and unavoidable impacts related to biological resources, specifically for bald eagle perch sites. There would be no impacts to biological resources with the No Project/No Development Alternative, because no habitat would be disturbed. Therefore, the No Project/No Development Alternative would be considered environmentally superior to the Original Proposed Project.

Cultural Resources

Although with the Original Proposed Project the impacts to cultural resources would be less than significant with mitigation, there would be no impacts to cultural resources with the No Project/No Development Alternative. Therefore, the No Project/No Development Alternative would be considered environmentally superior to the Original Proposed Project.

Geology and Soils

With implementation of mitigation measures, standard regulations and Uniform Building Code (UBC), the impacts to geologic resources would be less than significant for the Original Proposed Project. The No Project/No Development Alternative would not involve development within the project area. Consequently, no new structures would be subject to seismic hazards, such as ground shaking or seismically induced settling, and no grading impacts could occur. Compared to the Original Proposed Project, the No Project/No Development Alternative would be considered environmentally superior.

Hazards

Although the hazards and hazardous materials impacts would be less than significant with the Original Proposed Project, there would be no hazards and hazardous materials impacts with the No Project/No Development Alternative.

Hydrology (Drainage and Water Quality)

The impacts to hydrology would be significant for the Original Proposed Project. The No Project/No Development Alternative would not develop the project area. Thus, no groundwater source would be extracted and no new sources of stormwater runoff would be created. Compared to the Original Proposed Project, the No Project/No Development Alternative would be environmentally superior.

Land Use and Relevant Planning

The land use impacts would be less than significant for the Original Proposed Project. According to the County of San Bernardino General Plan Map, the project site is designated as Rural Living (RL-40). Under the No Project/No Development Alternative, no development would occur onsite. The existing General Plan designation (RL-40) would remain and an amendment to the Official Land Use District would not be required. With no development occurring within the project site, it would remain in its existing undeveloped condition.

Mineral Resources

The site is not within an area designated by the State for locally important mineral resources and it does not lie within the County of San Bernardino's Mineral Resource Zone. No impacts to mineral resources would occur as a result of the project's implementation.

Noise

The noise impacts associated with the Original Proposed Project would be less than significant with mitigation. However, the noise increases created by project-related traffic and watercraft on Big Bear Lake would not occur under the No Project Alternative.

Population and Housing

Although the impacts to Population and Housing would be less than significant with the Original Proposed Project, there would be no impacts with the No Project/No Development Alternative.

Public Services

The public services impacts associated with the Original Proposed Project would be less than significant.

Fire and Police Protection. The No Project/No Development Alternative would not involve new residences; thus, no new demand for fire and police protection services over existing conditions would be required.

Schools. The No Project/No Development Alternative would not generate additional schoolchildren and would not place demands on the school district serving the site. Thus, the No Project Alternative would not strain current educational resources.

Libraries. The No Project/No Development Alternative would not generate additional residents and would not place demands on libraries serving the project site. Thus, the No Project Alternative would not impact current resources.

Recreation

Although the recreation impacts would be less than significant with the Original Proposed Project, there would be no recreation impacts with the No Project/No Development Alternative. Since no new residents would be generated by the No Project Alternative, no new demands would be placed on Big Bear Lake or local and regional park facilities in the area. The No Project Alternative would retain existing on-site paths/trail, although as the project site is private property, these paths/trails are unauthorized and public access on the site and to the lakefront would not be assured since the project site is private property.

Traffic and Circulation

The traffic impacts associated with the Original Proposed Project would be less than significant with mitigation. The No Project/No Development Alternative would not result in the realignment of SR-38 and would not create new roads within the project area. The No Project Alternative would not increase project-related traffic above current levels.

Utilities

Water. The utility impacts associated with the Original Proposed Project would be significant and unavoidable for water services. Under the No Project/No Development Alternative the project site would not be developed. Consequently, the need to develop a water source on-site and extend water lines to the project site would not occur under the No Project Alternative.

Sewer. The utility impacts associated with the Original Proposed Project would be less than significant for sewer services. Under the No Project/No Development Alternative the project site would not be developed. Consequently, the need to extend sewer lines to the project site would not occur under the No Project Alternative.

Solid Waste. The utility impacts associated with the Original Proposed Project would be less than significant for solid waste services. The No Project/No Development Alternative would not produce any solid waste that could not impact existing County landfills. The No Project/No Development Alternative would be considered environmentally superior to the Original Proposed Project.

Utilities. The utility impacts associated with the Original Proposed Project would be less than significant for other utility services, like natural gas and electricity services. The No Project/No Development Alternative would not increase the demand for utility services beyond existing levels.

7.3.3 - Ability to Meet Project Objectives

The No Project/No Development Alternative would not have an impact on the environment because no development of the site would occur. The No Project Alternative would avoid any potential impacts resulting from construction and operation of the Original Proposed Project. However, the No Project Alternative is not consistent with the primary project objectives, which are to provide single-family residential lots to be developed with custom homes and to realign SR-38 to allow lakefront homes and a private marina for homeowners use.

7.3.4 - Summary

The No Project Alternative is the environmentally superior to the Original Proposed Project, as all project specific impacts would be avoided. However, according to CEQA, if the environmentally superior alternative is the “no project” alternative, an EIR shall also identify an environmentally superior alternative among the other alternatives.

7.4 - No Project / Existing Designation Alternative

7.4.1 - Description of Alternative

Implementation of the No Project/Existing Designation Alternative would be in accordance with the existing Official Land Use District Rural Living-40 (40-acre minimum lot size). At 62.43 acres, the site could be developed with up to 1.5 residential lots. Although only one dwelling unit could be realized within the site, for the purpose of this discussion, 1.5 units will be used. This Alternative would be less intensive than the Original Proposed Project. Approximately three persons (1.5 housing units x 2.31 persons/household) would be added to the population of the Community of Fawnskin. It is further noted that in addition to a single-residential structure, other uses can be allowed including those in the “Additional Uses” section of the County Development Code, subject to a Conditional Use Permit. The following discussion evaluates the potential environmental impacts associated with the No Project/Existing Designation Alternative as compared to impacts from the Original Proposed Project.

7.4.2 - Evaluation of Impacts Compared to the Original Proposed Project

Aesthetics

The aesthetic impacts associated with the Original Proposed Project would be significant and unavoidable. The visual character of the site, which consists of undeveloped forest land, would be slightly modified under the No Project/Existing Designation Alternative. Given that this Alternative proposes only 1.5 residential lots, no marina and no realignment of SR-38, fewer impacts are anticipated with respect to landform alteration, aesthetics, light and glare. This Alternative would remove substantially fewer trees. With the No Project/Existing Alternative, SR-38 would not be realigned and the area would largely maintain the views of Big Bear Lake and distant mountain

ranges to the south. Big Bear Lake would remain in its current aesthetic condition, as no recreational facilities on the lake would occur with this Alternative.

