

A.1 - 2005 Final Environmental Impact Report (EIR) and Appendices

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FINAL

December 2005



Moon Camp Residential Subdivision TT No. 16136 EIR



**Lead Agency:
County of San Bernardino**

**Prepared by:
RBF Consulting**



Administrative Draft EIR Completed: August 23, 2002
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Final EIR Completed: December, 2005

FINAL
ENVIRONMENTAL IMPACT REPORT

MOON CAMP
RESIDENTIAL SUBDIVISION
TENTATIVE TRACT NO. 16136

SCH NO. 2002021105

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1.0 Introduction and Purpose

1.0 INTRODUCTION AND PURPOSE

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 the CEQA (California Public Resources Code Section 21000 et. seq.), California 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), and Section 15161 (Project EIR).

The purpose of this Draft EIR is to review the existing conditions, analyze potential environmental impacts, and identify feasible mitigation measures to avoid or lessen potentially significant effects to a level of non-significance, pursuant to CEQA Guidelines. The project proposes a 95-lot residential subdivision on 62.43 acres along the north shore of Big Bear Lake, in the unincorporated community of Fawnskin. The proposal includes the realignment of North Shore Drive, and a boat dock for 100 slips (for more detailed information regarding the proposal, refer to Section 3.0, *Project Description*).

The EIR has been prepared as a Project EIR, addressing the environmental effects of the proposed project. In accordance with Section 15121 of CEQA, a primary purpose of this EIR is to provide decision makers and the public with specific information regarding the environmental effects associated with development of the site, identify ways to minimize the significant effects and describe reasonable alternatives to the project. Mitigation measures are provided which may be adopted as Conditions of Approval in order to reduce the significance of impacts resulting from the project. In addition, this EIR is the primary reference document in the formulation and implementation of a mitigation monitoring and compliance program for the proposed project.

The County of San Bernardino, which has the principal responsibility of processing and approving the project, and other public agencies (i.e., responsible and trustee agencies, refer to Section 1.5 of this EIR) that may use this EIR in the decision making or permit process will consider the information in this EIR, along with other information that may be presented during the CEQA process. Environmental impacts are not always avoided or lessened to a level considered less than significant; in those cases, impacts are considered significant unavoidable impacts. In accordance with Section 15093(b) of the State CEQA Guidelines, if a public agency approves a project that has significant impacts that are not substantially mitigated (i.e., significant unavoidable impacts), the agency shall state in writing the specific reasons for approving the project, based on the Final EIR and any other information in the public record for the project. This is termed, per Section 15093 of the State CEQA Guidelines, a “statement of overriding considerations.”

This document analyzes the environmental effects of the 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 project, to determine the short-term and long-term effects associated with their implementation. This EIR discusses both the direct and indirect impacts of this project, as well as the cumulative impacts associated with other past, present, and reasonably foreseeable future projects. 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 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.

1.2 COMPLIANCE WITH CEQA

The 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 State CEQA Guidelines, as amended, the County of San Bernardino, serving as the Lead Agency, will: 1) publish a notice of availability of a Draft EIR in "The Grizzly" and "The Sun," 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 Draft EIR must submit their comments in writing to the individual identified on the document's NOC 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 oral and written comments received from both citizens and public agencies during the public review period.

The Final EIR will consist of the Draft EIR, revisions to the Draft EIR, and responses to comments addressing concerns raised by responsible agencies or reviewing parties submitted during the public review period. 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 the Draft EIR will be provided to the respective agency.

1.3 EIR SCOPING PROCESS

In compliance with the State CEQA Guidelines, the County of San Bernardino has taken steps to maximize opportunities to participate in the environmental process. During the preparation of the 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 Public Scoping Meeting on March 2, 2002.

INITIAL STUDY

In accordance with Section 15063(a) of the State 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. As a result, the Initial Study determined that the Draft EIR should address the project's potentially significant impacts on a variety of environmental issue areas that are addressed in Section 5.0 of this EIR.

Based on the Initial Study, no impacts upon agricultural resources and mineral resources are anticipated as a result of the proposed development. As a result, these issues are addressed in Section 10.0, *Effects Found Not to be Significant*, of this EIR.

NOTICE OF PREPARATION

Pursuant to the provision of Section 15082 of the State 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 is preparing a Draft EIR for the Moon Camp Tentative Tract #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 this EIR.

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 following specific environmental concerns were raised by responses to the NOP for the project (the numerical reference in parenthesis is the EIR Section in which the analysis is provided). The NOP responses, and written comments received at the meeting are contained in Appendix 15.2:

NOP Written Comments

- Pebble plain habitat located on-site and adjacent National Forest lands (refer to Section 5.8, *Biological Resources*);
- Recreational activities, including the local paths and trails adjacent to Big Bear Lake (refer to Section 5.2, *Recreation*);
- Impacts to cultural resources (refer to Section 5.9, *Cultural Resources*);
- Wastewater services and facilities (refer to Section 5.3, *Public Utilities*);
- Impacts associated with wastewater odors (refer to Section 5.6, *Air Quality*);
- Hydrology/water quality (i.e., Big Bear Lake) and local water supplies, including drought conditions (refer to Section 5.11, *Hydrology and Drainage*);
- Bald eagle population and supporting habitat (perch trees) (refer to Section 5.8, *Biological Resources*);
- Cumulative impacts to all issue areas for projects in the vicinity of the project site (refer to Section 4.0, *Basis for Cumulative Analysis*, and Section 5.0, *Description of Environmental Setting, Impacts and Mitigation Measures*);
- Impacts associated with light and glare (refer to Section 5.4, *Aesthetics/Light and Glare*);
- Impacts to scenic resources (refer to Section 5.4, *Aesthetics/Light and Glare*);
- Impacts associated with increased traffic (refer to Section 5.5, *Traffic and Circulation* and Section 5.7, *Noise*);
- Air quality impacts, including air pollution from watercrafts, wood burning fireplaces and automobiles (refer to Section 5.6, *Air Quality*);
- Mature/old-growth trees on-site (refer to Section 5.8, *Biological Resources*);
- Biological resources impacts resulting from increased noise levels (refer to Section 5.7, *Noise*);
- Public health and safety associated with increased traffic volumes (refer to Section 5.5, *Traffic and Circulation*);
- Public utilities, including natural gas, water, wastewater and electricity service capabilities (refer to Section 5.3, *Public Utilities*);
- Biological resources, including flora, fauna and habitats located on-site and to the adjacent San Bernardino National Forest Lands. Species include: ash-grey paintbrush, flycatchers, California spotted owl, herons, hawks, Southern

mountain buckwheat (*Eriogonum kennedyi* var. *austromontanum*) and threatened Bear Valley sandwort (*Arenaria ursine*) (refer to Section 5.8, *Biological Resources*);

- Impacts to wildlife corridors (refer to Section 5.8, *Biological Resources*);
- Affects of seismicity and slope stability (refer to Section 5.10, *Geology and Soils*);
- Impacts to Big Bear Lake from marina construction activities (refer to Section 5.8, *Biological Resources* and Section 5.11, *Hydrology and Soils*);
- Public services, including fire and police protection, libraries, schools, and solid waste disposal (refer to Section 5.3, *Public Services and Utilities*);
- Visual character of the local area (refer to Section 5.4, *Aesthetics/Light and Glare*);
- Impacts to parks and open space (refer to Section 5.2, *Recreation*);
- Impacts to recreational uses of lake (refer to Section 5.2, *Recreation*);
- Impacts from potential future subdivisions of individual lots (refer to Section 5.1, *Land Use and Relevant Planning*);
- Noise generated by traffic and watercraft (refer to Section 5.7, *Noise*);
- Impacts to springs from increased use of Big Bear Lake (refer to Section 5.11, *Hydrology and Drainage*);
- Biological surveys that are seasonal and the length of studies (refer to Section 5.8, *Biological Resources*); and
- Impacts associated with population growth (refer to Section 6.3, *Growth Inducing Impacts*).

March 2, 2002 Public Scoping Meeting

- Impacts to scenic views (refer to Section 5.4, *Aesthetics/Light and Glare*);
- Impacts associated with increased traffic volumes (refer to Section 5.5, *Traffic and Circulation*);
- Impacts associated with tree removal at building sites (refer to Section 5.8, *Biological Resources*);
- Impacts associated with increased light and glare (refer to Section 5.4, *Aesthetics/Light and Glare*);

- Impacts to water quality and supplies (refer to Section 5.11, *Hydrology and Drainage*);
- Impacts to wastewater services and facilities (refer to Section 5.3, *Public Utilities*);
- Impacts to Big Bear Lake water quality (refer to Section 5.11, *Hydrology and Drainage*);
- Public services, including fire and police protection, medical facilities, schools, and parks (refer to Section 5.3, *Public Services and Utilities*);
- Biological surveys that are seasonal and the length of studies (refer to Section 5.8, *Biological Resources*);
- Impacts associated with change in land use designations from BV/RL-40 (40-acre minimum lot size) to BV/RS Single-Residential (refer to Section 5.1, *Land Use and Relevant Planning*);
- Loss of public access through the project site, including the shoreline of Big Bear Lake (refer to Section 5.2, *Recreation*);
- Biological resources, including flora, fauna and habitats located on-site and on San Bernardino National Forest Lands (refer to Section 5.8, *Biological Resources*);
- Public utilities systems, including natural gas, waste disposal and electricity supplies/capabilities (refer to Section 5.3, *Public Services and Utilities*);
- Impacts to wildlife corridors (refer to Section 5.8, *Biological Resources*);
- Impacts resulting from seismic activity (refer Section 5.10, *Geology and Soils*);
- Cumulative traffic impacts to the north shore (refer to Section 5.5, *Traffic and Circulation*);
- Impacts associated with population growth (refer to Section 6.3, *Growth Inducing Impacts*);
- Impacts from odors produced by wastewater (refer to Section 5.6, *Air Quality*);
- Impacts to recreational uses on the lake (refer to Section 5.2, *Recreation*);
- Bald eagle population and supporting habitat (perch trees) (refer to Section 5.8, *Biological Resources*);
- Visual character of the Community of Fawnskin (refer to Section 5.4, *Aesthetics/Light and Glare*);

- Impacts to cultural resources (refer to Section 5.9, *Cultural Resources*);
- Impacts of noise generated by traffic and watercraft (refer to Section 5.7, *Noise*);
- Impacts to air quality, including air pollution from watercrafts, wood burning fireplaces and automobiles (refer to Section 5.6, *Air Quality*); and
- Impacts to slope stability (refer to Section 5.10, *Geology and Soils*).

The EIR focuses primarily on changes in the environment that would result from the proposed project. The EIR identifies potential impacts resulting from the construction and operation of the proposed project and provides measures to mitigate potential significant impacts. Those impacts which cannot be mitigated to levels less than significant are also identified. This EIR addresses impacts in the following areas:

- Land Use and Relevant Planning;
- Recreation;
- Public Services and Utilities;
- Aesthetics/Light and Glare;
- Traffic and Circulation;
- Air Quality;
- Noise;
- Biological Resources;
- Cultural Resources;
- Geology and Soils; and
- Hydrology and Drainage.

1.4 FORMAT OF THE EIR

The Draft EIR is organized into 15 sections. Section 1.0, *Introduction and Purpose*, provides CEQA compliance information. Section 2.0, *Executive Summary*, provides a brief project description and summary of the environmental impacts and mitigation measures. Section 3.0, *Project Description*, provides a detailed project description indicating project location, background and history, and project characteristics, phasing and objectives, as well as associated discretionary actions required. Section 4.0, *Basis for the Cumulative Analysis*, describes the approach and methodology for the cumulative analysis. Section 5.0, *Description of Environmental Setting, Impacts and Mitigation Measures*, contains a detailed environmental analysis of the existing conditions, project impacts, recommended mitigation measures and unavoidable adverse impacts. The analysis of each environmental category in this Section is organized as follows:

- “Existing Conditions” describes the physical conditions which exist at the time the Notice of Preparation was published and which may influence or affect the issue under investigation;
- “Significance Criteria” provides the thresholds which are the basis for conclusions of significance. The primary resource for the criteria is Appendix

G of the State CEQA Guidelines (California Code of Regulations, Section 15000-15387);

- “Project Impacts” describes potential environmental changes to the existing physical conditions which may occur if the proposed project is implemented;
- “Cumulative Impacts” describes potential environmental changes to the existing physical conditions which may occur if the proposed project is implemented together with all other past, present and reasonably foreseeable future projects producing related or cumulative impacts;
- “Mitigation Measures” are those specific measures which may be required of the project in order to avoid a significant impact; minimize a significant impact; rectify a significant impact by restoration; reduce or eliminate a significant impact by preservation and maintenance operations; or compensate for the impact by replacing or providing substitute resources or environment; and
- “Level of Significance After Mitigation” discusses whether the project’s impact and the project’s contribution to cumulative impacts can be reduced to levels that are considered less than significant.

Section 6.0, *Long-Term Implications of the Proposed Project*, discusses significant environmental changes that would be involved in the proposed action, should it be implemented and discusses growth inducing impacts of the proposed project. Section 7.0, *Alternatives to the Proposed Project*, describes a reasonable range of alternatives to the project or to the location of the project which could feasibly attain the basic project objectives and minimize the potential introduction of significant environmental impacts. Section 8.0, *Inventory of Mitigation Measures*, lists mitigation measures proposed to minimize the significant impacts. Section 9.0, *Inventory of Significance After Mitigation*, describes those impacts which remain significant following mitigation and require a Statement of Overriding Considerations. Section 10.0, *Effects Found Not to Be Significant*, provides an explanation of potential impacts which have been determined not to be significant or significantly below thresholds for significance. Section 11.0, *Organizations and Persons Consulted*, identifies all Federal, State or local agencies, other organizations and individuals consulted. Section 12.0, *Bibliography*, identifies reference sources for the EIR. Section 13.0, *Mitigation Monitoring Program*, identifies responsibilities and timing for monitoring mitigation. Section 14.0, *Comments and Responses*, will be included in the Final EIR and will provide comments and responses pertaining to the Draft EIR. Section 15.0, *Appendices*, contains technical documentation for the project.

1.5 RESPONSIBLE AND TRUSTEE AGENCIES

Certain projects or actions undertaken by a Lead Agency require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Such other agencies are referred to as *Responsible Agencies* and *Trustee Agencies*. Pursuant to Sections 15381 and 15386 of the State CEQA

Guidelines, as amended, Responsible Agencies and Trustee Agencies are respectively defined as follows:

“Responsible Agency” means a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA the term “Responsible Agency” includes all public agencies other than the Lead Agency which have discretionary approval power over the project.” (*Section 15381*)

“Trustee Agency” means a State agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. Trustee Agencies include....” (*Section 15386, part*)

Responsible and Trustee Agencies and other entities which may use this EIR in their decision-making process or for informational purposes include, but may not be limited to, the following:

- Bear Valley Unified School District
- Big Bear Area Regional Wastewater Agency
- Big Bear Community Services District
- Big Bear Lake Department of Water and Power
- Big Bear Municipal Water District
- Big Bear Unified School District
- California Air Resources Board
- California Department of Fish and Game
- California Department of Transportation
- California Division of Forestry
- California Regional Water Quality Control Board
- California State Highway Patrol
- City of Big Bear Lake
- County of San Bernardino Department of Public Health
- County of San Bernardino Department of Public Works, Solid Waste Management Division
- County of San Bernardino Fire Department
- County of San Bernardino Sheriff's Department
- Edison International
- Redlands Water Department
- SANBAG
- South Coast Air Quality Management Agency
- Southern California Association of Governments
- Southern California Gas Company
- State Water Resources Control Board
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Forest Service

1.6 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:

- City of Big Bear Lake Final General Plan EIR, July 1999. The City of Big Bear Lake Final General Plan EIR, a Program EIR, analyzed the potential environmental impacts associated with the City of Big Bear Lake comprehensive update of its General Plan. Comprehensive mitigation and monitoring and reporting programs were developed, through proposed General Plan policies and programs, to address potential impacts. Implementation of the proposed policies and programs reduced potentially significant impacts to less than significant levels for the majority of impacts. To note, a few areas of special concern and sensitivity were given focused consideration in the development of the General Plan Update. These areas include Biological Resources, Water Resources and Air Quality. Impacts to Biological and Water Resources were reduced to less than significant levels. However, the EIR states that impacts to air quality would continue to be impacted by criteria pollutants associated with traffic. Information in the General Plan EIR was primarily utilized in the Moon Camp EIR as background data.
- County of San Bernardino General Plan, adopted 1989, revised 2001. The County of San Bernardino General Plan Update 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, 1989. 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 which may occur during the implementation of the General Plan Update. The General Plan's implementation program incorporates mitigation measures. However, project-specific impacts are assessed at the application stage. The General Plan's 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 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 1989, revised 2001. The County Development Code provides the regulations which must be followed by every project within the County's jurisdictional area. Information within the Code was utilized in various sections of this EIR, particularly as it relates to the range of permitted uses within the BV/RS Single Residential designation (refer to section 5.1, *Land Use and Relevant Planning*) and for the identification of additional constraints and requirements which govern development.

2.0 Executive Summary

2.0 EXECUTIVE SUMMARY

2.1 PROJECT ANALYSIS SUMMARY

The proposed Moon Camp Tentative Tract #16136 Residential Subdivision (“Moon Camp”) encompasses approximately 62.43 acres along the northwest shore of Big Bear Lake, in the community of Fawnskin, County of San Bernardino. The Project site is located adjacent to the northwest shore of the Big Bear Lake, in the relatively undeveloped eastern portion of Fawnskin. 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 Oriole Lane/Canyon Road to the west.

The Project proposes a 95-lot residential subdivision with lots ranging in size from 0.17 acres (7,292 square feet) to 2.11 acres. Lots would be sold individually and development of lots and construction of homes would be by custom design. The proposal is a Tentative Tract Map for 92 numbered and three lettered lots. The three lettered lots are identified as follows: (1) Lot “A” is a private street designed to provide access to the southernmost lots; (2) Lot “B” is a 1.4-acre strip of land that would remain between the relocation of State Route 38 and the private Street, Lot “A”; and (3) Lot “C” is a gated entrance to the Project, including a proposed boat dock, consisting of 100 boat slips, which would be available for use by residents of the tract and accessible by Lot “C”.

The Project includes relocation of North Shore Drive, also referred to as State Route 38, to allow development of lakeshore lots. An approximately 2,498-foot segment of the roadway would be relocated. The maximum distance of relocation, as designed, is 207 feet to the north. The design includes a 76-foot road width, with 14-foot shoulder/bikeway access, resulting in a 104-foot right-of-way via a loop road that would include five separate cul-de-sac drives to access lakefront lots.

This EIR includes a comprehensive review of project affects, the significance of the affects and recommended mitigation measures. Section 5.0 of this EIR concludes that the proposed Project would generate impacts related to public services, utilities, aesthetics, traffic/circulation, air quality, noise, biological resources, cultural resources, geology/soils and hydrology/drainage. All impacts, with the exception of those identified for public services/utilities (ability to be served water), aesthetics, air quality, biological resources and hydrology (groundwater) can be mitigated to less than significant levels. The identified public services/utilities (ability to be served by water), aesthetic, air quality, biological resources and hydrology (groundwater) impacts require findings in accordance with Section 15091 of CEQA and a Statement of Overriding Considerations in accordance with Section 15093 of CEQA.

2.2 ENVIRONMENTAL ISSUES/MITIGATION SUMMARY

The following is a brief summary of the impacts, mitigation measures, and unavoidable significant impacts identified and analyzed in Section 5.0 of this EIR. Refer to the appropriate EIR Section for additional information.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
5.1	LAND USE AND RELEVANT PLANNING		
	San Bernardino County General Plan		
	5.1-1 <i>The proposed Project conflicts with the land use plan, policies and regulations set forth in the San Bernardino County General Plan. 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).</i>	5.1-1 No mitigation measures are recommended.	No unavoidable significant impacts related to Land Use and Relevant Planning have been identified following compliance with the San Bernardino County General Plan and Development Code policies and standards.
	San Bernardino County Development Code		
	5.1-2 <i>The proposed Project conflicts with the land use plan, policies and regulations of the San Bernardino County Development Code. Analysis has concluded that a less than significant impact would occur with approval of a Land Use District Change, Circulation Element Amendment and Conditional Use Permit.</i>	5.1-2 No mitigation measures are recommended.	
	Cumulative		
	5.1-3 <i>The proposed Project, combined with other future development, will increase the intensity of land uses in the area. Analysis has concluded that impacts are less than significant and no mitigation is required. Projects are evaluated on a project-by-project basis in accordance with the San Bernardino County General Plan and Development Code.</i>	5.1-3 No mitigation measures are recommended.	
5.2	RECREATION		
	Expansion and/or Construction of Recreational Facilities		
	5.2-1 <i>Implementation of the Moon Camp project involves the construction or expansion of recreational facilities which may have an adverse physical</i>	5.2-1 No mitigation measures are recommended.	No significant impacts related to Recreational facilities have been identified in this Section.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
	<p>effect on the environment. Compliance with the Big Bear MWD standards and permit requirements would reduce impacts to a less than significant level.</p> <p>Public Access</p> <p>5.2-2 <i>Implementation of the Moon Camp project would not affect public access along the north shore of Big Bear Lake. <u>Mitigation requiring dedication of an easement along the south side of North Shore Drive has been incorporated.</u> The Project site is Private Property. Affects on public access are concluded as less than significant.</i></p> <p>Cumulative</p> <p>5.2-3 <i>Cumulative development may result in increased use of existing recreational areas/facilities, thereby creating the potential for physical deterioration. Additionally, cumulative development may include recreational facilities (i.e., marina) that have the potential to result in physical impacts on the environment. Mitigation measures necessary for reducing impacts are addressed on a project-by-project basis to reduce impacts to a less than significant level.</i></p>	<p>5.2-2 No mitigation measures are recommended. <u>The proposed project shall be conditioned to incorporate a pedal path easement along the south side of North Shore Drive, prior to map recordation.</u></p> <p>5.2-3 No mitigation measures are recommended.</p>	
5.3	PUBLIC SERVICES AND UTILITIES		
	Fire Protection		
	5.3-1 <i>Project implementation could result in significant physical impacts with respect to fire protection. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures.</i>	<p>5.3-1a 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.</p> <p>5.3-1b Fire sprinklers for each residence shall be provided in lieu of additional manpower. 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. <u>have a larger sprinkler requirement (FPA13R).</u></p> <p>5.3-1c A Fuels <u>Management Plan</u> modification program, with specifications, shall be prepared and</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>subject to approval by the County of San Bernardino <u>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 30-foot minimum setback requirement from the National Forest. The fuel modification zone shall be located entirely within the project's boundaries. The 100 foot fuel modification requirement shall not terminate at a property line. The 100 foot fuel modification requirement shall extend beyond property lines. Where such fuel modification zone extends onto U.S. Forest Service land, an easement or permit shall be required to be obtained. The <u>minimum 100 foot fuel modification zone requirements</u> may be greater in steeper areas (up to 300 ft.), as determined by the Fire Agency Department.</u></p>	
		<p>5.3-1d Cul-de-sac lengths shall be no longer than 350 feet.</p>	
		<p>5.3-1e A Homeowner's Association or a Special District shall be established to assure <u>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. Long-term vegetation maintenance. An annual vegetation maintenance program shall be included. The HOA or Special District is to be responsible for fuel modification in common areas.</u></p>	
		<p>5.3-1f Fire resistance/drought tolerant landscaping shall be required and referenced in the Homeowner's Association or Special District Standards.</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
Police Protection			
5.3-2	<i>Project implementation could result in significant physical impacts with respect to police protection. Analysis has concluded that a less than significant impact would occur.</i>	5.3-2 No mitigation measures are recommended.	
Schools			
5.3-3	<i>Project implementation could result in significant physical impacts to existing school facilities. Potential impacts to school facilities are concluded as less than significant following payment of school impact fees and compliance with all applicable requirements, codes, and ordinances.</i>	5.3-3 No mitigation measures are recommended.	
Libraries			
5.3-4	<i>Project implementation would increase the demand on library services. Analysis has concluded that that a less than significant impact would occur.</i>	5.3-4 No mitigation measures are recommended.	
Wastewater			
5.3-5	<i>Project implementation would generate additional wastewater beyond current conditions. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures.</i>	5.3-5a Prior to issuance of building permits, the Project 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 BBARWA, and may include replacement of existing sewer lines rather than construction of parallel lines. 5.3-5b Prior to issuance of building permits, the Project 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. 5.3-5c The Project Applicant shall relocate the BBARWA 10" force main by installing new pipe <u>(and/or bonding for the relocation)</u> so that it is aligned within the south shoulder of the relocated State Route 38. The 10" force main shall be accessible for BBARWA to maintain and repair the sewer force main. The force main shall not pass through residential lots within the proposed tract.	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
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Water

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| | | <p>5.3-5d The Project 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.</p> | |
| <p>5.3-6</p> | <p><i>Project implementation would increase the demand for water beyond existing conditions. Analysis has concluded that due to the inability of water providers to confirm service to the project, impacts are concluded as significant and adverse. This conclusion is further supported by the potentially significant groundwater overdraft conditions cited in Section 5.11 of the EIR.</i></p> | <p>5.3-6a Prior to approval of building permits, a video inspection of water supply easings and screen shall be conducted in order to update <u>Values of production rates and pumping levels for on-site water supply wells shall be obtained through step-drawdown and constant rate pumping tests.</u> Water samples shall be taken during the inspection for testing and analysis in accordance with standard requirements.</p> <p>5.3-6b If either or both of the two existing on-site wells are utilized as a water source for the project, the Project Applicant shall equip the two existing on-site wells to meet DWP and/or County Special Districts Department standards and dedicate these facilities and water rights to the appropriate water purveyor <u>County of San Bernardino.</u> Within the proposed tract, no individual private irrigation wells shall be permitted.</p> <p>5.3-6c If served by CSA 53-C through a contract with the City of Big Bear Lake Department of Water and Power, After a determination has been made regarding the water purveyor, the Project Applicant shall advance fair-share funds or enter into a reimbursement agreement with the to the appropriate water agency (CSA and/or DWP) (if required) towards constructing a new reservoir and pipeline improvement at Cline-Miller Reservoir (with an estimated project cost at \$481,100). <u>These facilities would be dedicated to the appropriate water agency.</u></p> <p>5.3-6d The following water conservation measures are the minimum measures that shall be complied with in conjunction with domestic water supply to the project. <u>A Homeowners Association shall be</u></p> | <p>Due to the inability of water providers to confirm service to the project, project as well as cumulative impacts are concluded as significant and unavoidable. This conclusion is further supported by the significant and unavoidable conclusion cited in Section 5.11, <i>Hydrology and Drainage</i>, due to inconclusive testing of potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit.</p> <p>If the County of San Bernardino approves the project, the County shall be required to adopt findings in accordance with Section 15091 of the CEQA Guidelines and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA Guidelines.</p> <p>No additional unavoidable significant impacts related to public services and utilities have been identified following implementation of the recommended mitigation measures and compliance with applicable County, service or utility provider requirements, County Codes and Ordinances.</p> |

**EIR
SECTION**

IMPACTS

MITIGATION MEASURES

**SIGNIFICANCE
AFTER MITIGATION**

responsible for enforcing the water conservation measures. Additional measures may be imposed as a result of a contract for water supply between CSA 53-C and the City of Big Bear Lake DWP:

- Landscape shall not be irrigated between the hours of nine (9) a.m. and six (6) p.m.
- Residences, buildings and premises shall be limited to watering every other day.
- Landscape irrigation shall be limited to what is needed and shall not be excessive. Water from landscape irrigation shall not be allowed to run off into streets.
- Water shall not be allowed to leak from any waterline, faucet, or any other facility, either within or outside a private residence, business establishment or on private property. All such leaking waterlines, faucets, and other facilities shall be repaired immediately to prevent leakage.
- Sidewalks, paved driveways, and parkways shall not be washed off with hoses, except as required for sanitary purposes.
- Non-commercial washing of cars, and boats or any other vehicle shall only be done with an automatic shut-off nozzle on a hose, or with a bucket.
- New landscaping shall not exceed more than one-thousand square feet of turf on a parcel or lot or twenty-five percent of the available landscape area.
- A model landscaping and irrigation guide shall be prepared for the tract and required by homeowner association rules. The guide shall specify a plant palate that emphasizes native plants and cultivars that are suitable for the mountain climate. Plant materials shall be low water consuming and fire resistant. Irrigation shall emphasize drip and bubbler type emitters with limit aerial spray

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		irrigation methods. The guide shall be reviewed and approved by the Land Use Services Department.	
Solid Waste			
5.3-7	<i>Development of the Project area would result in increased solid waste generation. Project compliance with the Integrated Waste Management Plan for the County of San Bernardino (currently being revised) 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.</i>	5.3-7 No mitigation measures are recommended.	
Natural Gas			
5.3-8	<i>Project implementation would result in an increased demand for natural gas service beyond existing conditions and would require expansion of the existing gas system. Analysis has concluded that a less than significant impact would occur in this regard.</i>	5.3-8 No mitigation measures are recommended.	
Electricity			
5.3-9	<i>Project implementation would result in an increased demand for electrical service beyond existing conditions and would require expansion of the existing electrical system. Analysis has concluded that impacts would be less than significant.</i>	5.3-9 No mitigation measures are recommended.	
Cumulative Impacts			
5.3-10	<i>Cumulative development could result in an increased demand for public services and an increase in the consumption rates for public utilities, potentially requiring expansions of the existing utility systems. The inability of water providers to confirm service on a project level would also result in significant and unavoidable cumulative impacts. Analysis has concluded that cumulative development for the remaining service and utility affects are subject to standards and requirements of reviewing agencies and no additional mitigation is recommended.</i>	5.3-10 No mitigation measures are recommended.	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
5.4	AESTHETICS/LIGHT AND GLARE		
	Short-Term Aesthetic/Light and Glare Impacts		
5.4-1	<i>Construction of the proposed project would temporarily alter the visual appearance of the site and introduce new short-term sources of light and glare. Analysis has concluded that impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures.</i>	5.4-1a 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. 5.4-1b All construction-related lighting associated with the construction of new roadways, the realignment of State Route 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 concomitant with Grading Permit applications for the subdivision of the lots.	Significant and unavoidable impacts related to Aesthetics/Light and Glare have been identified for viewshed alterations involving existing residents to the north, east and west of the project site. Additionally, significant and unavoidable impacts have been identified for views from State Route 38, a scenic highway, to the south and from the south shore of Big Bear Lake. If the County of San Bernardino approves the 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.
	Long-Term Aesthetic Impacts		
5.4-2	<i>Implementation of the Moon Camp project would adversely impact scenic resources, scenic vistas and the visual character of the site and its surroundings. Analysis has concluded that a significant and unavoidable impact to the visual character and viewshed from the project site and surrounding areas would occur which cannot be mitigated to a less than significant level.</i>	5.4-2a Roof pitches shall not exceed 9/12 and no higher than two-story for any portion of the structure footprint for lots 62-92. 5.4-2b All homes shall provide a two-car garage with automatic garage doors. 5.4-2c A view envelope for each property shall be established by creating a line starting at 6 feet at each side lot line and moving up at a 30 degree angle until both lines meet at the middle of the property. The area located under these lines is the view envelope. Structures shall not protrude outside the view envelope. The view envelope orients the building ridgeline parallel to the view corridors on narrower lots providing views for residents located behind the property.	No additional significant impacts related to Aesthetic/Light and Glare have been identified following implementation of mitigation measures and/or compliance with applicable standards, requirements and/or policies by the County of San Bernardino.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>5.4-2d 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, pale yellows, and shall be consistent with the mountain character of the area.</p> <p>5.4-2e Outside parking/storage areas associated with the boat dock activities shall be completely 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.</p> <p>5.4-2f 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 mature growth. The removal of existing vegetation shall not be required to create views.</p> <p>5.4-2g 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.</p>	

Long-Term Scenic Highway Impacts

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| <p>5.4-3 <i>Implementation of the Moon Camp project would impact views of Big Bear Lake, the distant mountain ranges to the south and adjacent forest areas from North Shore Drive</i></p> | <p>5.4-3a Any entry sign for the development shall be a monument style sign compatible with the mountain character, preferably, rock or rock-appearance.</p> |
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<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
	<p><i>(State Route 38) which is a County and Federally recognized Scenic Highway/Byway. Analysis has concluded that significant and unavoidable impacts would occur as a result of project development.</i></p>	<p>5.4-3b Prior to recordation of the tract map (and/or any ground disturbance, whichever occurs first), landscaping plans for lettered lots B and C shall be submitted to and approved by the San Bernardino County Planning Department.</p>	
	<p>Long-Term Light and Glare Impacts</p>		
5.4-4	<p><i>The proposed Moon Camp project would introduce additional light and glare on-site which may affect the surrounding residents. Analysis has concluded that potential impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures.</i></p>	<p>5.4-4a 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.</p> <p>5.4-4b 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.</p> <p>5.4-4c 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.</p> <p>5.4-4d 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.</p> <p>5.4-4e Mitigation Measures 5.4-4a through 5.4-4d shall be included within the Conditions, Covenants and Restrictions (CC&Rs) of the Home Owner's Association (HOA).</p> <p><u>5.4-4f All outdoor light fixtures shall be cutoff luminaries and shall only use high- or low-pressure sodium lamps.</u></p> <p><u>5.4-4g The Project Applicant/Developer shall install light colored, reflective roof products. Such roofs shall utilize light colored, reflective</u></p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
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materials that meet the performance standards developed by the Energy Star Labeled Roof Program, as well as the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standards 90.1 and 90.2 on energy efficient buildings. This condition shall be verified by the County of San Bernardino Building and Safety Division prior to issuance of building permits.