Agricultural Resources

Impacts to agricultural resources would be less than significant with the Original Proposed Project, because no agricultural use of the site has previously occurred and the site is not designated as prime farmland. Therefore, this Alternative would similarly not affect agricultural resources.

Air Quality

The air quality impacts (short-and long-term) associated with the Original Proposed Project would be significant and unavoidable. With this Alternative, fewer vehicular trips would be generated, which would also produce less mobile and energy source emissions. With fewer homes and residents, fewer emissions would be generated. This Alternative would result in less local and regional air pollutant emissions. Additionally, construction-related emissions from the realignment of SR-38 would not occur with this Alternative.

Biological Resources

The Original Proposed Project would have significant and unavoidable impacts related to biological resources, specifically for bald eagle perch sites. With the development of only 1.5 residential lots, the No Project/Existing Designation Alternative would slightly impact existing biological resources. This Alternative would substantially reduce the impacts to habitat (perch trees for the bald eagle).

Cultural Resources

Although with the Original Proposed Project, the impacts to cultural resources would be less than significant with mitigation, and there would be even fewer impacts to cultural resources with the No Project/Existing Designation Alternative because less land would be disturbed.

Geology and Soils

With implementation of mitigation measures, standard regulations and UBC, the impacts to geologic resources would be less than significant for the Original Proposed Project. Under this Alternative, less residents and structures would be exposed to seismic hazards. The Original Proposed Project would involve grading for the realignment of SR-38 and for structures to the north and south (lakefront) of SR-38. Grading required for this Alternative would occur on a much smaller scale and only for development of 1.5 residential lots.

Hazards and Hazardous Materials

Although the hazards and hazardous materials impacts would be less than significant with the Original Proposed Project, there would be even fewer hazards and hazardous materials impacts with the No Project/Existing Designation Alternative.

Hydrology (Drainage and Water Quality)

The impacts to hydrology would be for the Original Proposed Project. The No Project/Existing Designation Alternative would involve less development in the project area. Therefore, the amount of impermeable surface area (i.e., roads, rooftops, driveways, etc) would be greatly reduced with this Alternative. Additionally, this Alternative would involve fewer residences and vehicles on-site, thus reducing sources of stormwater pollution runoff. Compared to the Original Proposed Project, the No Project/Existing Designation Alternative would be considered environmentally superior.

Land Use and Relevant Planning

The land use impacts would be less than significant for the Original Proposed Project with adherence to development standards associated with the land use designation of low-density residential (7,200-square-foot lots). Currently, the project site is designated as RL-40, with minimum 40-acre lots. Under the No Project/Existing Designation Alternative, only 1.5 dwelling units would be allowed. Under this Alternative, the existing General Plan designation (RL-40) would remain and an amendment to the Official Land Use District would not be required.

Mineral Resources

The site is not within an area designated by the State for locally important mineral resources and it does not lie within the County of San Bernardino's Mineral Resource Zone. No impacts to mineral resources would occur if the site was developed. Therefore, there would be no impact to resources under either development scenario.

Noise

The noise impacts associated with the Original Proposed Project would be less than significant with mitigation. Given that approximately 90 fewer residential lots would occur under this Alternative, long-term noise levels associated with occupancy and vehicular traffic would be less than the noise levels under the Original Proposed Project. This Alternative does not include new marina facilities, which in turn, would not produce new noise sources from watercraft utilizing Big Bear Lake. Additionally, construction-related noise from site development and realignment of SR-38 would not occur with this Alternative.

Population and Housing

Although the impacts to Population and Housing would be less than significant with the Original Proposed Project, the impacts would be even less with the No Project/Existing Designation Alternative.

Public Services

The public services impacts associated with the Original Proposed Project would be less than significant.

Fire and Police Protection. The No Project/Existing Designation Alternative would result in development of 1.5 residential lots on the project site; thus, a nominal increase in the demand for fire and police protection services would occur over existing conditions. Similar to the Original Proposed Project, this Alternative would not result in the need for expansion or construction of police or fire protection facilities. However, compared to the Original Proposed Project, the number of service calls would decrease with this Alternative.

Schools. The No Project/Existing Designation Alternative would generate approximately one school child (.21 students x 1.5 dwelling units). This is substantially fewer students that would be generated with the Original Proposed Project. Since the No Project/Existing Designation Alternative would generate fewer students, fewer impacts would be placed on existing educational resources.

Libraries. The No Project/Existing Designation Alternative would generate approximately three additional residents; however, as with the Original Proposed Project, the addition of new residents would not significantly impact libraries serving the project site.

Recreation

Impacts to recreation would be less than significant with the Original Proposed Project.

Approximately three new residents would be added to the Fawnskin area with this Alternative. This nominal increase in population would not adversely affect park facilities in the area. Unlike the Original Proposed Project, this Alternative would not include the construction of the marina. This Alternative would retain existing on-site paths/trails. However, public access on the project site and to the lakefront would not be assured since the Project site is private property.

Traffic and Circulation

The traffic impacts associated with the Original Proposed Project would be less than significant with mitigation. This Alternative would greatly reduce project related trips. In addition, the No Project/Existing Designation Alternative does not propose realignment of SR-38. Therefore, the General Plan Circulation Element would not have to be amended. Similar to the Original Proposed Project, this Alternative would contribute to the existing intersection deficiency at Stanfield Cutoff and Big Bear Boulevard, but to an insignificant degree, since it would likely generate less than 10 trips per day. This Alternative would result in substantially fewer new trips on the local road system when compared to the Original Proposed Project.

Utilities

Water. The utility impacts associated with the Original Proposed Project would be significant and unavoidable for water services. Given that the No Project/Existing Designation Alternative would result in development of only 1.5 residential lots on the project site, and would place a reduced demand on water resources.

Sewer. The utility impacts associated with the Original Proposed Project would be less than significant for sewer services. Given that the No Project/Existing Designation Alternative would result in development of 1.5 residential lots on the project site, the need to extend sewer lines to the project site would be less of an impact than with the Original Proposed Project. Alternatively, the 1.5 units that could be built would likely use septic instead of a tying into the sewer system. This Alternative would require a reduced demand on sewer services.

Solid Waste. The utility impacts associated with the Original Proposed Project would be less than significant for solid waste services. The No Project/Existing Designation Alternative would produce less solid waste when compared to the Original Proposed Project. However, this Alternative, as with the Original Proposed Project, would not result in significant impacts to existing landfills. Nonetheless, 1.5 residents would generate substantially less solid waste.

Utilities. The utility impacts associated with the Original Proposed Project would be less than significant for other utility services, like natural gas and electricity services. The No Project/Existing Designation Alternative would result in a nominal increase in demand for utility services (i.e., gas, electric) beyond existing levels and at levels less than those of the Original Proposed Project. The need for modification and addition of utilities into the project site would be less than for the Original Proposed Project.