Cumulative Impacts

5.4-5	<i>Build-out of the Moon Camp development, together with cumulative projects, may alter the nature and appearance of the area and contribute to the loss of undeveloped areas. Analysis has concluded that no significant impacts beyond the analysis contained in the County of San Bernardino General Plan and General Plan EIR are anticipated.</i>	5.4-5	No mitigation measures are recommended.
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5.5 TRAFFIC AND CIRCULATION

Existing Conditions with Project Traffic Analysis

5.5-1	<i>The intersection of Stanfield Cutoff and Big Bear Boulevard currently operates above 100 percent utilization in the peak month weekday evening peak hour. Although the Project does not generate significant traffic volumes, it would contribute to the intersection utilization at the weekday evening peak hour. Pro-rata share payment for intersection improvements to the intersection would reduce project affects to less than significant levels.</i>	5.5-1	For existing traffic conditions, the intersection of Stanfield Cutoff and Big Bear Boulevard currently requires the eastbound right turn lane to be converted to an eastbound through lane, through the intersection. The eastbound right turn lane is restricted to an eastbound through lane, and involves roadway widening. The project's pro rata share of these off-site road improvements is estimated to be \$17,748.	Following implementation of recommended mitigation measures, Traffic and Circulation impacts would be reduced to a less than significant level.
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Year 2006 Traffic Analysis

5.5-2	<i>Project implementation, with year 2006 traffic conditions, would result in an increase in traffic volumes. Analysis has concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff and Big Bear Boulevard to a less than significant level.</i>	5.5-2	Refer to Mitigation Measure 5.5-1. No additional mitigation measures are recommended.
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<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
Year 2025 Traffic Analysis			
5.5-3	<i>Project implementation, with year 2025 traffic conditions, would result in an increase in traffic volumes. Analysis has concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff/Big Bear Boulevard and Stanfield Cutoff/North Shore Drive to a less than significant level.</i>	5.5-3 For future traffic conditions, the intersection of Stanfield Cutoff and North Shore Drive shall require a traffic signal. The project's pro rata share of the signal is \$56,523.	
Safety Hazards and Emergency Access			
5.5-4	<i>Project implementation may increase hazards to vehicles, pedestrians and bicyclists due to the proposed project. Analysis has concluded that with implementation of the recommended mitigation measures, impacts would be less than significant.</i>	5.5-4a Parking shall be restricted on State Route 38. 5.5-4b A 150-foot eastbound left turn pocket shall be striped for traffic on North Shore Drive turning left into the project entry locations. 5.5-4c For future traffic conditions, intersection geometrics as recommended in Table 1b of the Kunzman Associates June 2003 <i>Traffic Analysis</i> report, shall be implemented. 5.5-4d All streets internal to the project shall be constructed to full ultimate cross-sections. as adjacent development occurs. 5.5-4e A STOP sign shall be installed to control outbound traffic on all site access roadways onto North Shore Drive. 5.5-4f The County of San Bernardino shall periodically review traffic operations in the vicinity of the site once the project is constructed in order to assure that the traffic operations are satisfactory. 5.5-4g Landscape plantings and signs shall be limited to 36 inches in height within 25 feet of project driveways to assure good visibility.	
5.6 AIR QUALITY			
Short-Term Air Quality Impacts			
5.6-1	<i>Significant short-term air quality impacts would occur during site</i>	5.6-1 In accordance with the County Development Code and SCAQMD	The following air quality impacts would remain

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	<p><i>preparation and project construction. These impacts are considered significant before and after mitigation for ROG and NOx emissions from construction equipment exhaust. Impacts would be less than significant for other pollutants. (Mitigation in this instance refers to applicable County Development Code Sections and SCAQMD Rules.)</i></p>	<p>Rules, the Project Applicant shall incorporate the following measures during the construction phase of the Project to the satisfaction of the SCAQMD and County of San Bernardino. Compliance with this measure is subject to periodic field inspections by the SCAQMD and County of San Bernardino.</p> <p><u>Grading:</u></p> <p>Apply non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded for ten days or more);</p> <ul style="list-style-type: none"> ▪ Replace ground cover in disturbed areas as quickly as possible; ▪ Enclose, cover, water two times daily or apply non-toxic soil binders in accordance to manufacturer's specifications to exposed piles (i.e., gravel, sand, dirt) with 5% or greater silt content; ▪ Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph; and ▪ All trucks hauling dirt, sand, soil, or other loose materials shall be covered and shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer). <p><u>Paved Roads:</u></p> <ul style="list-style-type: none"> ▪ Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads. 	<p>significant and unavoidable following mitigation:</p> <ul style="list-style-type: none"> ▪ ROG and NOx from construction activities; ▪ Project Operations: Exceedance of State and/or Federal emission levels (ROG, CO and PM10) from project operations; and ▪ Project implementation would result in a significant un-avoidable impact with respect to consistency with the AQMP. <p>If the County of San Bernardino approves the 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.</p>
	<p>Long-Term Operational Impacts</p> <p>5.6-2 <i>The project 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 SCAQMD thresholds for ROG, CO and</i></p>	<p>5.6-2 To the extent feasible, the project shall incorporate the installation of EPA-certified wood burning stoves or fireplaces. If this is not feasible, then the installation of a ceramic coating on the honeycomb inside a catalytic combustor shall be investigated as a feasible alternative. Alternatively, the</p>	

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	<p><i>PM₁₀. These exceedances are considered significant and cannot be mitigated to a less than significant level.</i></p> <p>Consistency with Air Quality Management Plan</p>	<p>use of natural gas fireplaces may be used as a feasible alternative.</p>	
	<p>5.6-3 <i>The project would not conflict with the Air Quality Management Plan (AQMP). Analysis has concluded that the proposed project is consistent with the AQMP criteria.</i></p> <p>Cumulative Impacts</p>	<p>5.6-3 No mitigation measures are recommended.</p>	
	<p>5.6-4 <i>Cumulative impacts to regional air quality resulting from development of the proposed Project would be less than significant.</i></p>	<p>5.6-4 No mitigation measures are recommended.</p>	
5.7	NOISE		
	Short-Term Construction Noise and Vibration Impacts		
	<p>5.7-1 <i>Grading and construction within the Project area would result in temporary noise and/or vibration impacts to nearby noise sensitive receptors. Analysis has concluded that construction noise and vibration impacts would be less than significant following compliance with the County requirements.</i></p>	<p>5.7-1a Construction activities shall be limited to the hours of 7:00 a.m. and to 7:00 p.m. Monday to Saturday and prohibited on Sundays and Federal Holidays.</p> <p>5.7-1b All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the County Engineer.</p> <p>5.7-1c Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors, to the satisfaction of the County Engineer.</p> <p>5.7-1d Stockpiling and staging areas shall be located as far as practical from noise sensitive receptors during construction activities, to the satisfaction of the County Engineer.</p>	<p>No unavoidable significant impacts related to noise have been identified following implementation of recommended mitigation measures and compliance with applicable requirements set forth by the County of San Bernardino and the Big Bear Municipal Water District.</p>
	Long-Term Noise Impacts		
	<p>5.7-2 <i>Implementation of the Moon Camp Project would generate additional vehicular travel on the surrounding roadway network, thereby resulting in noise level increases. Analysis has concluded that long-term noise impacts would be less than significant for all analyzed roadway segments in</i></p>	<p>5.7-2 No mitigation measures are recommended.</p>	

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Year 2006 and Year 2025 traffic scenarios. No mitigation measures are recommended.

Stationary Noise

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| 5.7-3 | <i>Implementation of the Moon Camp project would result in on-site noise associated with residential and parking lot activities and boat loading/unloading activities at the marina. Analysis has 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.</i> | 5.7-3 No mitigation measures are recommended. | |
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Watercraft Noise

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| 5.7-4 | <i>Implementation of the Moon Camp project would result in increased watercraft activities on Big Bear Lake. Analysis has 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.</i> | 5.7-4 No mitigation measures are recommended. | |
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Cumulative

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| 5.7-5 | <i>Implementation of the Moon Camp Project, combined with cumulative projects, would increase the ambient noise levels in the site vicinity. Impact analysis and mitigation of impacts are determined on a project-by-project basis.</i> | 5.7-5 No mitigation measures are recommended. | |
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5.8 BIOLOGICAL RESOURCES

Special Status Biological Resources

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| 5.8-1 | <i>Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to a less than significant level to biological species, with the exception of the Bald Eagle. Impacts to the Bald Eagle are concluded as significant and unavoidable.</i> | 5.8-1a Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed during a year with precipitation at least 40 percent of average for the area to determine presence or absence of special status plant species and vegetation types. Surveys shall focus on listed special status vegetation types, and Threatened or Endangered, and CNPS List 1B and 2 species whose presence could not be determined during surveys due to lack of rainfall. | Significant and unavoidable impacts related Biological Resources have been identified for impacts to Bald Eagle populations. If the County of San Bernardino approves the 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 |
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~~The location and extent of special status species populations shall be mapped and the size of the populations accurately documented.~~

accordance with section 15093 of CEQA.

~~The project applicant shall pay compensation for the loss of special status botanical resources identified on the project site by the survey by funding the purchase and management of off site habitat through contributions to a fund established by the California Wildlife Foundation on behalf of the CDFG. The California Wildlife Foundation is an independent 501(c)3 nonprofit corporation founded to assist the CDFG and other governmental agencies in the management of funds and mitigation banks designed to offset the impact of development on California's native flora and fauna. Off site habitat containing the same species as those identified within resources impacted by the proposed project shall be purchased at a ratio agreed upon by the County of San Bernardino, San Bernardino National Forest, USFWS, and CDFG. The typical mitigation ratio is 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development).~~

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.

~~If additional surveys during a year with precipitation at least 40 percent of average do not encounter additional special status plant resources, the project applicant is responsible for the mitigation of a minimum of 11.8 acres of pebble plain and open Jeffrey pine forest in the western half of the project site that is known to be occupied by the federally listed Threatened ash gray Indian paintbrush (i.e., would be required to fund the purchase of 35.4 acres of offsite habitat from the California Wildlife Foundation if the agreed mitigation ratio is 3:1).~~

Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed during a year with precipitation at least 40 percent of average for the area to determine presence or absence of special status plant species and vegetation types. Surveys shall focus on

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		<p><u>special status vegetation types, and Threatened or Endangered, and CNPS List 1B and 2 species whose presence could not be determined during surveys due to lack of rainfall. The location and extent of special status species populations shall be mapped and the size of the populations accurately documented. Pebble plain habitat acreages will be recalculated following the survey using criteria established by the Habitat Management Guide for Pebble Plain Habitat on the National Forest System (2002).</u></p> <p><u>Should avoidance/retention on-site of the 4.91 acres of Pebble Plain habitat in permanent open space under a Conservation Easement Agreement not occur, the Project Applicant shall pay compensation for the loss of special status botanical resources identified on the project site during the survey by funding the purchase, establishment of a conservation easement, and management of off-site habitat within the conservation easement by an entity approved by the CDFG. Off-site habitat containing the same species as those identified within resources impacted by the proposed project shall be purchased at a ratio of 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development). Prior to the initiation of clearing or grading activities on the project site, the conservation easement will 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 site by the management entity in perpetuity.</u></p> <p><u>If additional surveys during a year with precipitation at least 40 percent of average do not encounter additional special status plant resources, the Project Applicant is responsible for mitigating impacts to a minimum of 11.8-acres of pebble plain and open Jeffrey pine forest in the western half of the project site that is known to be occupied by the Federally-listed Threatened ash-gray</u></p>	

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		<p><u>Indian paintbrush. As such, the applicant would be required to fund the purchase and maintenance of 35.4-acres of offsite pebble plain and open Jeffrey pine forest habitat that contains special status plant species, including Ash-gray Indian paintbrush and others known to occur on the site.</u></p>	
		<p>5.8-1b Trees identified on Exhibits 3 and 4 of the Bald Eagle Survey Report (Appendix E, <u>see attached</u>) as eagle perch locations shall be preserved in place upon project completion and shall not be removed under any circumstances. Any development that may occur within the project site and in the individual lots must avoid impacts to these trees and their root structures. <u>All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees.</u> These restrictions on development 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 measure shall be identified as a Note on the Composite Development Plan.</p>	
		<p>5.8-1c 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 four 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 must avoid impacts to tagged trees and their root structures. <u>All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees.</u> These restrictions on development of the individual tentative tracts must be clearly presented and explained to any potential prospective developers</p>	

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		<p>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>5.8-1d 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>	
		<p>5.8-1e Vegetation removal, clearing, and grading on the project site shall be performed outside of the breeding and nesting season (between March and September) to minimize the effects of these activities on breeding activities of migratory birds and other species.</p>	

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		<p>5.8-1f 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 CC&Rs.</p> <p>5.8-1g Exterior construction shall be prohibited between the dates of December 1 and April 1 (of each year). Significant impacts to pebble plain habitat can be mitigated to a less than significant level through off-site preservation. The project applicant shall pay compensation for the loss of special status botanical resources identified on the site, by the survey, by contributing to the funding of purchase and management of off-site habitat. The Applicant shall acquire habitat in the Big Bear Valley and dedicate to the CDFG or suitable conservation organization. The California Wildlife Foundation is an independent 501(c)3 nonprofit corporation founded to assist the CDFG and other governmental agencies in the management of funds and mitigation banks designed to offset the impact of development on California's native flora and fauna. Off-site habitat shall be purchased at a ratio agreed upon by the County of San Bernardino, San Bernardino National Forest, USFWS, and CDFG. The typical mitigation ratio is 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development. An area containing no less than 2.1 acres of pebble plain habitat in an area located adjacent to other open space areas within the project vicinity shall be preserved in perpetuity. The preserved areas shall be protected from future development through a conservation easement or other appropriate mechanism.</p>	

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Sensitive Natural Communities/Habitats

5.8-2 *The proposed Project would impact portions of the Project site that are habitat for referenced sensitive species. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.*

5.8-2a 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).

5.8-2b 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.

5.8-2c To limit the amount of human disturbance ~~to on~~ adjacent natural open space areas, signs shall be posted along the northeastern and eastern perimeter of the project site where the property boundary abuts open space ~~directing people to keep out of the adjacent natural open space areas and to keep dogs leashed in areas adjacent to natural open space areas.~~ This requirement shall be published in the Homeowner Association CC&Rs 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.

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		<p>5.8-2d Prior to the issuance of individual building permits, landscaping designs <u>recording of the final map, a landscaping plan for the entire tract shall be prepared (inclusive of a plant palette) with native trees and plant species, and,</u> shall be submitted to the County of San Bernardino for review and approval by a qualified biologist. The review shall determine that no non-native or invasive plant species are to be used in the proposed landscaping. The biologist should suggest appropriate native plant substitutes. <u>A note shall be placed on the Composite Development Plan indicating that all proposed landscaping (including landscaping on individual lots) shall conform with 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 native trees/plants approved per the overall tract map landscaping plan. the Homeowner Association CC&Rs shall also restrict (individual lot owners) to use only native tree and plant species approved per the overall tract map landscaping plan.</u></p> <p>5.8-2e Garages with automatic door openers shall be required. No exterior construction shall occur between December 1 and April 1, when bald eagles are present. <u>Garages with automatic door openers shall be required. No exterior construction, grading or vegetation clearing shall be permitted between December 1 and April 1, which is the wintering period for bald eagles (i.e., the season when bald eagles are present in the Big Bear area).</u></p> <p>Also refer to mitigation measures 5.8-1a to 5.8-1f.</p>	
	Jurisdictional Waters		
5.8-3	Development of the proposed Project does not have <u>has</u> the potential to impact jurisdictional waters. Analysis has concluded that <u>potentially significant impacts would be reduced to a less than significant level</u> impact	5.8-3 No mitigation measures are recommended. <u>Per the direction of the California Department of Fish and Game, all unavoidable impacts to State and Federal jurisdictional lakes, streams, and associated</u>	

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	<p>would occur in this regard after regulatory compliance with implementation of the recommended mitigation measures</p>	<p><u>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.</u></p>	
	Wildlife Movement		
5.8-4	<p><i>Project implementation may interfere with the movement of a native resident or migratory wildlife species. Analysis has concluded that impacts are less than significant.</i></p>	5.8-4 No mitigation measures are recommended.	
	Regional and Local Policies/Plans		
5.8-5	<p><i>Project implementation would not conflict with adopted regional and/or local policies/plans pertaining to biological resources. Analysis has concluded that impacts are less than significant.</i></p>	5.8-5 No mitigation measures are recommended.	
	Cumulative		
5.8-6	<p>Cumulative development in the Project area may impact the area's biological resources. Analysis has concluded that with implementation of the specified mitigation and compliance with all applicable County, State and Federal regulations concerning biological resources, a less than significant impact would occur in this regard. project implementation incrementally adding to impacts on bald eagle habitat in the Big Bear Valley would result in a significant and unavoidable cumulative impact to the wintering bald eagle population on Big Bear Lake.</p>	5.8-6 No mitigation measures are recommended.	
5.9	CULTURAL RESOURCES		
	Archaeological/Historical Resources		
5.9-1	<p><i>The proposed Project may cause a significant impact to unknown archaeological and/or historic resources visible on-site. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.</i></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	No significant impacts related to Cultural Resources have been identified following implementation of mitigation measures referenced in this Section.

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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.

Paleontological Resources

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| <p>5.9-2 <i>The proposed Project may cause a significant impact to unknown paleontological resources on-site. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.</i></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 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> |
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Burial Sites

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| <p>5.9-3 <i>The proposed Project may cause a significant impact to Native American burial sites which could occur on-site. Implementation of the specified mitigation measures would reduce impacts to a less than significant level.</i></p> | <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> |
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Cumulative

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| <p>5.9-4 <i>Cumulative development may adversely affect cultural resources in the north shore area. Resources are evaluated and mitigated on a project-by-project basis.</i></p> | <p>5.9-4 No mitigation measures are recommended.</p> |
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5.10 GEOLOGY AND SOILS

Slope Stability

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| <p>5.10-1 <i>Development of the proposed Project could result in slope failures. Implementation of the recommended mitigation measures and compliance with the County Development Code and Uniform Building Code would reduce impacts to less than significant levels.</i></p> | <p>5.10-1 <u>The stability of Ssouth facing cut slopes shall be analyzed as part of the design-level geotechnical investigation.</u> Utilizing 2:1 buttressed slopes using on site native soil materials, or by constructing geotextile-reinforced soil buttresses wherefor planned unstable cut slopes are planned are typical engineering designs for stabilizing slopes. Either of these methods, or <u>other methods must</u> be approved by the San Bernardino County <u>Department of Building and Safety</u> Geologist for slope reinforcement may be utilized.</p> | <p>No significant impacts related to Geology and Soils have been identified following implementation of mitigation measures and/or compliance with applicable standards, policies and/or County of San Bernardino Development Code and standards set forth in the Uniform Building Code.</p> |
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Soil Erosion

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| <p>5.10-2 <i>Development of the proposed Project could result in accelerated soil erosion. Project compliance with the County Development Code, the Uniform Building Code and the recommended mitigation measures would reduce impacts to a less than significant level.</i></p> | <p>5.10-2a 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.</p> |
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		5.10-2b	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.
Ground Shaking			
5.10-3	<i>Development of the proposed Project may increase the number of people/structures exposed to effects associated with seismically induced ground shaking. Implementation of the recommended mitigation measures and compliance with the County Development Code and the Uniform Building Code would reduce potential impacts to less than significant.</i>	5.10-3	Engineering design for all structures and roadways shall be based on the 2001 California Uniform Building Code. Construction plans shall be in accordance with seismic design standards set forth by the County's Development Code and Uniform Building Code.
Seiche			
5.10-4	<i>Development of the proposed Project may expose people/structures to seiching as a result of significant ground motion related to an earthquake. Project compliance with recommended mitigation measures would reduce impacts to less than significant levels.</i>	5.10-4	Residential structures shall be located in areas which provide a minimum of five feet of freeboard above the high water line for any structures.
Expansive Soils			
5.10-5	<i>Development of the proposed Project may create substantial risks to life property as a result of expansive soils. Implementation of the recommended mitigation measure would reduce impacts to less than significant levels.</i>	5.10-5	Prior to grading permit issuance, geologic analysis/studies shall be required including 1) a quantitative geotechnical analysis and liquefaction, 2) a design-level geotechnical engineering report shall be required and submitted to the County of San Bernardino Department of Building and Safety for their approval, and 3) a design level engineering geology report.
Cumulative Impacts			
5.10-6	<i>The proposed Project, combined with future development, may result in increased short-term impacts such as erosion and sedimentation, and long-term seismic impacts within the area. Mitigation is incorporated on a project-by-project basis to reduce impacts to a less than significant level in areas deemed suitable for development.</i>	5.10-6	No mitigation measures are recommended.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
5.11	HYDROLOGY AND DRAINAGE Drainage and Runoff 5.11-1 <i>The proposed Project could significantly alter drainage patterns which could result in increased erosion potential and runoff. Impacts are concluded as 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).</i> Groundwater 5.11-2 <i>The proposed project may result in groundwater overdraft conditions. Although mitigation measures requiring further testing are referenced, based upon the evidence presented to date, it is concluded that groundwater overdraft is a significant adverse impact and until additional technical review is conducted, the project would result in an unavoidable adverse impact.</i>	5.11-1 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. 5.11-2 Based upon the technical analysis presented, a potential groundwater overdraft condition would occur and no additional mitigation measures have been identified. <u>5.11-2a Within three months of project approval, the Project Applicant shall submit a plan for a detailed geohydrologic investigation. The plan must present the possible sources of groundwater selected for the project and the methodology proposed to investigate those sources. If the on-site wells are to be utilized to serve this project, it must be determined if either could draw water from Big Bear Lake. The plan must be prepared by a California Registered Geologist.</u> <u>5.11-2b Within six months of plan approval, the Project Applicant shall submit the results of the geohydrologic investigation. The report must be prepared by a California Registered Geologist.</u> <u>5.11-2c Concurrently or within three months of approval by the geohydrologic report, the Project Applicant shall submit a groundwater monitoring plan in accordance with San Bernardino County's "Guidelines for Preparation of a Groundwater Monitoring Plan." The plan must be prepared by a California Registered Geologist.</u>	Due to inconclusive testing of potential overdraft conditions for the ground water basin associated with the North Shore Hydrologic Subunit, project and cumulative impacts are concluded to be significant and unavoidable. If the County of San Bernardino approves the project, the County shall be required to adopt findings in accordance with Section 15091 of the CEQA Guidelines and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA Guidelines. No additional significant impacts related to hydrology and water quality have been identified following implementation of the recommended mitigation measures and/or through regulatory compliance.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
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Water Quality – Construction

5.11-3 *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. Impacts would be reduced to a less than significant level through regulatory compliance and with incorporation of the recommended mitigation.*

5.11-3 Prior to Grading Permit issuance and as part of the Project's compliance with the NPDES requirements, a Notice of Intent (NOI) shall 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." At a minimum, the following shall be implemented from the *California Storm Water Best Management Practice Handbook - Construction Activity*:

- *CA 1 Dewatering Operations* – This operation requires the use of sediment controls to prevent or reduce the discharge of pollutants to storm water from dewatering operations.

- *CA 2 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.

- *CA 3 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.

- *CA 10 Material Delivery and Storage* – Minimize the storage of hazardous materials on-site. If stored on-site, keep in designated areas, install secondary

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>containment, conduct regular inspections and train employees.</p> <ul style="list-style-type: none"> ▪ <i>CA 11 Material Use</i> – Prevent and reduce the discharge of pesticides, herbicides, fertilizers, detergents, plaster, petroleum products and other hazardous materials from entering the storm water. ▪ <i>CA 20 Solid Waste Management</i> - 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. ▪ <i>CA 21 Hazardous Waste Management</i> - This BMP describes the requirements to properly design and maintain waste areas. ▪ <i>CA 23 Concrete Waste Management</i> – 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. ▪ <i>CA 24 Sanitary Septic Water Management</i> – Provide convenient, well-maintained facilities, and arrange regular service and disposal of sanitary waste. ▪ <i>CA 30 Vehicle and Equipment Cleaning</i> – Use off-site facilities or wash in designated areas to reduce pollutant discharge into the storm drain facilities. ▪ <i>CA 31 Vehicle and Equipment Fueling</i> – Use off-site facilities or designated areas with enclosures or coverings to reduce pollutant discharge into the storm drain facilities. ▪ <i>CA 32 Vehicle and Equipment Maintenance</i> – Use off-site facilities or designated areas with enclosing or coverings to reduce pollutant discharge into the storm 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>drain facilities. In addition, run a "dry site" to prevent pollution discharge into storm drains.</p> <ul style="list-style-type: none"> ▪ <i>CA 40 Employee and Subcontractor Training</i> – Have a training session for employees and subcontractors to understand the need for implementation and usage of BMPs. ▪ <i>ESC 2 Preservation of Existing Vegetation</i> – Minimize the removal of existing trees and shrubs since they serve as erosion control. ▪ <i>ESC 10 Seeding and Planting</i> – Provide soil stability by planting and seeding grasses, trees, shrubs, vines, and ground cover. ▪ <i>ESC 11 Mulching</i> – Stabilize cleared or freshly seeded areas with mulch. ▪ <i>ESC 20 Geotextiles and Mats</i> – Natural or synthetics material can be used for soil stability. ▪ <i>ESC Dust Control</i> – Reduce wind erosion and dust generated by construction activities by using dust control measures. ▪ <i>ESC 23 Construction Road Stabilization</i> – All on-site vehicle transport routes shall be stabilized immediately after grading and frequently maintained to prevent erosion and control dust. ▪ <i>ESC 24 – Stabilized Construction Entrance</i> – Stabilize the entrance pad to the construction area to reduce amount of sediment tracked off-site. ▪ <i>ESC 30 Earth Dikes</i> – Construct earth dikes of compacted soil to divert runoff or channel water to a desired location. ▪ <i>ESC 31 Temporary Drains and Swales</i> – 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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<ul style="list-style-type: none"> ▪ <i>ESC 40 Outlet Protection</i> – Use rock or grouted rock at outlet pipes to prevent scouring of soil caused by high velocities. ▪ <i>ESC 41 Check Dams</i> – 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. ▪ <i>ESC 50 Silt Fence</i> – 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. ▪ <i>ESC 51 Straw Bale Barrier</i> – 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. ▪ <i>ESC 52 Sand Bag Barriers</i> – By stacking sand bags on a level contour, a barrier is created to detain sediment-laden water. The barrier promotes sedimentation. ▪ <i>ESC 53 Brush or Rock Filter</i> – 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. ▪ <i>ESC 54 Storm Drain Inlet Protection</i> – Devices that remove sediment from sediment laden storm water before entering the storm drain inlet or catch basin. ▪ <i>ESC 55 Sediment Trap</i> – A sediment trap is a small, excavated, or bermed area where runoff for small drainage areas can pass through allowing sediment to settle out. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
	Water Quality – Long-Term		
5.11-4	<p><i>Project development may 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.</i></p>	<p>5.11-4a Prior to Grading Permit issuance, a Water Quality Management Plan 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 <i>Water Quality Management Plan (WQMP) for Urban Runoff</i>.</p> <ul style="list-style-type: none"> ▪ <i>Education for Property Owners, Tenants and Occupations</i> – 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. ▪ <i>Activity Restrictions</i> – The developer shall prepare conditions, covenants and restriction of the protection of surface water quality. ▪ <i>Common Area Landscape Management</i> – 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. ▪ <i>Common Area Catch Basin Inspection</i> – 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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<ul style="list-style-type: none"> ▪ <i>Common Area Litter Control</i> – POAs shall be required to implement trash management and litter control procedures to minimize pollution to drainage waters. ▪ <i>Street Sweeping Private Streets and Parking Lots</i> – 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. <p>The following controls from the <i>California Storm Water Best Management Practice Handbook - Municipal</i> shall be employed:</p> <ul style="list-style-type: none"> ▪ <i>SC10 Housekeeping Practices</i> - This entails practices such as cleaning up spills, proper disposal of certain substances and wise application of chemicals. ▪ <i>SC32 Used Oil Recycling</i> - May apply to maintenance and security vehicles. ▪ <i>SC72 Vegetation Controls</i> – 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. ▪ <i>SC73 Storm Drain Flushing</i> - 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>5.11-4b 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,</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>sedimentation and siltation. The structural BMPs shall conform to the San Bernardino County NPDES permit and the San Bernardino WQMP standards.</p>	
		<p>Consistent with the WQMP guidelines contained in the <i>Draft National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements</i> for San Bernardino County, Structural BMPs shall be required for the proposed 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.</p>	
		<p>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 <u>Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998)</u>; or ▪ The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in <u>California Stormwater Best Management Practice Handbook – Industrial/Commercial (1993)</u>; 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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<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>The following are the minimum required controls to be implemented as a part of the <i>Water Quality Management Plan (WQMP) for Urban Runoff</i>.</p> <ul style="list-style-type: none"> ▪ <i>Control of Impervious Runoff</i> – Surface runoff shall be directed to landscaped areas or pervious areas. ▪ <i>Common Area Efficient Irrigation</i> – 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. ▪ <i>Common Area Runoff-Minimizing Landscape Design</i> – Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. ▪ <i>Catch Basin Stenciling</i> – “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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<ul style="list-style-type: none"> ▪ <i>Debris Posts</i> – These shall be installed to prevent large floatable debris from entering the storm drains. They shall be placed upstream of the cross culverts. ▪ <i>Inlet Trash Racks</i> – 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>5.11-4c Storm water treatment under the NPDES Permit and the future TMDL requirements shall include the construction of treatment BMPs. Treatment BMPs appropriate for on-site use shall include infiltration trenches and basins, swales, inlet filtration, and/or water quality basins. All storm water runoff shall be treated before leaving the site to reduce pollutants in Big Bear Lake.</p>	
		<p><u>Infiltration Trenches and Basins</u></p> <p>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 five and 50 acres. Infiltration basins shall be either in-line or off-line, and may treat different volumes such as the water quality volume or the 2-year or 10-year storm.</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p><u>Swales</u></p> <p>The 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 Project to assure that runoff from the site is treated to the "maximum extent practicable".</p> <p>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 <u>not</u> be used in the vegetation swales.</p> <p><u>Filtration</u></p> <p>Filtration shall be implemented as a treatment method and shall use drop-in infiltration devices or inline devices.</p> <p>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.</p> <p>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</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>be added within the CDS[®] unit to aid in the removal of oil and grease. The treated flow will exit the CDS[®] unit and continue downstream.</p> <p>To assure the efficiency of these filtration devices, monitoring 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 will extend the effectiveness of the devices during a storm and will 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.</p> <p>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>	

Cumulative Impacts

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| <p>5.11-5 <i>The proposed Project along with other future development may result in increased hydrology and drainage impacts in the area. Due to inconclusive of potential overdraft conditions, cumulative groundwater impacts are concluded to be significant and unavoidable. Other hydrology and drainage impacts are evaluated on a project-by-project basis in order to mitigate to a less than significant level.</i></p> | <p>5.11-5 No mitigation measures are recommended.</p> |
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2.3 SUMMARY OF PROJECT ALTERNATIVES

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.6, Section 7.0 describes a range of reasonable alternatives to the proposed project which could feasibly attain the basic objectives of the proposed project, while evaluating the comparative merits of each alternative. The analysis focuses 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. Potential environmental impacts are compared to impacts from the proposed project. The following is a description of each of the alternatives evaluated in Section 7.0.