7.4.3 - Ability to Meet Project Objectives

The No Project/Existing Designation Alternative would substantially decrease the intensity of the environmental impacts associated development of the Original Proposed Project. By not realigning SR-38, the project site would maintain the majority of its existing visual character. The No Project/Existing Designation Alternative would substantially reduce all environmental impacts associated with the Original Proposed Project. However, this Alternative does not meet the objectives established for the Original Proposed Project, which are to provide a marina, realign SR-38 to allow lakefront homes and up to 92 single-family residential lots that would ultimately be developed with custom homes.

7.4.4 - Summary

Although the No Project/ Existing Designation Alternative would in no way fulfill the project objectives, it is considered to be an environmentally superior alternative because it would eliminate the significant unavoidable impacts associated with the Original Proposed Project.

7.5 - Reduced Density, Without Road Realignment and Without Marina Alternative

7.5.1 - Description of Alternative

For the Reduced Density, Without Road Realignment and Without Marina Alternative, development of 62 residential lots and associated infrastructure would occur on the north side of the existing

SR-38. SR-38 would not be realigned and no residential development would occur to the south of the highway. The land area south of SR-38, along the lakefront, would be retained in its current state. Approximately 143 persons (62 housing units x 2.31 persons/household) would be added to the population of the Community of Fawnskin.

7.5.2 - Evaluation of Impacts Compared to the Original Proposed Project

Aesthetics

The aesthetic impacts associated with the Original Proposed Project would be significant and unavoidable. As with the Original Proposed Project, the visual character of the site, which consists of undeveloped forest land, would be modified under the Reduced Density, Without Road Realignment and Without Marina Alternative. Given that this Alternative involves development to the north of SR-38 and no realignment of SR-38, fewer Aesthetic impacts are anticipated with respect to landform alteration, aesthetics, light and glare. Since this Alternative does not include development south of SR-38, views of Big Bear Lake from SR-38 would be retained. Although some existing views of the Lake and mountains to the south, from Flicker Road, may still be obstructed with this Alternative, surrounding uses to the east and west would retain views of the Lake and mountains. The scaled back nature of this Alternative would also reduce, but not eliminate the light and glare impacts.

Agricultural Resources

Impacts to agricultural resources would be less than significant with the Original Proposed Project, because no agricultural use of the site has previously occurred and the site is not designated as prime farmland. Therefore, the Reduced Density, With Project Redesign Alternative would similarly not affect agricultural resources.

Air Quality

The air quality impacts (short-and long-term) associated with the Original Proposed Project would be significant and unavoidable. Under the Reduced Density, Without Road Realignment and Without Marina Alternative, fewer residences would be generated. Therefore, less mobile (vehicular trips) and energy source emissions would be generated over the Original Proposed Project. In addition, with fewer homes, less particulate emissions would be generated. Overall, this Alternative would result in fewer local and regional air pollutant emissions. Additionally, construction-related emissions from the realignment of SR-38 would not occur with this Alternative.

Biological Resources

The Original Proposed Project would have significant and unavoidable impacts related to biological resources, specifically for bald eagle habitat. With this Alternative, the conversion of undeveloped forest land and impacts to biological resources north of SR-38 would be similar to those of the Original Proposed Project. However, this Alternative would not modify existing habitat to the south of SR-38. Therefore, no physical impacts to biological resources would occur south of SR-38.

Because less land disturbance would occur with this Alternative, compared to the Original Proposed Project, fewer trees would be removed.

Cultural Resources

Although with the Original Proposed Project the impacts to cultural resources would be less than significant with mitigation, there would be fewer impacts to cultural resources with the Reduced Density, Without Road Realignment and Without Marina Alternative because less land would be disturbed.

Geology and Soils

With implementation of mitigation measures, standard regulations and UBC, the impacts to geologic resources would be less than significant for the Original Proposed Project. Although the geologic impacts would be less than significant with the Original Proposed Project, there would be even fewer geological impacts with the Reduced Density, Without Road Realignment and Without Marina Alternative because less land would be disturbed. Under this Alternative, fewer residents and structures would be exposed to seismic hazards. This Alternative does not propose realignment of SR-38; therefore, the grading associated with the realignment would not occur. Additionally, the area south of SR-38 would not be developed, which further reduces that amount of required grading. Grading required for this Alternative would occur for development of approximately 62 residential lots north of SR-38. The grading associated with this Alternative would create similar potential impacts from slope stability as the Original Proposed Project, since both the Original Proposed Project and this Alternative would allow the development of homes on the steepest portions (northern half) of the site.

Hazards and Hazardous Materials

Although the hazards and hazardous materials impacts would be less than significant with the Original Proposed Project, there would be even fewer hazards and hazardous materials impacts with the Reduced Density, Without Road Realignment and Without Marina Alternative.

Hydrology (Drainage and Water Quality)

The impacts to hydrology would be significant for the Original Proposed Project. The Reduced Density, Without Road Realignment and Without Marina Alternative would involve less development within the project area and the amount of impermeable surface area (i.e., roads, driveways, etc) would be less than the Original Proposed Project. Additionally, this Alternative would involve fewer residences and vehicles on-site, thus reducing pollution sources of stormwater runoff.

Land Use and Relevant Planning

The land use impacts would be less than significant for the Original Proposed Project with adherence to the development standards established for the Low Density Residential (RS) land use designation. Currently, the project site is designated as RL-40. Like the Original Proposed Project, under the

Reduced Density, Without Road Realignment and Without Marina Alternative, development onsite would not be consistent with the RL-40 land use designation and a general plan amendment would be required. Development of the Reduced Density, Without Road Realignment and Without Marina Alternative would include 62 residential lots and associated infrastructure and would also be developed under the Single Residential (RS-7200) land use designation.

This Alternative would not include realignment of SR-38, thus no amendment to the Circulation Element of the General Plan would occur. Similar to the Original Proposed Project, development standards under this Alternative would be required to be consistent with the provisions of the Geologic Hazard, Fire Safety, Biotic Resources and Scenic Resources Overlay District provisions/requirements in the San Bernardino Development Code. Per the provisions of the Geologic Hazard, Fire Safety, and Biotic Resources Overlay Districts, either the Original Proposed Project or this Alternative would result in less than significant impacts, with compliance of the development standards outlined in the Development Code and mitigation measures referenced in the applicable technical reports (i.e., geology/soils and biological reports). This Alternative would not result in obstructed views of Big Bear Lake and distant mountain ranges from the lakefront and/or SR-38. Hence, this Alternative would be consistent with development standards set forth in the Scenic Resources Overlay District.

Mineral Resources

The site is not within an area designated by the State for locally important mineral resources and it does not lie within the County of San Bernardino's Mineral Resource Zone. No impacts to mineral resources would occur as a result of the project's implementation.

Noise

The noise impacts associated with the Original Proposed Project would be less than significant with mitigation. Given that approximately 30 fewer residential lots would occur under this Alternative, long-term noise levels associated with vehicular traffic would be less than the noise levels under the Original Proposed Project. Additionally, construction-related noise from the realignment of SR-38 would not occur with this Alternative.

Population and Housing

Although the impacts to Population and Housing would be less than significant with the Original Proposed Project, the impacts would be even less with the Reduced Density, Without Road Realignment and Without Marina Alternative.

Public Services

The public services impacts associated with the Original Proposed Project would be less than significant.

Fire and Police Protection. The Reduced Density, Without Road Realignment and Without Marina Alternative would result in development of 62 residential lots, as compared to 92 residential lots with the Original Proposed Project. Any development of the site would increase the demand for fire and police protection services over existing conditions. Similar to the Original Proposed Project, this Alternative would not result in the need for expansion or construction of police or fire protection facilities. However, compared to the Original Proposed Project, the number of service calls would be less with this Alternative.

Schools. The Reduced Density, Without Road Realignment and Without Marina Alternative would generate approximately 13 schoolchildren (.21 x 62 dwelling units). This is substantially fewer students than would be generated with the Original Proposed Project. Since this Alternative would generate fewer students, less impacts would be placed on existing educational resources.

Libraries. The Reduced Density, Without Road Realignment and Without Marina Alternative would generate approximately 133 residents; however, as with the Original Proposed Project, the addition of these new residents would not significantly impact libraries serving the project site.

Recreation

Although the recreation impacts would be less than significant with the Original Proposed Project, there would be even less recreation impacts with the Reduced Density, Without Road Realignment and Without Marina Alternative. This Alternative does not include residential development along the lakefront, so the lakefront would remain in its existing condition. Public access on the site and to the lakefront would not be assured since the Project site is private property. Neither this Alternative, nor the Original Proposed Project would increase the use of existing parks or recreational facilities such that substantial physical deterioration would occur.

Traffic and Circulation

The traffic impacts associated with the Original Proposed Project would be less than significant with mitigation. The Reduced Density, Without Road Realignment and Without Marina Alternative does not include realignment of SR-38. Therefore, no amendment to the County's Circulation Element would be required. Because of the reduction in the number of residential lots, this Alternative would result in fewer new trips on the local road system when compared to the Original Proposed Project. However, both the Original Proposed Project and this Alternative would contribute to the existing intersection deficiency at Stanfield Cutoff and Big Bear Boulevard. Both the Original Proposed Project and this Alternative would be required to pay "fair-share" fees to mitigate respective contributions to the existing intersection deficiency.

Utilities

Water: The utility impacts associated with the Original Proposed Project would be significant and unavoidable for water services. Given that the Reduced Density, Without Road Realignment and

Without Marina Alternative would result in development of 62 residential lots on the project site, the need to increase water supply and storage facilities would be less of an impact than with the Original Proposed Project, but the impact would still be potentially significant. Because this Alternative proposes a reduction in the number of residential lots proposed, this Alternative would result in a reduced impact on existing water resources. In addition, because this Alternative includes a substantial reduction in the number of residential lots that would be developed, compared to the Original Proposed Project, the Reduced Density, Without Road Realignment and Without Marina Alternative would be considered environmentally superior.

Sewer. The utility impacts associated with the Original Proposed Project would be less than significant for sewer services. Given the substantial reduction in the number of residential lots that would be developed under this Alternative, this Alternative would place a reduced demand on sewer services.

Solid Waste. The utility impacts associated with the Original Proposed Project would be less than significant for solid waste services. The Reduced Density, Without Road Realignment and Without Marina Alternative would produce less solid waste when compared to the Original Proposed Project. However, this Alternative, as with the Original Proposed Project, would not create impacts to existing landfills.

Utilities. The utility impacts associated with the Original Proposed Project would be less than significant for other utility services, like natural gas and electricity services. The Reduced Density, Without Road Realignment and Without Marina Alternative would increase the demand for utility services (i.e., gas, electric) beyond existing levels, but at levels less than those of the Original Proposed Project. The need for modification and addition of utilities would be less than for the Original Proposed Project.

7.5.3 - Ability to Meet Project Objectives

The Reduced Density, Without Road Realignment and Without Marina Alternative would decrease the intensity of the environmental impacts associated with the proposed construction and operation of the Original Proposed Project. By not realigning SR-38, with this Alternative, the site would maintain the existing forested nature and visual character south of SR-38. Views of the Lake and mountain ranges would be retained from SR-38 and from uses to the east and west of the project site. This Alternative does not meet the primary objectives for the proposed Project, to provide a marina facility and realignment of North Shore Drive in order to improve the design of the roadway, which would also allow for lakefront lots to be developed. Therefore, this Alternative partially meets the project objectives, but falls short with only 62 residential lots, no realignment of SR-38 to create lakefront lots and no marina.

7.5.4 - Summary

The Reduced Density, Without Road Realignment and Without Marina Alternative would reduce but not eliminate all environmental impacts associated with the Original Proposed Project. However, because some impacts can be eliminated or substantially reduced under this alternative, it is considered to be environmentally superior to the Original Proposed Project.

7.6 - Reduced Density, Utilizing Proposed Project Redesign Alternative

7.6.1 - Description of Alternative

For the Reduced Density, utilizing the proposed Project Redesign Alternative, development of 66 residential lots and associated infrastructure would occur on the project site and SR-38 would be realigned. Under this Alternative, 45 lots would be developed north of the repositioned SR-38, and 21 lots would be developed on the south of the highway. This Alternative would include a marina facility, with 72 boat slips. Approximately 153 persons (66 housing units x 2.31 persons/household) would be added to the population of the Community of Fawnskin.

7.6.2 - Evaluation of Impacts Compared to the Proposed Project

Aesthetics

The aesthetic impacts associated with the Original Proposed Project would be significant and unavoidable. As with the Original Proposed Project, the visual character of the site, which consists of undeveloped forest land, would be modified under the Reduced Density, With Project Redesign Alternative. Given that this Alternative proposes development to the north and south of SR-38 and includes the realignment of SR-38, similar impacts are anticipated with respect to landform alteration, aesthetics and light and glare. Since this Alternative would involve decreased residential densities to the south of SR-38, views of Big Bear Lake and the distant mountain ranges from SR-38 would not be as obstructed when compared to the Original Proposed Project. Residential lot development associated with this Alternative, as well as the Original Proposed Project, would limit public access to the lakefront and change the visual character of the site. However, since the project site is privately owned, public access is not assured under existing conditions. As with the Original Proposed Project, this Alternative would alter the visual character of the lake with implementation of the marina facilities. Thus, similar to the Original Proposed Project, the Reduced Density, With Project Redesign Alternative would change the visual character of the project area and adversely impact views of the lake and the distant mountain ranges.

Agricultural Resources

Impacts to agricultural resources would be less than significant with the Original Proposed Project, because no agricultural use of the site has previously occurred and the site is not designated as prime farmland. Therefore, the Reduced Density, With Project Redesign Alternative would similarly not affect agricultural resources.