“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. The following discussion evaluates the potential environmental impacts associated with the No Project/No Development Alternative as compared to impacts from the proposed Project.

“NO PROJECT/EXISTING DESIGNATION” 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). This Alternative would result in 1.5 residential lots on the project site. This Alternative would be less intensive than the proposed Project. Approximately three persons (1.5 housing units x 2.15 persons/household) would be added to the permanent 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 proposed Project.

“REDUCED DENSITY, WITHOUT ROAD ALIGNMENT AND WITHOUT MARINA” ALTERNATIVE

For the Reduced Density, Without Road Realignment and Without Marina Alternative, development of 62 residential lots and associated infrastructure (as depicted in the project description) would occur on the north side of the existing State Route 38 alignment. State Route 38 would not be realigned and no residential development would occur to the south of State Route 38. The land area south of State Route 38, along the lakefront, would be retained in its current state. Approximately 133 persons (62 housing units x 2.15 persons/household) would be added to the permanent 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 project site. Implementation of this Alternative would include the realignment of State Route 38. Twenty-one (21) and 45 lots would be developed on the south and north sides of the realigned State Route 38, respectively. This Alternative would include a marina facility, with 72 boat slips. Approximately 142 persons (66 housing units x 2.15 persons/household) would be added to the permanent population of the Community of Fawnskin.

2.0 Executive Summary

2.0 EXECUTIVE SUMMARY

2.1 PROJECT ANALYSIS SUMMARY

The proposed Moon Camp Tentative Tract #16136 Residential Subdivision (“Moon Camp”) encompasses approximately 62.43 acres along the northwest shore of Big Bear Lake, in the community of Fawnskin, County of San Bernardino. The Project site is located adjacent to the northwest shore of the Big Bear Lake, in the relatively undeveloped eastern portion of Fawnskin. 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 Oriole Lane/Canyon Road to the west.

The Project proposes a 95-lot residential subdivision with lots ranging in size from 0.17 acres (7,292 square feet) to 2.11 acres. Lots would be sold individually and development of lots and construction of homes would be by custom design. The proposal is a Tentative Tract Map for 92 numbered and three lettered lots. The three lettered lots are identified as follows: (1) Lot “A” is a private street designed to provide access to the southernmost lots; (2) Lot “B” is a 1.4-acre strip of land that would remain between the relocation of State Route 38 and the private Street, Lot “A”; and (3) Lot “C” is a gated entrance to the Project, including a proposed boat dock, consisting of 100 boat slips, which would be available for use by residents of the tract and accessible by Lot “C”.

The Project includes relocation of North Shore Drive, also referred to as State Route 38, to allow development of lakeshore lots. An approximately 2,498-foot segment of the roadway would be relocated. The maximum distance of relocation, as designed, is 207 feet to the north. The design includes a 76-foot road width, with 14-foot shoulder/bikeway access, resulting in a 104-foot right-of-way via a loop road that would include five separate cul-de-sac drives to access lakefront lots.

This EIR includes a comprehensive review of project affects, the significance of the affects and recommended mitigation measures. Section 5.0 of this EIR concludes that the proposed Project would generate impacts related to public services, utilities, aesthetics, traffic/circulation, air quality, noise, biological resources, cultural resources, geology/soils and hydrology/drainage. All impacts, with the exception of those identified for public services/utilities (ability to be served water), aesthetics, air quality, biological resources and hydrology (groundwater) can be mitigated to less than significant levels. The identified public services/utilities (ability to be served by water), aesthetic, air quality, biological resources and hydrology (groundwater) impacts require findings in accordance with Section 15091 of CEQA and a Statement of Overriding Considerations in accordance with Section 15093 of CEQA.

2.2 ENVIRONMENTAL ISSUES/MITIGATION SUMMARY

The following is a brief summary of the impacts, mitigation measures, and unavoidable significant impacts identified and analyzed in Section 5.0 of this EIR. Refer to the appropriate EIR Section for additional information.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
5.1	LAND USE AND RELEVANT PLANNING		
	San Bernardino County General Plan		
	5.1-1 <i>The proposed Project conflicts with the land use plan, policies and regulations set forth in the San Bernardino County General Plan. 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).</i>	5.1-1 No mitigation measures are recommended.	No unavoidable significant impacts related to Land Use and Relevant Planning have been identified following compliance with the San Bernardino County General Plan and Development Code policies and standards.
	San Bernardino County Development Code		
	5.1-2 <i>The proposed Project conflicts with the land use plan, policies and regulations of the San Bernardino County Development Code. Analysis has concluded that a less than significant impact would occur with approval of a Land Use District Change, Circulation Element Amendment and Conditional Use Permit.</i>	5.1-2 No mitigation measures are recommended.	
	Cumulative		
	5.1-3 <i>The proposed Project, combined with other future development, will increase the intensity of land uses in the area. Analysis has concluded that impacts are less than significant and no mitigation is required. Projects are evaluated on a project-by-project basis in accordance with the San Bernardino County General Plan and Development Code.</i>	5.1-3 No mitigation measures are recommended.	
5.2	RECREATION		
	Expansion and/or Construction of Recreational Facilities		
	5.2-1 <i>Implementation of the Moon Camp project involves the construction or expansion of recreational facilities which may have an adverse physical</i>	5.2-1 No mitigation measures are recommended.	No significant impacts related to Recreational facilities have been identified in this Section.

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
	<p>effect on the environment. Compliance with the Big Bear MWD standards and permit requirements would reduce impacts to a less than significant level.</p> <p>Public Access</p> <p>5.2-2 <i>Implementation of the Moon Camp project would not affect public access along the north shore of Big Bear Lake. <u>Mitigation requiring dedication of an easement along the south side of North Shore Drive has been incorporated.</u> The Project site is Private Property. Affects on public access are concluded as less than significant.</i></p> <p>Cumulative</p> <p>5.2-3 <i>Cumulative development may result in increased use of existing recreational areas/facilities, thereby creating the potential for physical deterioration. Additionally, cumulative development may include recreational facilities (i.e., marina) that have the potential to result in physical impacts on the environment. Mitigation measures necessary for reducing impacts are addressed on a project-by-project basis to reduce impacts to a less than significant level.</i></p>	<p>5.2-2 No mitigation measures are recommended. <u>The proposed project shall be conditioned to incorporate a pedal path easement along the south side of North Shore Drive, prior to map recordation.</u></p> <p>5.2-3 No mitigation measures are recommended.</p>	
5.3	PUBLIC SERVICES AND UTILITIES		
	<p>Fire Protection</p> <p>5.3-1 <i>Project implementation could result in significant physical impacts with respect to fire protection. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures.</i></p>	<p>5.3-1a 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.</p> <p>5.3-1b Fire sprinklers for each residence shall be provided in lieu of additional manpower. 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 have a larger sprinkler requirement (FPA13R).</p> <p>5.3-1c A Fuels modification program <u>Management Plan</u>, with specifications, shall be prepared and</p>	

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		<p>subject to approval by the County of San Bernardino <u>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 30-foot minimum setback requirement from the National Forest. The fuel modification zone shall be located entirely within the project's boundaries. The 100 foot fuel modification requirement shall not terminate at a property line. The 100 foot fuel modification requirement shall extend beyond property lines. Where such fuel modification zone extends onto U.S. Forest Service land, an easement or permit shall be required to be obtained. The <u>minimum 100 foot fuel modification zone requirements</u> may be greater in steeper areas (up to 300 ft.), as determined by the Fire Agency Department.</u></p>	
		<p>5.3-1d Cul-de-sac lengths shall be no longer than 350 feet.</p>	
		<p>5.3-1e A Homeowner's Association or a Special District shall be established to assure <u>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. Long-term vegetation maintenance. An annual vegetation maintenance program shall be included. The HOA or Special District is to be responsible for fuel modification in common areas.</u></p>	
		<p>5.3-1f Fire resistance/drought tolerant landscaping shall be required and referenced in the Homeowner's Association or Special District Standards.</p>	

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Police Protection			
5.3-2	<i>Project implementation could result in significant physical impacts with respect to police protection. Analysis has concluded that a less than significant impact would occur.</i>	5.3-2 No mitigation measures are recommended.	
Schools			
5.3-3	<i>Project implementation could result in significant physical impacts to existing school facilities. Potential impacts to school facilities are concluded as less than significant following payment of school impact fees and compliance with all applicable requirements, codes, and ordinances.</i>	5.3-3 No mitigation measures are recommended.	
Libraries			
5.3-4	<i>Project implementation would increase the demand on library services. Analysis has concluded that that a less than significant impact would occur.</i>	5.3-4 No mitigation measures are recommended.	
Wastewater			
5.3-5	<i>Project implementation would generate additional wastewater beyond current conditions. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures.</i>	5.3-5a Prior to issuance of building permits, the Project 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 BBARWA, and may include replacement of existing sewer lines rather than construction of parallel lines. 5.3-5b Prior to issuance of building permits, the Project 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. 5.3-5c The Project Applicant shall relocate the BBARWA 10" force main by installing new pipe <u>(and/or bonding for the relocation)</u> so that it is aligned within the south shoulder of the relocated State Route 38. The 10" force main shall be accessible for BBARWA to maintain and repair the sewer force main. The force main shall not pass through residential lots within the proposed tract.	

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Water

		<p>5.3-5d The Project 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.</p>	
<p>5.3-6</p>	<p><i>Project implementation would increase the demand for water beyond existing conditions. Analysis has concluded that due to the inability of water providers to confirm service to the project, impacts are concluded as significant and adverse. This conclusion is further supported by the potentially significant groundwater overdraft conditions cited in Section 5.11 of the EIR.</i></p>	<p>5.3-6a Prior to approval of building permits, a video inspection of water supply easings and screen shall be conducted in order to update <u>Values of production rates and pumping levels for on-site water supply wells shall be obtained through step-drawdown and constant rate pumping tests.</u> Water samples shall be taken during the inspection for testing and analysis in accordance with standard requirements.</p> <p>5.3-6b If either or both of the two existing on-site wells are utilized as a water source for the project, the Project Applicant shall equip the two existing on-site wells to meet DWP and/or County Special Districts Department standards and dedicate these facilities and water rights to the appropriate water purveyor <u>County of San Bernardino.</u> Within the proposed tract, no individual private irrigation wells shall be permitted.</p> <p>5.3-6c If served by CSA 53-C through a contract with the City of Big Bear Lake Department of Water and Power, After a determination has been made regarding the water purveyor, the Project Applicant shall advance fair-share funds or enter into a reimbursement agreement with the to the appropriate water agency (CSA and/or DWP) (if required) towards constructing a new reservoir and pipeline improvement at Cline-Miller Reservoir (with an estimated project cost at \$481,100). <u>These facilities would be dedicated to the appropriate water agency.</u></p> <p>5.3-6d The following water conservation measures are the minimum measures that shall be complied with in conjunction with domestic water supply to the project. <u>A Homeowners Association shall be</u></p>	<p>Due to the inability of water providers to confirm service to the project, project as well as cumulative impacts are concluded as significant and unavoidable. This conclusion is further supported by the significant and unavoidable conclusion cited in Section 5.11, <i>Hydrology and Drainage</i>, due to inconclusive testing of potential overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit.</p> <p>If the County of San Bernardino approves the project, the County shall be required to adopt findings in accordance with Section 15091 of the CEQA Guidelines and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA Guidelines.</p> <p>No additional unavoidable significant impacts related to public services and utilities have been identified following implementation of the recommended mitigation measures and compliance with applicable County, service or utility provider requirements, County Codes and Ordinances.</p>

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responsible for enforcing the water conservation measures. Additional measures may be imposed as a result of a contract for water supply between CSA 53-C and the City of Big Bear Lake DWP:

- Landscape shall not be irrigated between the hours of nine (9) a.m. and six (6) p.m.
- Residences, buildings and premises shall be limited to watering every other day.
- Landscape irrigation shall be limited to what is needed and shall not be excessive. Water from landscape irrigation shall not be allowed to run off into streets.
- Water shall not be allowed to leak from any waterline, faucet, or any other facility, either within or outside a private residence, business establishment or on private property. All such leaking waterlines, faucets, and other facilities shall be repaired immediately to prevent leakage.
- Sidewalks, paved driveways, and parkways shall not be washed off with hoses, except as required for sanitary purposes.
- Non-commercial washing of cars, and boats or any other vehicle shall only be done with an automatic shut-off nozzle on a hose, or with a bucket.
- New landscaping shall not exceed more than one-thousand square feet of turf on a parcel or lot or twenty-five percent of the available landscape area.
- A model landscaping and irrigation guide shall be prepared for the tract and required by homeowner association rules. The guide shall specify a plant palate that emphasizes native plants and cultivars that are suitable for the mountain climate. Plant materials shall be low water consuming and fire resistant. Irrigation shall emphasize drip and bubbler type emitters with limit aerial spray

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		irrigation methods. The guide shall be reviewed and approved by the Land Use Services Department.	
Solid Waste			
5.3-7	<i>Development of the Project area would result in increased solid waste generation. Project compliance with the Integrated Waste Management Plan for the County of San Bernardino (currently being revised) 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.</i>	5.3-7 No mitigation measures are recommended.	
Natural Gas			
5.3-8	<i>Project implementation would result in an increased demand for natural gas service beyond existing conditions and would require expansion of the existing gas system. Analysis has concluded that a less than significant impact would occur in this regard.</i>	5.3-8 No mitigation measures are recommended.	
Electricity			
5.3-9	<i>Project implementation would result in an increased demand for electrical service beyond existing conditions and would require expansion of the existing electrical system. Analysis has concluded that impacts would be less than significant.</i>	5.3-9 No mitigation measures are recommended.	
Cumulative Impacts			
5.3-10	<i>Cumulative development could result in an increased demand for public services and an increase in the consumption rates for public utilities, potentially requiring expansions of the existing utility systems. The inability of water providers to confirm service on a project level would also result in significant and unavoidable cumulative impacts. Analysis has concluded that cumulative development for the remaining service and utility affects are subject to standards and requirements of reviewing agencies and no additional mitigation is recommended.</i>	5.3-10 No mitigation measures are recommended.	

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5.4	AESTHETICS/LIGHT AND GLARE		
	Short-Term Aesthetic/Light and Glare Impacts		
5.4-1	<i>Construction of the proposed project would temporarily alter the visual appearance of the site and introduce new short-term sources of light and glare. Analysis has concluded that impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures.</i>	5.4-1a 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. 5.4-1b All construction-related lighting associated with the construction of new roadways, the realignment of State Route 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 concomitant with Grading Permit applications for the subdivision of the lots.	Significant and unavoidable impacts related to Aesthetics/Light and Glare have been identified for viewshed alterations involving existing residents to the north, east and west of the project site. Additionally, significant and unavoidable impacts have been identified for views from State Route 38, a scenic highway, to the south and from the south shore of Big Bear Lake. If the County of San Bernardino approves the 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.
	Long-Term Aesthetic Impacts		
5.4-2	<i>Implementation of the Moon Camp project would adversely impact scenic resources, scenic vistas and the visual character of the site and its surroundings. Analysis has concluded that a significant and unavoidable impact to the visual character and viewshed from the project site and surrounding areas would occur which cannot be mitigated to a less than significant level.</i>	5.4-2a Roof pitches shall not exceed 9/12 and no higher than two-story for any portion of the structure footprint for lots 62-92. 5.4-2b All homes shall provide a two-car garage with automatic garage doors. 5.4-2c A view envelope for each property shall be established by creating a line starting at 6 feet at each side lot line and moving up at a 30 degree angle until both lines meet at the middle of the property. The area located under these lines is the view envelope. Structures shall not protrude outside the view envelope. The view envelope orients the building ridgeline parallel to the view corridors on narrower lots providing views for residents located behind the property.	No additional significant impacts related to Aesthetic/Light and Glare have been identified following implementation of mitigation measures and/or compliance with applicable standards, requirements and/or policies by the County of San Bernardino.