Air Quality

The air quality impacts (short-and long-term) associated with the Original Proposed Project would be significant and unavoidable. Because of the reduction in the number of residential lots that would be developed, fewer vehicular trips would be generated under this Alternative, which would produce less mobile and energy source emissions. Additionally, with fewer homes, less particulate emissions would be generated. This Alternative would result in fewer local and regional air pollutant emissions.

Biological Resources

The Original Proposed Project would have significant and unavoidable impacts related to biological resources, specifically for bald eagle habitat. The Reduced Density, With Project Redesign Alternative would impact existing on-site biological resources similar to the Original Proposed Project but to a lesser degree. Both the Original Proposed Project and this Alternative involves tree removal during individual lot development and construction of custom homes. Additionally, both the Original Proposed Project and this Alternative would remove approximately one-fourth of the existing 2,760 trees for realignment of SR-38. However, because fewer lots will be created that could impact bald eagle habitat, the Reduced Density, With Project Redesign Alternative is considered environmentally superior to the Original Proposed Project.

Cultural Resources

Although with the Original Proposed Project the impacts to cultural resources would be less than significant with mitigation, there would be fewer impacts to cultural resources with the Reduced Density, With Project Redesign Alternative because less land disturbance would occur. Therefore, the Reduced Density, With Project Redesign Alternative would be considered environmentally superior to the proposed Project.

Geology and Soils

With implementation of mitigation measures, standard regulations and UBC, the impacts to geologic resources would be less than significant for the Original Proposed Project. Under this Alternative, fewer residents and structures would be exposed to seismic hazards than would with the Original Proposed Project. Both this Alternative and the Original Proposed Project would involve grading for the realignment of SR-38 and for structures to the north and south (lakefront) of SR-38. Grading required for this Alternative would occur for development of approximately 66 residential lots to the north and south of SR-38. The amount of grading associated with this Alternative would create similar potential impacts from slope stability as the Original Proposed Project, since both would develop homes on the steepest portions (northern half) of the site.

Hazards and Hazardous Materials

Although the hazards and hazardous materials impacts would be less than significant with the Original Proposed Project, there would be even fewer hazards and hazardous materials impacts with the Reduced Density, With Project Redesign Alternative.

Hydrology (Drainage and Water Quality)

The impacts to hydrology would be significant for the Original Proposed Project. The Reduced Density, With Project Redesign Alternative would involve less development in the project area than the Original Proposed Project. The amount of impermeable surface area (i.e., residences, driveways, etc) would be reduced with this Alternative because fewer homes will cover the same amount of land. Additionally, this Alternative would involve fewer residences and vehicles onsite, which would reduce pollution sources of stormwater runoff.

Land Use and Relevant Planning

The land use impacts would be less than significant for the Original Proposed Project. As with the Original Proposed Project, this Alternative would require a general plan amendment. Currently, the project site is designated as RL-40. Under the Reduced Density, With Project Redesign Alternative, as well as the Original Proposed Project, development onsite would not be consistent with the RL-40 land use designation. Development of this Alternative would include 66 residential lots and associated infrastructure under the RS-7200 land use designation. This Alternative would include realignment of SR-38, thus an amendment to the Circulation Element of the General Plan would be required. Similar to the Original Proposed Project, development standards under this Alternative would be required to be consistent with the provisions of the Geologic Hazard, Fire Safety, Biotic Resources and Scenic Resources Overlay Districts in the San Bernardino Development Code. Per the provisions of the Geologic Hazard, Fire Safety, and Biotic Resources Overlay Districts, either Alternative would result in similar less than significant impacts with compliance of the development standards outlined in the Development Code and identified mitigation measures in the appropriate technical reports (i.e., geology/soils and biological reports). Similar to the Original Proposed Project, this Alternative would result in obstructed views of Big Bear Lake. Thus, this Alternative would not be consistent with the developments standards set forth in the Scenic Resources Overlay District. Therefore, impacts associated with this Alternative would be similar to those of the Original Proposed Project.

Mineral Resources

The site is not within an area designated by the State for locally important mineral resources and it does not lie within the County of San Bernardino's Mineral Resource Zone. No impacts to mineral resources would occur as a result of the project's implementation.

Noise

The noise impacts associated with the Original Proposed Project would be less than significant with mitigation. Given that 26 fewer residential lots would occur under this Alternative, long-term noise levels associated with vehicular traffic would be reduced with this Alternative. Additionally, this Alternative would include a 72-boat slip marina facility, compared to a 100-boat slip marina with the Original Proposed Project, which in turn, would produce less new noise sources from watercraft utilizing Big Bear Lake.

Population and Housing

Although the impacts to Population and Housing would be less than significant with the Original Proposed Project, there would be even fewer impacts to Population and Housing with the Reduced Density, With Project Redesign Alternative.

Public Services

The public services impacts associated with the Original Proposed Project would be less than significant.

Fire and Police Protection. The Reduced Density, With Project Redesign Alternative would result in development of 66 residential lots, as compared to 92 residential lots within the Original Proposed Project. Any development of the site would result in a nominal increase in the demand for fire and police protection services over existing conditions. Similar to the Original Proposed Project, this Alternative would not result in the need for expansion or construction of police or fire protection facilities. However, compared to the Original Proposed Project, the number of service calls would decrease with this Alternative.

Schools. The Reduced Density, with Project Redesign Alternative would generate approximately 14 schoolchildren (.21 x 66 dwelling units). This is substantially fewer students than would be generated with the Original Proposed Project. Since this Alternative would generate fewer students, less impacts would be placed on existing educational resources.

Libraries. The Reduced Density, With Project Redesign Alternative would generate approximately 153 residents; however, as with the Original Proposed Project, the addition of these new residents would not significantly impact libraries serving the project site.

Recreation

Impacts to recreation would be less than significant with the Original Proposed Project. Similar to the Original Proposed Project, this Alternative would include residential development along the lakefront. The shoreline/lakefront would be developed with residential uses (21 dwelling units) and would include marina facilities which would be located south of SR-38. However, public access on the site and to the lakefront would not be assured since the Project site is a private property. This Alternative would include a 72-boat slip marina facility. Neither this Alternative nor the Original Proposed Project would increase the use of existing parks or recreational facilities such that substantial physical deterioration would occur.

Traffic and Circulation

The traffic impacts associated with the Original Proposed Project would be less than significant with mitigation. This Alternative also includes realignment of SR-38. As compared to the Original Proposed Project, the Reduced Density, With Project Redesign Alternative would generate less project-related traffic. This Alternative would result in fewer new trips on the local road system when

compared to the Original Proposed Project. However, both the Original Proposed Project and this Alternative would contribute to the existing intersection deficiency at Stanfield Cutoff and Big Bear Boulevard. The Original Proposed Project and this Alternative would be required to pay “fair-share” fees to mitigate their respective contribution to the existing intersection deficiency.

Utilities

Water. The utility impacts associated with the Original Proposed Project would be significant and unavoidable for water services. Given that the Reduced Density, With Project Redesign Alternative would result in development of 66 residential lots on the project site, the need to increase water supply and storage facilities would be less of an impact than with the Original Proposed Project. Because this Alternative proposes a reduction in the number of residential lots that would be developed, this Alternative would result in a reduced impact on water resources.

Sewer. The utility impacts associated with the Original Proposed Project would be less than significant for sewer services. Given the reduction in the number of residential lots that could be developed with this Alternative, this Alternative would place a reduced demand on sewer services over the Original Proposed Project.

Solid Waste. The utility impacts associated with the Original Proposed Project would be less than significant for solid waste services. The Reduced Density, With Project Redesign Alternative would produce less solid waste when compared to the Original Proposed Project.

Utilities. The utility impacts associated with the Original Proposed Project would be less than significant for other utility services, like natural gas and electricity services. The Reduced Density, With Project Redesign Alternative would increase the demand for utility services (i.e., gas, electric) beyond existing levels but, at levels less than those of the Original Proposed Project, but the impact would still be potentially significant. Given the density of this Alternative, the need for modification and addition of utilities would be less than for the Original Proposed Project.

7.6.3 - Ability to Meet Project Objectives

The Reduced Density, With Project Redesign Alternative would decrease the intensity of the environmental impacts associated with the construction and development of the Original Proposed Project. This Alternative would involve decreased residential densities to the south of SR-38, views of Big Bear Lake and the distant mountain ranges from SR-38 would be less obstructed, when compared to the Original Proposed Project. The Reduced Density, With Project Redesign Alternative would reduce but not eliminate all environmental impacts associated with the Original Proposed Project. However, this Alternative does not meet the primary objectives for the Original Proposed Project, which proposes 92 single-family residential custom lots. Therefore, this Alternative partially meets the project objectives, but falls short with only 66 residential lots.

7.6.4 - Summary

The Reduced Density, With Project Redesign Alternative would reduce but not eliminate some environmental impacts associated with the Original Proposed Project. Other impacts such as those related to aesthetics, biological resources would be similar because although the number of residential lots would be reduced by 26, the development of the site would be similar. So although some impacts can be eliminated or substantially reduced under this Alternative, it is not considered an environmentally superior alternative.

7.7 - Proposed Project Alternative

7.7.1 - Description of Alternative

The Proposed Project Alternative is the subdivision of the site into 57 lots, 50 numbered lots (residential lots) to be sold individually and developed into custom homes and 7 lettered lots, one would be designated as Open Space/Conservation easement; one would be designated as Open Space/Conservation and Neighbor Lake Access easement; three are the well sites; one would be potentially developed for an on-site reservoir, and one would be developed as the marina parking lot with a boat ramp. The Marina lot also includes some open space for the preservation of existing trees; however, because of the development of the parking lot and boat ramp, the lot would not be considered Open Space. Exhibit 2-4, Original Proposed Project, and Exhibit 2-5, Proposed Project Alternative, in Section 2, Project Description, show the following differences between the plans:

- The Tentative Tract Map has been revised to reduce the number of lots from 95 lots to 57 lots by: 1) proposing larger lot sizes (minimum 20,000-square-foot lots – BV/RS-20M); 2) eliminating all residential development along the shoreline; and 3) creating two distinct conservation areas – one covering a portion of the shoreline south of SR-38 (this lot includes Neighborhood Lake Access), and the other encompassing the pebble plain habitat and bald eagle perches on the west end of the site. A third lettered lot consists of the parking lot/boat launch ramp, which also includes some open space, but because of the proposed use, cannot be referred to as Open Space/Conservation. Finally, there are three lettered lots for the existing water well sites and one lettered lot for the potential reservoir site. In addition, a 10-acre offsite pebble plain habitat would be purchased and dedicated as an off-site Conservation Easement.
- The request for a General Plan Amendment has been revised to reflect the larger minimum lot size and to re-designate the site from BV/RL-40 (minimum lot size 40 acres) to BV/RS-20M (minimum lots size 20,000 square feet) instead of the Original Proposed Project’s BV/RS (minimum lot size 7,200 square feet).
- The proposed marina has been moved from the lake shore near the west side of the site to the east side of the site, and the size of the marina has been reduced from 103 slips to 55 slips, to

reflect the proposed reduction in the number of residential lots to be developed. For the proposed marina parking lot, direct access from SR-38 is required, whereas under the Original Proposed Project, access to the marina parking lot was from private street A.

- The realignment of a segment of SR-38 has been deleted from the Proposed Alternative Project and no changes in the SR-38 configuration are now proposed. Because the road segment would not be realigned, the proposed removal of approximately 665 trees of the 2,760 trees identified on site would not occur. The incidence of tree removal to develop lots would also be reduced because larger lot sizes would allow homebuilders greater options in siting the homes to avoid trees. No direct access to SR-38 from individual lots is proposed. Access to individual lots would be from the proposed public streets (A and B). Also, with the deletion of all lakefront residential lots south of SR-38, the need for five points of ingress/egress from the south side has been reduced to two for the marina parking lot (refer to Exhibits 2-4 and 2-5), to allow traffic through the marina parking lot to flow. Residents' access from the project site north of SR-38 has been reduced from three streets to two, with the third street shown on the original site plan now proposed to be used for emergency access only.

7.7.2 - Evaluation of Impacts Compared to the Proposed Project

Aesthetics

The aesthetic impacts associated with the Original Proposed Project would be significant and unavoidable. As with the Original Proposed Project, the existing visual character of the site would be modified under the Proposed Project Alternative. However, the level of aesthetic impacts would be reduced with this Alternative. With this Alternative, no residential use is proposed south of SR-38 and the highway would not be realigned. Therefore, views of Big Bear Lake and the distant mountain ranges from SR-38 would not be obstructed with structures. In addition, 5.73 acres would be preserved for open space/conservation/Neighborhood Lake Access, and would therefore, be aesthetically superior and more inline with the existing conditions than would the Originally Proposed Project. Since this Alternative proposes no residential development along the lakeshore and less dense residential use (50 lots, with minimum 20,000-square-foot lots), fewer light and glare impacts would occur, and the area would retain its mountain community ambiance. Therefore, the Proposed Project Alternative would be considered environmentally superior to the Original Proposed Project.

Agricultural Resources

Impacts to agricultural resources would be less than significant with the Original Proposed Project, because no agricultural use of the site has previously occurred and the site is not designated as prime farmland. Therefore, the Proposed Project Alternative would similarly not affect agricultural resources.

Air Quality

The air quality impacts (short-and long-term) associated with the Original Proposed Project would be significant and unavoidable. Because of the reduction in proposed number of residential lots that could be developed, fewer vehicular trips would be generated under this Alternative, which would produce less mobile and energy source emissions. Additionally, with fewer homes, less particulate emissions would be generated. This Alternative would result in fewer local and regional air pollutant emissions. Therefore, the Proposed Project Alternative would be considered environmentally superior to the Original Proposed Project.