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		<p>5.4-2d 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, pale yellows, and shall be consistent with the mountain character of the area.</p> <p>5.4-2e Outside parking/storage areas associated with the boat dock activities shall be completely 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.</p> <p>5.4-2f 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 mature growth. The removal of existing vegetation shall not be required to create views.</p> <p>5.4-2g 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.</p>	

Long-Term Scenic Highway Impacts

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| <p>5.4-3 <i>Implementation of the Moon Camp project would impact views of Big Bear Lake, the distant mountain ranges to the south and adjacent forest areas from North Shore Drive</i></p> | <p>5.4-3a Any entry sign for the development shall be a monument style sign compatible with the mountain character, preferably, rock or rock-appearance.</p> |
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	<p><i>(State Route 38) which is a County and Federally recognized Scenic Highway/Byway. Analysis has concluded that significant and unavoidable impacts would occur as a result of project development.</i></p>	<p>5.4-3b Prior to recordation of the tract map (and/or any ground disturbance, whichever occurs first), landscaping plans for lettered lots B and C shall be submitted to and approved by the San Bernardino County Planning Department.</p>	
	<p>Long-Term Light and Glare Impacts</p>		
5.4-4	<p><i>The proposed Moon Camp project would introduce additional light and glare on-site which may affect the surrounding residents. Analysis has concluded that potential impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures.</i></p>	<p>5.4-4a 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.</p> <p>5.4-4b 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.</p> <p>5.4-4c 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.</p> <p>5.4-4d 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.</p> <p>5.4-4e Mitigation Measures 5.4-4a through 5.4-4d shall be included within the Conditions, Covenants and Restrictions (CC&Rs) of the Home Owner's Association (HOA).</p> <p><u>5.4-4f All outdoor light fixtures shall be cutoff luminaries and shall only use high- or low-pressure sodium lamps.</u></p> <p><u>5.4-4g The Project Applicant/Developer shall install light colored, reflective roof products. Such roofs shall utilize light colored, reflective</u></p>	

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materials that meet the performance standards developed by the Energy Star Labeled Roof Program, as well as the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standards 90.1 and 90.2 on energy efficient buildings. This condition shall be verified by the County of San Bernardino Building and Safety Division prior to issuance of building permits.

Cumulative Impacts

5.4-5	<i>Build-out of the Moon Camp development, together with cumulative projects, may alter the nature and appearance of the area and contribute to the loss of undeveloped areas. Analysis has concluded that no significant impacts beyond the analysis contained in the County of San Bernardino General Plan and General Plan EIR are anticipated.</i>	5.4-5	No mitigation measures are recommended.
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5.5 TRAFFIC AND CIRCULATION

Existing Conditions with Project Traffic Analysis

5.5-1	<i>The intersection of Stanfield Cutoff and Big Bear Boulevard currently operates above 100 percent utilization in the peak month weekday evening peak hour. Although the Project does not generate significant traffic volumes, it would contribute to the intersection utilization at the weekday evening peak hour. Pro-rata share payment for intersection improvements to the intersection would reduce project affects to less than significant levels.</i>	5.5-1	For existing traffic conditions, the intersection of Stanfield Cutoff and Big Bear Boulevard currently requires the eastbound right turn lane to be converted to an eastbound through lane, through the intersection. The eastbound right turn lane is restricted to an eastbound through lane, and involves roadway widening. The project's pro rata share of these off-site road improvements is estimated to be \$17,748.	Following implementation of recommended mitigation measures, Traffic and Circulation impacts would be reduced to a less than significant level.
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Year 2006 Traffic Analysis

5.5-2	<i>Project implementation, with year 2006 traffic conditions, would result in an increase in traffic volumes. Analysis has concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff and Big Bear Boulevard to a less than significant level.</i>	5.5-2	Refer to Mitigation Measure 5.5-1. No additional mitigation measures are recommended.
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Year 2025 Traffic Analysis			
5.5-3	<i>Project implementation, with year 2025 traffic conditions, would result in an increase in traffic volumes. Analysis has concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff/Big Bear Boulevard and Stanfield Cutoff/North Shore Drive to a less than significant level.</i>	5.5-3 For future traffic conditions, the intersection of Stanfield Cutoff and North Shore Drive shall require a traffic signal. The project's pro rata share of the signal is \$56,523.	
Safety Hazards and Emergency Access			
5.5-4	<i>Project implementation may increase hazards to vehicles, pedestrians and bicyclists due to the proposed project. Analysis has concluded that with implementation of the recommended mitigation measures, impacts would be less than significant.</i>	5.5-4a Parking shall be restricted on State Route 38. 5.5-4b A 150-foot eastbound left turn pocket shall be striped for traffic on North Shore Drive turning left into the project entry locations. 5.5-4c For future traffic conditions, intersection geometrics as recommended in Table 1b of the Kunzman Associates June 2003 <i>Traffic Analysis</i> report, shall be implemented. 5.5-4d All streets internal to the project shall be constructed to full ultimate cross-sections. as adjacent development occurs. 5.5-4e A STOP sign shall be installed to control outbound traffic on all site access roadways onto North Shore Drive. 5.5-4f The County of San Bernardino shall periodically review traffic operations in the vicinity of the site once the project is constructed in order to assure that the traffic operations are satisfactory. 5.5-4g Landscape plantings and signs shall be limited to 36 inches in height within 25 feet of project driveways to assure good visibility.	
5.6	AIR QUALITY		
Short-Term Air Quality Impacts			
5.6-1	<i>Significant short-term air quality impacts would occur during site</i>	5.6-1 In accordance with the County Development Code and SCAQMD	The following air quality impacts would remain

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	<p><i>preparation and project construction. These impacts are considered significant before and after mitigation for ROG and NOx emissions from construction equipment exhaust. Impacts would be less than significant for other pollutants. (Mitigation in this instance refers to applicable County Development Code Sections and SCAQMD Rules.)</i></p>	<p>Rules, the Project Applicant shall incorporate the following measures during the construction phase of the Project to the satisfaction of the SCAQMD and County of San Bernardino. Compliance with this measure is subject to periodic field inspections by the SCAQMD and County of San Bernardino.</p> <p><u>Grading:</u></p> <p>Apply non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded for ten days or more);</p> <ul style="list-style-type: none"> ▪ Replace ground cover in disturbed areas as quickly as possible; ▪ Enclose, cover, water two times daily or apply non-toxic soil binders in accordance to manufacturer's specifications to exposed piles (i.e., gravel, sand, dirt) with 5% or greater silt content; ▪ Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph; and ▪ All trucks hauling dirt, sand, soil, or other loose materials shall be covered and shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer). <p><u>Paved Roads:</u></p> <ul style="list-style-type: none"> ▪ Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads. 	<p>significant and unavoidable following mitigation:</p> <ul style="list-style-type: none"> ▪ ROG and NOx from construction activities; ▪ Project Operations: Exceedance of State and/or Federal emission levels (ROG, CO and PM10) from project operations; and ▪ Project implementation would result in a significant un-avoidable impact with respect to consistency with the AQMP. <p>If the County of San Bernardino approves the 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.</p>

Long-Term Operational Impacts

5.6-2 *The project 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 SCAQMD thresholds for ROG, CO and*

5.6-2 To the extent feasible, the project shall incorporate the installation of EPA-certified wood burning stoves or fireplaces. If this is not feasible, then the installation of a ceramic coating on the honeycomb inside a catalytic combustor shall be investigated as a feasible alternative. Alternatively, the

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	<p><i>PM₁₀. These exceedances are considered significant and cannot be mitigated to a less than significant level.</i></p> <p>Consistency with Air Quality Management Plan</p>	<p>use of natural gas fireplaces may be used as a feasible alternative.</p>	
	<p>5.6-3 <i>The project would not conflict with the Air Quality Management Plan (AQMP). Analysis has concluded that the proposed project is consistent with the AQMP criteria.</i></p>	<p>5.6-3 No mitigation measures are recommended.</p>	
	<p>Cumulative Impacts</p>		
	<p>5.6-4 <i>Cumulative impacts to regional air quality resulting from development of the proposed Project would be less than significant.</i></p>	<p>5.6-4 No mitigation measures are recommended.</p>	
5.7	NOISE		
	<p>Short-Term Construction Noise and Vibration Impacts</p>		
	<p>5.7-1 <i>Grading and construction within the Project area would result in temporary noise and/or vibration impacts to nearby noise sensitive receptors. Analysis has concluded that construction noise and vibration impacts would be less than significant following compliance with the County requirements.</i></p>	<p>5.7-1a Construction activities shall be limited to the hours of 7:00 a.m. and to 7:00 p.m. Monday to Saturday and prohibited on Sundays and Federal Holidays.</p> <p>5.7-1b All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the County Engineer.</p> <p>5.7-1c Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors, to the satisfaction of the County Engineer.</p> <p>5.7-1d Stockpiling and staging areas shall be located as far as practical from noise sensitive receptors during construction activities, to the satisfaction of the County Engineer.</p>	<p>No unavoidable significant impacts related to noise have been identified following implementation of recommended mitigation measures and compliance with applicable requirements set forth by the County of San Bernardino and the Big Bear Municipal Water District.</p>
	<p>Long-Term Noise Impacts</p>		
	<p>5.7-2 <i>Implementation of the Moon Camp Project would generate additional vehicular travel on the surrounding roadway network, thereby resulting in noise level increases. Analysis has concluded that long-term noise impacts would be less than significant for all analyzed roadway segments in</i></p>	<p>5.7-2 No mitigation measures are recommended.</p>	

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Year 2006 and Year 2025 traffic scenarios. No mitigation measures are recommended.

Stationary Noise

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| 5.7-3 | <i>Implementation of the Moon Camp project would result in on-site noise associated with residential and parking lot activities and boat loading/unloading activities at the marina. Analysis has 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.</i> | 5.7-3 No mitigation measures are recommended. | |
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Watercraft Noise

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| 5.7-4 | <i>Implementation of the Moon Camp project would result in increased watercraft activities on Big Bear Lake. Analysis has 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.</i> | 5.7-4 No mitigation measures are recommended. | |
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Cumulative

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| 5.7-5 | <i>Implementation of the Moon Camp Project, combined with cumulative projects, would increase the ambient noise levels in the site vicinity. Impact analysis and mitigation of impacts are determined on a project-by-project basis.</i> | 5.7-5 No mitigation measures are recommended. | |
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5.8 BIOLOGICAL RESOURCES

Special Status Biological Resources

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| 5.8-1 | <i>Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to a less than significant level to biological species, with the exception of the Bald Eagle. Impacts to the Bald Eagle are concluded as significant and unavoidable.</i> | 5.8-1a Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed during a year with precipitation at least 40 percent of average for the area to determine presence or absence of special status plant species and vegetation types. Surveys shall focus on listed special status vegetation types, and Threatened or Endangered, and CNPS List 1B and 2 species whose presence could not be determined during surveys due to lack of rainfall. | Significant and unavoidable impacts related Biological Resources have been identified for impacts to Bald Eagle populations. If the County of San Bernardino approves the 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 |
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~~The location and extent of special status species populations shall be mapped and the size of the populations accurately documented.~~

accordance with section 15093 of CEQA.

~~The project applicant shall pay compensation for the loss of special status botanical resources identified on the project site by the survey by funding the purchase and management of off site habitat through contributions to a fund established by the California Wildlife Foundation on behalf of the CDFG. The California Wildlife Foundation is an independent 501(c)3 nonprofit corporation founded to assist the CDFG and other governmental agencies in the management of funds and mitigation banks designed to offset the impact of development on California's native flora and fauna. Off site habitat containing the same species as those identified within resources impacted by the proposed project shall be purchased at a ratio agreed upon by the County of San Bernardino, San Bernardino National Forest, USFWS, and CDFG. The typical mitigation ratio is 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development).~~

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.

~~If additional surveys during a year with precipitation at least 40 percent of average do not encounter additional special status plant resources, the project applicant is responsible for the mitigation of a minimum of 11.8 acres of pebble plain and open Jeffrey pine forest in the western half of the project site that is known to be occupied by the federally listed Threatened ash gray Indian paintbrush (i.e., would be required to fund the purchase of 35.4 acres of offsite habitat from the California Wildlife Foundation if the agreed mitigation ratio is 3:1).~~

Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed during a year with precipitation at least 40 percent of average for the area to determine presence or absence of special status plant species and vegetation types. Surveys shall focus on

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		<p><u>special status vegetation types, and Threatened or Endangered, and CNPS List 1B and 2 species whose presence could not be determined during surveys due to lack of rainfall. The location and extent of special status species populations shall be mapped and the size of the populations accurately documented. Pebble plain habitat acreages will be recalculated following the survey using criteria established by the Habitat Management Guide for Pebble Plain Habitat on the National Forest System (2002).</u></p> <p><u>Should avoidance/retention on-site of the 4.91 acres of Pebble Plain habitat in permanent open space under a Conservation Easement Agreement not occur, the Project Applicant shall pay compensation for the loss of special status botanical resources identified on the project site during the survey by funding the purchase, establishment of a conservation easement, and management of off-site habitat within the conservation easement by an entity approved by the CDFG. Off-site habitat containing the same species as those identified within resources impacted by the proposed project shall be purchased at a ratio of 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development). Prior to the initiation of clearing or grading activities on the project site, the conservation easement will 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 site by the management entity in perpetuity.</u></p> <p><u>If additional surveys during a year with precipitation at least 40 percent of average do not encounter additional special status plant resources, the Project Applicant is responsible for mitigating impacts to a minimum of 11.8-acres of pebble plain and open Jeffrey pine forest in the western half of the project site that is known to be occupied by the Federally-listed Threatened ash-gray</u></p>	

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		<u>Indian paintbrush. As such, the applicant would be required to fund the purchase and maintenance of 35.4-acres of offsite pebble plain and open Jeffrey pine forest habitat that contains special status plant species, including Ash-gray Indian paintbrush and others known to occur on the site.</u>	
		5.8-1b Trees identified on Exhibits 3 and 4 of the Bald Eagle Survey Report (Appendix E, <u>see attached</u>) as eagle perch locations shall be preserved in place upon project completion and shall not be removed under any circumstances. Any development that may occur within the project site and in the individual lots must avoid impacts to these trees and their root structures. <u>All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees.</u> These restrictions on development 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 measure shall be identified as a Note on the Composite Development Plan.	
		5.8-1c 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 four 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 must avoid impacts to tagged trees and their root structures. <u>All construction or landscaping improvements, including irrigation, will be prohibited on or around the exposed root structures or within the dripline of these trees.</u> These restrictions on development of the individual tentative tracts must be clearly presented and explained to any potential prospective developers	

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		<p>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>5.8-1d 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>	
		<p>5.8-1e Vegetation removal, clearing, and grading on the project site shall be performed outside of the breeding and nesting season (between March and September) to minimize the effects of these activities on breeding activities of migratory birds and other species.</p>	

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		<p>5.8-1f 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 CC&Rs.</p> <p>5.8-1g Exterior construction shall be prohibited between the dates of December 1 and April 1 (of each year). Significant impacts to pebble plain habitat can be mitigated to a less than significant level through off-site preservation. The project applicant shall pay compensation for the loss of special status botanical resources identified on the site, by the survey, by contributing to the funding of purchase and management of off-site habitat. The Applicant shall acquire habitat in the Big Bear Valley and dedicate to the CDFG or suitable conservation organization. The California Wildlife Foundation is an independent 501(c)3 nonprofit corporation founded to assist the CDFG and other governmental agencies in the management of funds and mitigation banks designed to offset the impact of development on California's native flora and fauna. Off-site habitat shall be purchased at a ratio agreed upon by the County of San Bernardino, San Bernardino National Forest, USFWS, and CDFG. The typical mitigation ratio is 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development. An area containing no less than 2.1 acres of pebble plain habitat in an area located adjacent to other open space areas within the project vicinity shall be preserved in perpetuity. The preserved areas shall be protected from future development through a conservation easement or other appropriate mechanism.</p>	

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Sensitive Natural Communities/Habitats

5.8-2 *The proposed Project would impact portions of the Project site that are habitat for referenced sensitive species. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.*

5.8-2a 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).

5.8-2b 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.

5.8-2c To limit the amount of human disturbance ~~to on adjacent natural open space areas~~, signs shall be posted along the northeastern and eastern perimeter of the project site where the property boundary abuts open space ~~directing people to keep out of the adjacent natural open space areas and to keep dogs leashed in areas adjacent to natural open space areas~~. This requirement shall be published in the Homeowner Association CC&Rs 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.