Biological Resources

The Original Proposed Project would have significant and unavoidable impacts related to biological resources, specifically for bald eagle habitat. The Proposed Project Alternative would preserve 5.73 acres of open space/conservation, which would preserve habitat for the bald eagle and pebble plain, and would acquire a 10-acre off-site Conservation Easement for Pebble Plain habitat preservation. In addition, fewer lots would be developed for residential use, and SR-38 would not be realigned from its current location, which would also reduce impacts to bald eagle habitat. However, tree removal and mitigation would still be required and some loss of habitat would occur, but not to the same degree as the Original Proposed Project.

Cultural Resources

Although with the Original Proposed Project, the impacts to cultural resources would be less than significant with mitigation, there would be fewer impacts to cultural resources with the Proposed Alternative Project because less land disturbance would occur. Therefore, the Proposed Project Alternative would be considered environmentally superior to the Original Proposed Project.

Geology and Soils

With implementation of mitigation measures, standard regulations and UBC, the impacts to geologic resources would be less than significant for the Original Proposed Project. Compared to the Original Proposed Project, under this Alternative, fewer residents and structures would be exposed to seismic hazards. This Alternative would not involve grading for the realignment of SR-38. The amount of grading associated with this Alternative would create similar potential impacts from slope stability as the Original Proposed Project, since both would develop homes on the steepest portions (northern half) of the site. However, because this alternative includes 42 fewer homes, and larger lot sizes, with 12 lots over 1 acre in size, this Alternative represents an opportunity to reduce the amount of grading that would be required to develop lots by being able to avoid steeper portions of lots and still develop building pads. Thus, less land disturbance and less potential to develop on steep slopes would occur.

Hazards and Hazardous Materials

Although the hazards and hazardous materials impacts would be less than significant with the Original Proposed Project, there would be even fewer hazards and hazardous materials impacts with the Proposed Project Alternative.

Hydrology (Drainage and Water Quality)

The impacts to hydrology would be significant for the Original Proposed Project due to the water supply issues. The Proposed Project Alternative would involve less development in the project area over the Original Proposed Project. The amount of impermeable surface area (i.e., residences, driveways, etc) would be reduced with this Alternative because substantially fewer homes would cover the same gross amount of land. Additionally, this Alternative would involve fewer residences and vehicles on-site, thus reducing pollution sources of stormwater runoff.

Land Use and Relevant Planning

The land use impacts would be less than significant for the Original Proposed Project. As with the Original Proposed Project, this Alternative would require an amendment to the Official Land Use District designation of the project site, per the County of San Bernardino General Plan. Currently, the project site is designated as RL-40, yet the Proposed Project Alternative includes 50 residential lots with minimum 20,000 square feet (BV/RS-20M). This Alternative would not include realignment of SR-38, thus an amendment to the Circulation Element of the General Plan would not be required. Similar to the Original Proposed Project, development standards under this Alternative would be required to be consistent with the provisions of the Geologic Hazard, Fire Safety, Biotic Resources and Scenic Resources Overlay Districts in the San Bernardino Development Code. Per the provisions of the Geologic Hazard, Fire Safety, and Biotic Resources Overlay Districts, both the Original Project and the Proposed Alternative Project will result in less than significant impacts with compliance of the development standards outlined in the Development Code and identified mitigation measures in the appropriate technical reports (i.e., geology/soils and biological reports).

Contrary to the Original Proposed Project, this Alternative would not result in obstructed views of Big Bear Lake and the distant mountain ranges from the portion of the lakefront and/or SR-38 that traverses the project site. Thus, this Alternative would be consistent with the developments standards set forth in the Scenic Resources Overlay District.

Mineral Resources

The site is not within an area designated by the State for locally important mineral resources and it does not lie within the County of San Bernardino's Mineral Resource Zone. No impacts to mineral resources would occur as a result of the Proposed Alternative Project's implementation.

Noise

The noise impacts associated with the Original Proposed Project would be less than significant with mitigation. Given that 42 fewer residential lots would occur under this Alternative, long-term noise levels associated with vehicular traffic would be reduced with this Alternative. Additionally, this Alternative would include a 55-boat slip marina facility, compared to a 103-boat slip marina with the Original Proposed Project, which in turn, would produce less new noise sources from watercraft utilizing Big Bear Lake.

Population and Housing

Although the impacts to Population and Housing would be less than significant with the Original Proposed Project, the impacts would be even less with the Proposed Project Alternative.

Public Services

The public services impacts associated with the Original Proposed Project would be less than significant.

Fire and Police Protection. This Alternative would result in development of 50 residential lots, as compared to 92 residential lots within the Original Proposed Project. Development under this Alternative or the Original Proposed Project would result in a nominal increase in the demand for fire and police protection services over existing conditions. Similar to the Original Proposed Project, this Alternative would not result in the need for expansion or construction of police or fire protection facilities. However, compared to the Original Proposed Project, the number of service calls would decrease with this Alternative.

Schools. The Proposed Project Alternative would generate approximately 11 schoolchildren (.21 x 50 dwelling units), which is eight fewer schoolchildren than the Original Proposed Project.

Libraries. The Proposed Project Alternative would generate approximately 116 new residents. However, as with the Original Proposed Project, the addition of these new residents would not significantly impact libraries serving the project site.

Recreation

Impacts to recreation would be less than significant with the Original Proposed Project. This Alternative includes 55 marina boat slips and 5.73 acres of open space/conservation/Neighborhood Lake Access, but because development would occur on the site, there would be a loss of trails and access to the forested areas to the north from the project site. However, since the trails on-site are unauthorized and not part of a public trail system, they are not guaranteed under existing conditions and access could be precluded at any time. Neither this Alternative, nor the Original Proposed Project would increase the use of existing parks or recreational facilities such that substantial physical deterioration would occur.

Traffic and Circulation

The traffic impacts associated with the Original Proposed Project would be less than significant with mitigation. Because this Alternative proposes substantially fewer residential lots, the Proposed Project Alternative would generate less project-related traffic. However, both the Original Proposed Project and this Alternative would contribute to the existing intersection deficiency at Stanfield Cutoff and Big Bear Boulevard, and either project would be required to pay “fair-share” fees to mitigate their respective contribution to the existing intersection deficiency.

Utilities

Water: The utility impacts associated with the Original Proposed Project would be significant and unavoidable for water services. In order to match the number of lots developed to the available onsite water supply, this Alternative proposes 50 residential lots. A Water Feasibility Study and Water Supply Report prepared specifically for this Alternative has shown that two of the three wells on-site can provide an adequate water supply for the proposed 50 residential lots. The wells will be deeded to County Service Area 53C or the Department of Water and Power (DWP) upon recordation of the final tract map. Therefore, under this Alternative, the Proposed Project Alternative has a secure water source. Coupled with the fact that this Alternative proposes substantially fewer residents, the Proposed Project Alternative is considered environmentally superior to the Original Proposed Project.

Sewer. The utility impacts associated with the Original Proposed Project would be less than significant for sewer services. Given the substantial reduction in the number of residential lots that could be developed with this Alternative, this Alternative would require a reduced demand on sewer services.

Solid Waste. The utility impacts associated with the Original Proposed Project would be less than significant for solid waste services. The Proposed Project Alternative would produce less solid waste when compared to the Original Proposed Project. This Alternative, as with the Original Proposed Project, would not create impacts to existing landfills. However, because this Alternative would generate substantially fewer residents, it would be considered environmentally superior to the Original Proposed Project.

Utilities. The utility impacts associated with the Original Proposed Project would be less than significant for other utility services, like natural gas and electricity services. The Proposed Project Alternative would increase the demand for utility services (i.e., gas, electric) beyond existing levels, but at levels less than those of the Original Proposed Project. Given the density of this Alternative, the need for modification and addition of utilities would be less than for the Original Proposed Project.

7.7.3 - Ability to Meet Project Objectives

Although the Proposed Project Alternative would result in reduced impacts to each environmental impact issue and is environmentally superior compared to the Original Proposed Project, this Alternative does not fully meet the objectives established for the Original Proposed Project. The Proposed Project Alternative includes only 50 residential lots instead of 92; it proposes only 55 marina boat slips, and it would not realign SR-38 and create lakefront lots. However, it will meet the objective of establishing a single-family residential subdivision on the project site that would be developed with custom homes and will also provide a marina for homeowner use as originally planned.

7.7.4 - Summary

The Proposed Project Alternative would significantly reduce, but not eliminate, the environmental impacts associated with the construction and operation of the Original Proposed Project. Because this Alternative proposes a 46 percent reduction in residential density, with no lakefront residential development south of SR-38, and no realignment of SR-38, views of Big Bear Lake and the distant mountain ranges from SR-38 would not be obstructed when compared to the proposed 92-lot Project. In addition, fewer biological impacts would occur because less land would be disturbed and because 5.73 acres of the site would be reserved for open space/conservation; in addition, 10 acres of offsite Pebble Plain habitat would be preserved through a Conservation Easement. The water feasibility study prepared for this Alternative has concluded that on-site wells can adequately provide water for the 50 residential lots proposed in this Alternative. The Proposed Project Alternative is environmentally superior to the Original Proposed Project and meets most of the primary project objectives, but not to the same degree as the Original Proposed Project.

7.8 - Comparison of Alternatives

Table 7-2 summarizes and compares the project characteristics and anticipated impacts of the alternatives compared to those of the Original Proposed Project. The Original Proposed Project has significant and unavoidable impacts to aesthetics, air quality, both short- and long-term, and biological resources, primarily for the impacts to bald eagle habitat, and utilities (water supply).

7.9 - Environmentally Superior Alternative

Based on the analysis of each alternative, the No Project – No Development alternative is the most environmentally superior alternative because it eliminates all of the significant impacts of the proposed project. However, CEQA Guidelines Section 15126.6 (e)(2) states the following:

If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

As shown in Table 7-1, project related impacts could be substantially reduced, by not realigning SR-38. Furthermore, the impacts could also be reduced by decreasing the overall density and reducing the number of residential lots. The Applicant has amended the Tentative Tract Map (TTM) to the standards of the Proposed Project Alternative. While several of the alternatives are environmentally superior to the Original Proposed Project, the Proposed Project Alternative evaluated in detail in this Revised Draft EIR is the preferred alternative and the environmentally superior alternative for the following reasons:

- The Proposed Project Alternative has the fewest number of residential lots, and the largest minimum lot size, with 12 of the lots over 1 acre in size;
- The Proposed Project Alternative includes 5.73 acres for conservation/open space and 10 acres of offsite Pebble Plain habitat would be preserved through a Conservation Easement. In addition, an area with the easternmost drainage that will be set aside for southern rubber boa habitat;
- The Proposed Project Alternative lessens the impacts of each impact area, and reduces significant impacts to Aesthetics Air Quality, and Water Supply to less than significant levels; and
- The Proposed Project Alternative would reduce the impacts to the greatest extent practicable, while maintaining a sound and fiscally feasible project.

Therefore, the Proposed Project Alternative is the Environmentally Superior alternative.

Table 7-2: Comparison of Alternatives

Issue	Original Proposed Project	No Project/No Development	No Project/ Existing Designation	Reduced Density, Without Road Realignment, Without Marina	Reduced Density, With Project Redesign	Proposed Project Alternative
Project Description	92 residential lots, 103-slip marina, realignment of SR-38, lake side properties, GP amendment required.	No development, site remains as is, no GP amendment required.	40-acre minimum lots, 1.5 lots could be developed, no marina, no GP amendment required.	62 residential lots, no marina, no SR-38 realignment, no development south of SR-38, GP amendment required.	66 residential lots, 72-slip marina, realignment of SR-38, residential development south of SR-38, GP amendment required.	50 residential lots, 55-slip marina, 5.73 acres of open space, no road realignment, no lake side properties, GP amendment required.
Aesthetics	Significant	No Impacts	Less Than Significant	Potentially Significant	Significant, but not to the same degree as the Original Proposed Project	Less Than Significant
Air Quality	Significant	No Impacts	Less Than Significant	Significant, but not to the same degree as the Original Proposed Project	Significant, but not to the same degree as the Original Proposed Project	Less Than Significant
Agriculture	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Biology	Significant	No Impacts	Less Than Significant	Significant, but not to the same degree as the Original Proposed Project	Significant, but not to the same degree as the Original Proposed Project	Significant, but not to the same degree as the Original Proposed Project
Cultural Resources	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Geology	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Hazards	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Hydrology ¹	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Land Use	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant

Table 7-2 (cont.): Comparison of Alternatives

Issue	Original Proposed Project	No Project/No Development	No Project/ Existing Designation	Reduced Density, Without Road Realignment, Without Marina	Reduced Density, With Project Redesign	Proposed Project Alternative
Mineral Resources	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Noise	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Pop and Housing	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Public Services	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Recreation	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Traffic	Less Than Significant	No Impacts	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Utilities	Significant (water supply)	No Impacts	Less Than Significant	Potentially Significant	Potentially Significant	Less Than Significant
Achieves Project Objectives?	Yes, completely	No	No	Housing: Yes, but not to the same degree. No lakefront lots. Marina: No.	Housing: Yes, but not to the same degree. Yes, lakefront lots. Marina: Yes, but not to the same degree.	Housing: Yes, but not to the same degree. No lakefront lots. Marina: Yes, but not to the same degree.
Feasible?	Yes	Yes	Yes	Yes	Yes	Yes
¹ Hydrology refers to drainage and water quality. Water supply is addressed under Utilities heading. Note: "Less Than Significant" may or may not include mitigation. See detailed analysis for clarification.						

SECTION 8: REPORT PREPARATION RESOURCES

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