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		<p>5.8-2d Prior to the issuance of individual building permits, landscaping designs <u>recording of the final map, a landscaping plan for the entire tract shall be prepared (inclusive of a plant palette) with native trees and plant species, and,</u> shall be submitted to the County of San Bernardino for review and approval by a qualified biologist. The review shall determine that no non-native or invasive plant species are to be used in the proposed landscaping. The biologist should suggest appropriate native plant substitutes. <u>A note shall be placed on the Composite Development Plan indicating that all proposed landscaping (including landscaping on individual lots) shall conform with 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 native trees/plants approved per the overall tract map landscaping plan. the Homeowner Association CC&Rs shall also restrict (individual lot owners) to use only native tree and plant species approved per the overall tract map landscaping plan.</u></p> <p>5.8-2e Garages with automatic door openers shall be required. No exterior construction shall occur between December 1 and April 1, when bald eagles are present. <u>Garages with automatic door openers shall be required. No exterior construction, grading or vegetation clearing shall be permitted between December 1 and April 1, which is the wintering period for bald eagles (i.e., the season when bald eagles are present in the Big Bear area).</u></p> <p>Also refer to mitigation measures 5.8-1a to 5.8-1f.</p>	
	Jurisdictional Waters		
	<p>5.8-3 Development of the proposed Project does not have<u>has</u> the potential to impact jurisdictional waters. Analysis has concluded that <u>potentially significant impacts would be reduced to a less than significant level</u>impact</p>	<p>5.8-3 No mitigation measures are recommended. <u>Per the direction of the California Department of Fish and Game, all unavoidable impacts to State and Federal jurisdictional lakes, streams, and associated</u></p>	

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	<p>would occur in this regard after regulatory compliance with implementation of the recommended mitigation measures</p>	<p><u>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.</u></p>	
	Wildlife Movement		
5.8-4	<p><i>Project implementation may interfere with the movement of a native resident or migratory wildlife species. Analysis has concluded that impacts are less than significant.</i></p>	5.8-4 No mitigation measures are recommended.	
	Regional and Local Policies/Plans		
5.8-5	<p><i>Project implementation would not conflict with adopted regional and/or local policies/plans pertaining to biological resources. Analysis has concluded that impacts are less than significant.</i></p>	5.8-5 No mitigation measures are recommended.	
	Cumulative		
5.8-6	<p>Cumulative development in the Project area may impact the area's biological resources. Analysis has concluded that with implementation of the specified mitigation and compliance with all applicable County, State and Federal regulations concerning biological resources, a less than significant impact would occur in this regard. Project implementation incrementally adding to impacts on bald eagle habitat in the Big Bear Valley would result in a significant and unavoidable cumulative impact to the wintering bald eagle population on Big Bear Lake.</p>	5.8-6 No mitigation measures are recommended.	
5.9	CULTURAL RESOURCES		
	Archaeological/Historical Resources		
5.9-1	<p><i>The proposed Project may cause a significant impact to unknown archaeological and/or historic resources visible on-site. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.</i></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	No significant impacts related to Cultural Resources have been identified following implementation of mitigation measures referenced in this Section.

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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.

Paleontological Resources

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| <p>5.9-2 <i>The proposed Project may cause a significant impact to unknown paleontological resources on-site. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.</i></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 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> | | |
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Burial Sites

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| <p>5.9-3 <i>The proposed Project may cause a significant impact to Native American burial sites which could occur on-site. Implementation of the specified mitigation measures would reduce impacts to a less than significant level.</i></p> | <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> |
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Cumulative

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| <p>5.9-4 <i>Cumulative development may adversely affect cultural resources in the north shore area. Resources are evaluated and mitigated on a project-by-project basis.</i></p> | <p>5.9-4 No mitigation measures are recommended.</p> |
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5.10 GEOLOGY AND SOILS

Slope Stability

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| <p>5.10-1 <i>Development of the proposed Project could result in slope failures. Implementation of the recommended mitigation measures and compliance with the County Development Code and Uniform Building Code would reduce impacts to less than significant levels.</i></p> | <p>5.10-1 <u>The stability of Ssouth facing cut slopes shall be analyzed as part of the design-level geotechnical investigation.</u> Utilizing 2:1 buttressed slopes using on site native soil materials, or by constructing geotextile-reinforced soil buttresses wherefor planned unstable cut slopes are planned are typical engineering designs for stabilizing slopes. Either of these methods, or <u>other methods must</u> be approved by the San Bernardino County <u>Department of Building and Safety</u> Geologist for slope reinforcement may be utilized.</p> | <p>No significant impacts related to Geology and Soils have been identified following implementation of mitigation measures and/or compliance with applicable standards, policies and/or County of San Bernardino Development Code and standards set forth in the Uniform Building Code.</p> |
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Soil Erosion

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| <p>5.10-2 <i>Development of the proposed Project could result in accelerated soil erosion. Project compliance with the County Development Code, the Uniform Building Code and the recommended mitigation measures would reduce impacts to a less than significant level.</i></p> | <p>5.10-2a 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.</p> |
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		5.10-2b	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.
Ground Shaking			
5.10-3	<i>Development of the proposed Project may increase the number of people/structures exposed to effects associated with seismically induced ground shaking. Implementation of the recommended mitigation measures and compliance with the County Development Code and the Uniform Building Code would reduce potential impacts to less than significant.</i>	5.10-3	Engineering design for all structures and roadways shall be based on the 2001 California Uniform Building Code. Construction plans shall be in accordance with seismic design standards set forth by the County's Development Code and Uniform Building Code.
Seiche			
5.10-4	<i>Development of the proposed Project may expose people/structures to seiching as a result of significant ground motion related to an earthquake. Project compliance with recommended mitigation measures would reduce impacts to less than significant levels.</i>	5.10-4	Residential structures shall be located in areas which provide a minimum of five feet of freeboard above the high water line for any structures.
Expansive Soils			
5.10-5	<i>Development of the proposed Project may create substantial risks to life property as a result of expansive soils. Implementation of the recommended mitigation measure would reduce impacts to less than significant levels.</i>	5.10-5	Prior to grading permit issuance, geologic analysis/studies shall be required including 1) a quantitative geotechnical analysis and liquefaction, 2) a design-level geotechnical engineering report shall be required and submitted to the County of San Bernardino Department of Building and Safety for their approval, and 3) a design level engineering geology report.
Cumulative Impacts			
5.10-6	<i>The proposed Project, combined with future development, may result in increased short-term impacts such as erosion and sedimentation, and long-term seismic impacts within the area. Mitigation is incorporated on a project-by-project basis to reduce impacts to a less than significant level in areas deemed suitable for development.</i>	5.10-6	No mitigation measures are recommended.

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5.11	HYDROLOGY AND DRAINAGE Drainage and Runoff 5.11-1 <i>The proposed Project could significantly alter drainage patterns which could result in increased erosion potential and runoff. Impacts are concluded as 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).</i> Groundwater 5.11-2 <i>The proposed project may result in groundwater overdraft conditions. Although mitigation measures requiring further testing are referenced, based upon the evidence presented to date, it is concluded that groundwater overdraft is a significant adverse impact and until additional technical review is conducted, the project would result in an unavoidable adverse impact.</i>	5.11-1 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. 5.11-2 Based upon the technical analysis presented, a potential groundwater overdraft condition would occur and no additional mitigation measures have been identified. <u>5.11-2a Within three months of project approval, the Project Applicant shall submit a plan for a detailed geohydrologic investigation. The plan must present the possible sources of groundwater selected for the project and the methodology proposed to investigate those sources. If the on-site wells are to be utilized to serve this project, it must be determined if either could draw water from Big Bear Lake. The plan must be prepared by a California Registered Geologist.</u> <u>5.11-2b Within six months of plan approval, the Project Applicant shall submit the results of the geohydrologic investigation. The report must be prepared by a California Registered Geologist.</u> <u>5.11-2c Concurrently or within three months of approval by the geohydrologic report, the Project Applicant shall submit a groundwater monitoring plan in accordance with San Bernardino County's "Guidelines for Preparation of a Groundwater Monitoring Plan." The plan must be prepared by a California Registered Geologist.</u>	Due to inconclusive testing of potential overdraft conditions for the ground water basin associated with the North Shore Hydrologic Subunit, project and cumulative impacts are concluded to be significant and unavoidable. If the County of San Bernardino approves the project, the County shall be required to adopt findings in accordance with Section 15091 of the CEQA Guidelines and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA Guidelines. No additional significant impacts related to hydrology and water quality have been identified following implementation of the recommended mitigation measures and/or through regulatory compliance.

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Water Quality – Construction

5.11-3 *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. Impacts would be reduced to a less than significant level through regulatory compliance and with incorporation of the recommended mitigation.*

5.11-3 Prior to Grading Permit issuance and as part of the Project's compliance with the NPDES requirements, a Notice of Intent (NOI) shall 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." At a minimum, the following shall be implemented from the *California Storm Water Best Management Practice Handbook - Construction Activity*:

- *CA 1 Dewatering Operations* – This operation requires the use of sediment controls to prevent or reduce the discharge of pollutants to storm water from dewatering operations.

- *CA 2 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.

- *CA 3 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.

- *CA 10 Material Delivery and Storage* – Minimize the storage of hazardous materials on-site. If stored on-site, keep in designated areas, install secondary

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		<p>containment, conduct regular inspections and train employees.</p> <ul style="list-style-type: none"> ▪ <i>CA 11 Material Use</i> – Prevent and reduce the discharge of pesticides, herbicides, fertilizers, detergents, plaster, petroleum products and other hazardous materials from entering the storm water. ▪ <i>CA 20 Solid Waste Management</i> - 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. ▪ <i>CA 21 Hazardous Waste Management</i> - This BMP describes the requirements to properly design and maintain waste areas. ▪ <i>CA 23 Concrete Waste Management</i> – 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. ▪ <i>CA 24 Sanitary Septic Water Management</i> – Provide convenient, well-maintained facilities, and arrange regular service and disposal of sanitary waste. ▪ <i>CA 30 Vehicle and Equipment Cleaning</i> – Use off-site facilities or wash in designated areas to reduce pollutant discharge into the storm drain facilities. ▪ <i>CA 31 Vehicle and Equipment Fueling</i> – Use off-site facilities or designated areas with enclosures or coverings to reduce pollutant discharge into the storm drain facilities. ▪ <i>CA 32 Vehicle and Equipment Maintenance</i> – Use off-site facilities or designated areas with enclosing or coverings to reduce pollutant discharge into the storm 	

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		<p>drain facilities. In addition, run a "dry site" to prevent pollution discharge into storm drains.</p> <ul style="list-style-type: none"> ▪ <i>CA 40 Employee and Subcontractor Training</i> – Have a training session for employees and subcontractors to understand the need for implementation and usage of BMPs. ▪ <i>ESC 2 Preservation of Existing Vegetation</i> – Minimize the removal of existing trees and shrubs since they serve as erosion control. ▪ <i>ESC 10 Seeding and Planting</i> – Provide soil stability by planting and seeding grasses, trees, shrubs, vines, and ground cover. ▪ <i>ESC 11 Mulching</i> – Stabilize cleared or freshly seeded areas with mulch. ▪ <i>ESC 20 Geotextiles and Mats</i> – Natural or synthetics material can be used for soil stability. ▪ <i>ESC Dust Control</i> – Reduce wind erosion and dust generated by construction activities by using dust control measures. ▪ <i>ESC 23 Construction Road Stabilization</i> – All on-site vehicle transport routes shall be stabilized immediately after grading and frequently maintained to prevent erosion and control dust. ▪ <i>ESC 24 – Stabilized Construction Entrance</i> – Stabilize the entrance pad to the construction area to reduce amount of sediment tracked off-site. ▪ <i>ESC 30 Earth Dikes</i> – Construct earth dikes of compacted soil to divert runoff or channel water to a desired location. ▪ <i>ESC 31 Temporary Drains and Swales</i> – 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. 	

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		<ul style="list-style-type: none"> ▪ <i>ESC 40 Outlet Protection</i> – Use rock or grouted rock at outlet pipes to prevent scouring of soil caused by high velocities. ▪ <i>ESC 41 Check Dams</i> – 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. ▪ <i>ESC 50 Silt Fence</i> – 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. ▪ <i>ESC 51 Straw Bale Barrier</i> – 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. ▪ <i>ESC 52 Sand Bag Barriers</i> – By stacking sand bags on a level contour, a barrier is created to detain sediment-laden water. The barrier promotes sedimentation. ▪ <i>ESC 53 Brush or Rock Filter</i> – 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. ▪ <i>ESC 54 Storm Drain Inlet Protection</i> – Devices that remove sediment from sediment laden storm water before entering the storm drain inlet or catch basin. ▪ <i>ESC 55 Sediment Trap</i> – A sediment trap is a small, excavated, or bermed area where runoff for small drainage areas can pass through allowing sediment to settle out. 	

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	Water Quality – Long-Term		
5.11-4	<i>Project development may 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.</i>	<p>5.11-4a Prior to Grading Permit issuance, a Water Quality Management Plan 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 <i>Water Quality Management Plan (WQMP) for Urban Runoff</i>.</p> <ul style="list-style-type: none"> ▪ <i>Education for Property Owners, Tenants and Occupations</i> – 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. ▪ <i>Activity Restrictions</i> – The developer shall prepare conditions, covenants and restriction of the protection of surface water quality. ▪ <i>Common Area Landscape Management</i> – 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. ▪ <i>Common Area Catch Basin Inspection</i> – 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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<ul style="list-style-type: none"> ▪ <i>Common Area Litter Control</i> – POAs shall be required to implement trash management and litter control procedures to minimize pollution to drainage waters. ▪ <i>Street Sweeping Private Streets and Parking Lots</i> – 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. <p>The following controls from the <i>California Storm Water Best Management Practice Handbook - Municipal</i> shall be employed:</p> <ul style="list-style-type: none"> ▪ <i>SC10 Housekeeping Practices</i> - This entails practices such as cleaning up spills, proper disposal of certain substances and wise application of chemicals. ▪ <i>SC32 Used Oil Recycling</i> - May apply to maintenance and security vehicles. ▪ <i>SC72 Vegetation Controls</i> – 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. ▪ <i>SC73 Storm Drain Flushing</i> - 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>5.11-4b 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,</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>sedimentation and siltation. The structural BMPs shall conform to the San Bernardino County NPDES permit and the San Bernardino WQMP standards.</p> <p>Consistent with the WQMP guidelines contained in the <i>Draft National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements</i> for San Bernardino County, Structural BMPs shall be required for the proposed 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.</p> <p>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 <u>Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998)</u>; or ▪ The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in <u>California Stormwater Best Management Practice Handbook – Industrial/Commercial (1993)</u>; 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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<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>The following are the minimum required controls to be implemented as a part of the <i>Water Quality Management Plan (WQMP) for Urban Runoff</i>.</p> <ul style="list-style-type: none"> ▪ <i>Control of Impervious Runoff</i> – Surface runoff shall be directed to landscaped areas or pervious areas. ▪ <i>Common Area Efficient Irrigation</i> – 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. ▪ <i>Common Area Runoff-Minimizing Landscape Design</i> – Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. ▪ <i>Catch Basin Stenciling</i> – “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. 	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<ul style="list-style-type: none"> ▪ <i>Debris Posts</i> – These shall be installed to prevent large floatable debris from entering the storm drains. They shall be placed upstream of the cross culverts. ▪ <i>Inlet Trash Racks</i> – 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>5.11-4c Storm water treatment under the NPDES Permit and the future TMDL requirements shall include the construction of treatment BMPs. Treatment BMPs appropriate for on-site use shall include infiltration trenches and basins, swales, inlet filtration, and/or water quality basins. All storm water runoff shall be treated before leaving the site to reduce pollutants in Big Bear Lake.</p>	
		<p><u>Infiltration Trenches and Basins</u></p> <p>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 five and 50 acres. Infiltration basins shall be either in-line or off-line, and may treat different volumes such as the water quality volume or the 2-year or 10-year storm.</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p><u>Swales</u></p> <p>The 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 Project to assure that runoff from the site is treated to the "maximum extent practicable".</p> <p>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 <u>not</u> be used in the vegetation swales.</p> <p><u>Filtration</u></p> <p>Filtration shall be implemented as a treatment method and shall use drop-in infiltration devices or inline devices.</p> <p>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.</p> <p>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</p>	

<u>EIR SECTION</u>	<u>IMPACTS</u>	<u>MITIGATION MEASURES</u>	<u>SIGNIFICANCE AFTER MITIGATION</u>
		<p>be added within the CDS[®] unit to aid in the removal of oil and grease. The treated flow will exit the CDS[®] unit and continue downstream.</p> <p>To assure the efficiency of these filtration devices, monitoring 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 will extend the effectiveness of the devices during a storm and will 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.</p> <p>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>	

Cumulative Impacts

- | | |
|--|---|
| <p>5.11-5 <i>The proposed Project along with other future development may result in increased hydrology and drainage impacts in the area. Due to inconclusive of potential overdraft conditions, cumulative groundwater impacts are concluded to be significant and unavoidable. Other hydrology and drainage impacts are evaluated on a project-by-project basis in order to mitigate to a less than significant level.</i></p> | <p>5.11-5 No mitigation measures are recommended.</p> |
|--|---|

2.3 SUMMARY OF PROJECT ALTERNATIVES

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.6, Section 7.0 describes a range of reasonable alternatives to the proposed project which could feasibly attain the basic objectives of the proposed project, while evaluating the comparative merits of each alternative. The analysis focuses 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. Potential environmental impacts are compared to impacts from the proposed project. The following is a description of each of the alternatives evaluated in Section 7.0.

“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. The following discussion evaluates the potential environmental impacts associated with the No Project/No Development Alternative as compared to impacts from the proposed Project.

“NO PROJECT/EXISTING DESIGNATION” 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). This Alternative would result in 1.5 residential lots on the project site. This Alternative would be less intensive than the proposed Project. Approximately three persons (1.5 housing units x 2.15 persons/household) would be added to the permanent 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 proposed Project.

“REDUCED DENSITY, WITHOUT ROAD ALIGNMENT AND WITHOUT MARINA” ALTERNATIVE

For the Reduced Density, Without Road Realignment and Without Marina Alternative, development of 62 residential lots and associated infrastructure (as depicted in the project description) would occur on the north side of the existing State Route 38 alignment. State Route 38 would not be realigned and no residential development would occur to the south of State Route 38. The land area south of State Route 38, along the lakefront, would be retained in its current state. Approximately 133 persons (62 housing units x 2.15 persons/household) would be added to the permanent 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 project site. Implementation of this Alternative would include the realignment of State Route 38. Twenty-one (21) and 45 lots would be developed on the south and north sides of the realigned State Route 38, respectively. This Alternative would include a marina facility, with 72 boat slips. Approximately 142 persons (66 housing units x 2.15 persons/household) would be added to the permanent population of the Community of Fawnskin.

3.0 Project Description

3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION AND SETTING

PROJECT LOCATION

The proposed Moon Camp Tentative Tract #16136 Residential Subdivision (“Moon Camp”) encompasses approximately 62.43 acres along the northwest shore of Big Bear Lake, in the community of Fawnskin, County of San Bernardino (refer to Exhibit 3-1, *Regional Vicinity*). The Big Bear Lake area serves primarily as a destination resort community and many of the residences are second homes. As many as 50,000 people visit the area on peak holiday weekends. The north shore area is less populated than the south shore and most visitors utilize the south shore commercial and recreational amenities such as ski areas, restaurants, and hotel facilities.

The Project site is located adjacent to the northwest shore of Big Bear Lake, in the relatively undeveloped eastern portion of Fawnskin (refer to Exhibit 3-2, *Local Vicinity*). More specifically, the site is located in the northern half of Section 13, Township 2 North, Range 1 West, San Bernardino Base and Meridian (APN: 0304-082-14, 0304-091-12, 13, and 21). 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 Oriole Lane/Canyon Road to the west. Regional access to the site is provided via State Route 38, which currently bisects the property.

EXISTING CONDITIONS ON-SITE

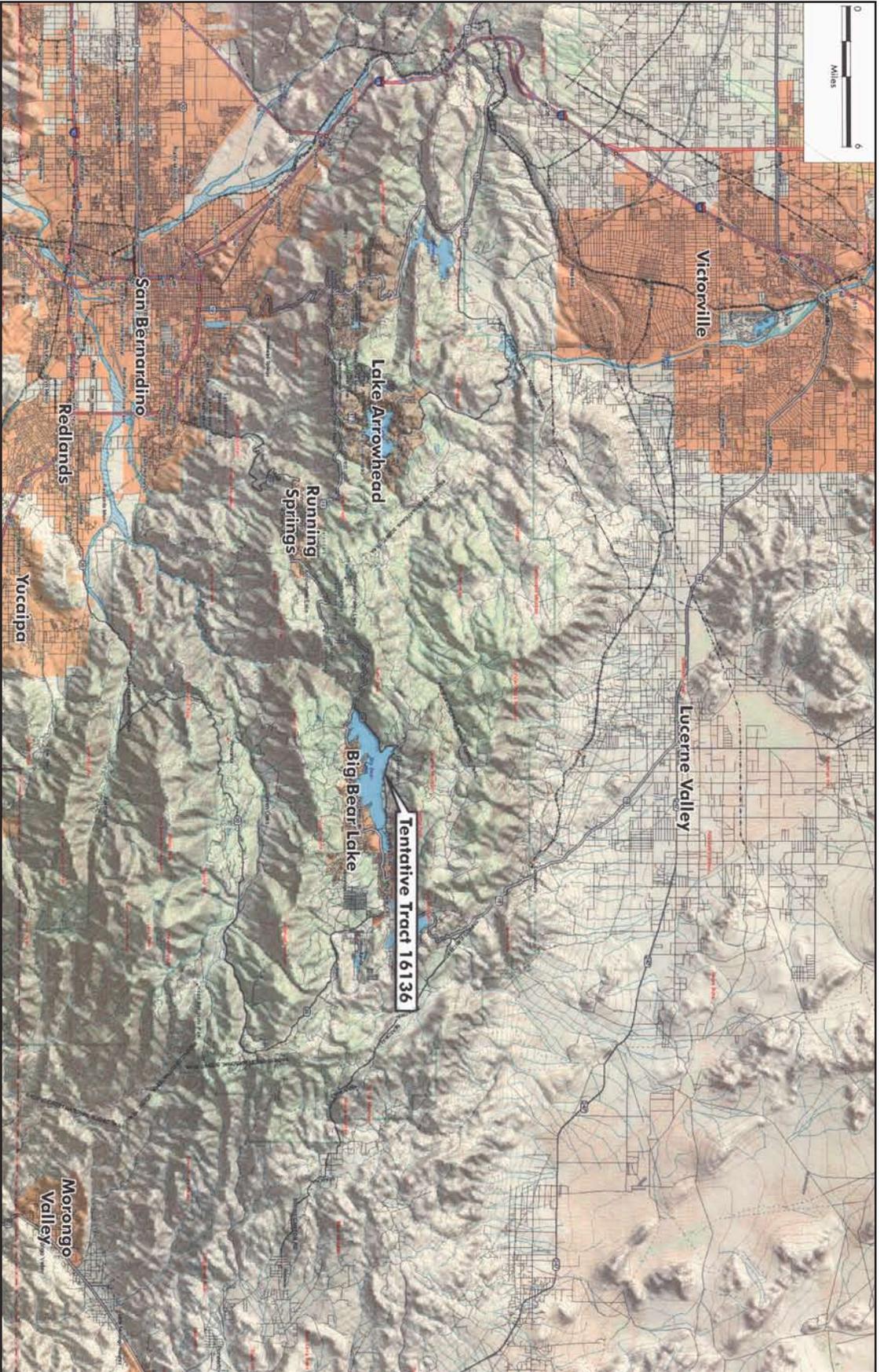
The 62.43-acre Project site (designated RL-40, Rural Living, by the County of San Bernardino) slopes from north to south. Elevations range from 6,747 feet above mean sea level (MSL) at the lakefront, to a high of 6,960 feet above MSL at the northeast boundary. Total relief is therefore 483 feet and slopes range from five percent (5%) to forty percent (40%). A natural drainage ravine occurs in the eastern portion of the property. The site is vegetated with Jeffrey Pine forest with approximately 2,772 trees existing on-site and a pebble plain habitat occurs in the western portion of the property. State Route 38, dirt roads, and trails traverse the Project site (refer to Exhibit 3-3, *Aerial Photograph*). Additionally, two water wells, which are currently non-operational, exist on the Project site.

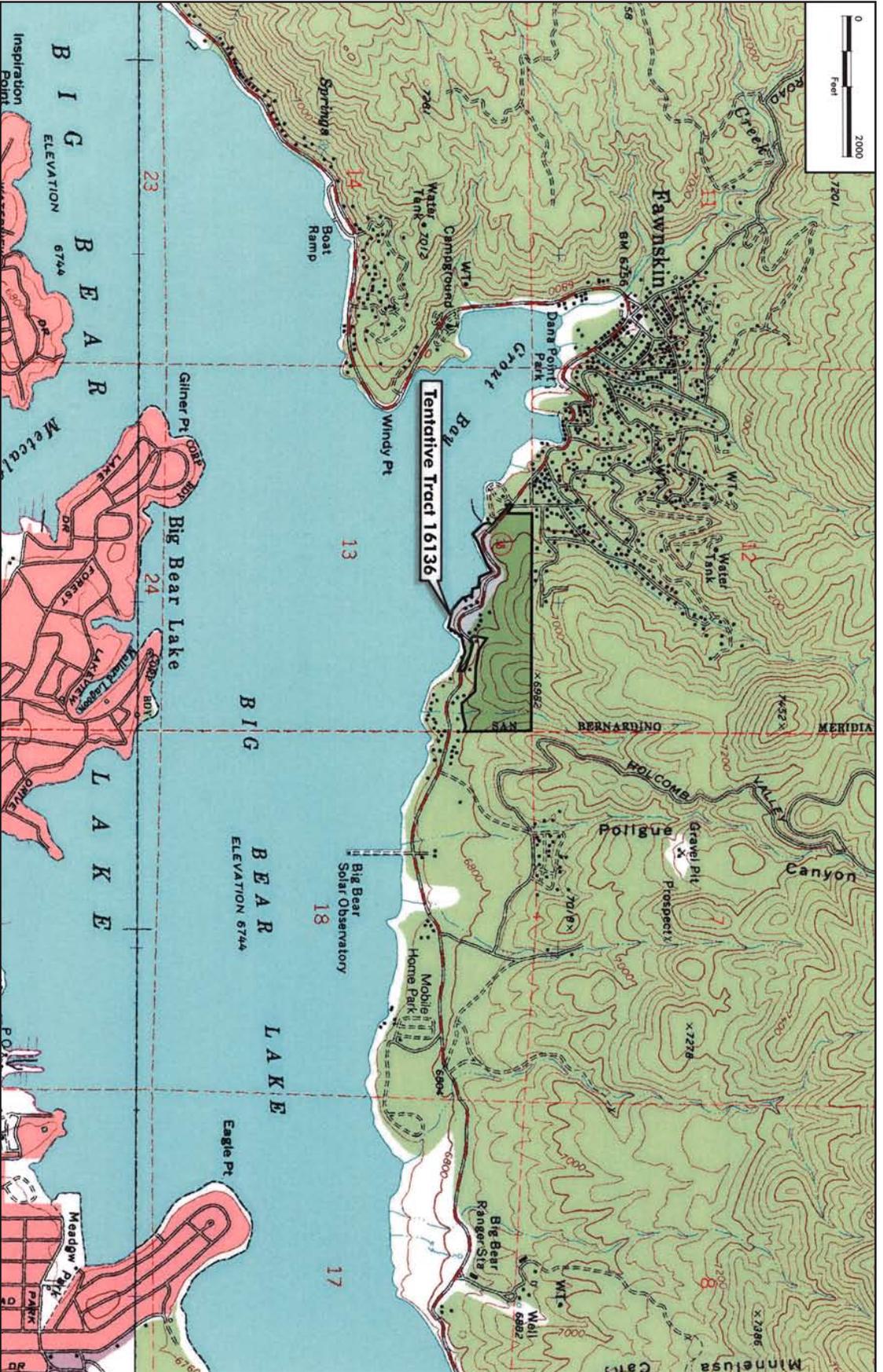
SURROUNDING LAND USES

The site is bounded by the following land uses:

North: Single-family residences along Flicker Road, a local street, border the site to the north. Flicker Road traverses the site’s northern boundary in an east/west direction. United States Forest Service lands occupy the eastern portion of the site’s northern boundary.

South: Big Bear Lake borders the site to the south.







East: Single-family residences along North Shore Drive (State Route 38) border the site to the south. The residences are located on the southern portion of the site's eastern boundary. United States Forest Service lands occupy the northern portion of the site's eastern boundary.

West: Single-family residences along Oriole Lane border the site to the west.

Table 3-1, *Existing Land Use Designations*, outlines the Project site's current land use designations based upon references contained in the San Bernardino County General Plan Land Use Element.

**Table 3-1
Existing Land Use Designations**

Existing Land Use		Official Land Use District	IL
Project Site	Vacant	RL-40	IL1
North	Forest, Residential (NW)	RC, RL-40, and RS	IL1 & IL5
South	Big Bear Lake, Residential (SE)	FW, RS	IL1
East	Vacant, Residential (SE)	RC, RS	IL1 & IL5
West	Vacant, Residential	PD-12/1, RS	IL1
IL	Infrastructure Improvement Level – Levels range from 1 to 5 and are tied to the availability of the basic infrastructure required for development (roads, water and wastewater). IL-1 represents the most intense urban areas before development can be permitted to the degree allowed by a site's official land use designation, existing and planned infrastructure must be in place at levels consistent with the designated IL areas. Typical lot sizes for IL-1 is less than ½ acre.		
RC	Resource Conservation: Allows for, but is not limited to: row, field, tree, and nursery crop cultivation; single dwelling unit; social care facility; and animal raising. Minimum parcel size is 40 acres.		
RS	Single Residential: Allow for, but is not limited to: row, field, tree, and nursery crop cultivation; single dwelling unit; and social care facility. The minimum net parcel size is 7,200 square feet. The maximum housing density is 4 dwelling units per acre.		
RL-40	Rural Living: Allows for, but is not limited to: row, field, tree and nursery crop cultivation; single dwelling unit; social care facility and animal raising. The minimum parcel size for the RL designation is 2.5 acres. The minimum parcel size for the RL-40 designation is 40 acres.		
PD-12/1	Planned Development: Allows for row, field, tree, and nursery crop cultivation; single dwelling unit; social care facility and animal raising. Minimum parcel size is 40 acres – map suffix allows lot sizes less than 40 (e.g., PD-12/1 = Planned Development – 12 units/acre).		
FW	Floodway: Uses only permitted where the property owner understands that the use is placed at their own risk and that it shall not obstruct and/or deflect flows onto other property. Minimum parcel size is 10 acres.		
Source: County of San Bernardino Development Code.			

3.2 BACKGROUND AND HISTORY

The community of Fawnskin was founded in 1916. By 1918, Fawnskin had already grown into a community of more than 100 summer homes with a string of resort camps lining the lakeshore to the east. Among these resorts was Moon Camp. By

1928, at least nine commercial camps or lodges were in operation in proximity to Fawnskin. The popularity of the camps continued into the 1940's and by the 1960's, with rapid advances in modern transportation technology, American lifestyles began to erode the popularity of such resort camps.

The site has historically remained vacant. However, on-site improvements include North Shore Drive, which currently bisects the property in an east/west direction, and two on-site water wells that are non-operational at this time. One water well is located on the north side of State Route 38 and the other well on the south side of State Route 38. Additionally, the Big Bear Municipal Water District has previously granted permitting rights to a dock facility. Refer to Section 5.2, *Recreation*, for additional information.

3.3 PROJECT CHARACTERISTICS

The Project proposes a 95-lot residential subdivision with lots ranging in size from 0.17 acres (7,292 square feet) to 2.11 acres (refer to Exhibit 3-4, *Site Plan*). Lots would be sold individually and development of lots and construction of homes would be by custom design. Access to 64 residential lots located within the northerly Project area (located north of North Shore Drive), would be provided via a loop road. The remaining 31 residential lots would be located south of North Shore Drive. The proposal is a Tentative Tract Map for 92 numbered and three lettered lots. The three lettered lots are identified as follows: (1) Lot "A" is a private street designed to provide access to the southernmost lots; (2) Lot "B" is a 1.4-acre strip of land that would remain between the relocation of State Route 38 and the private Street, Lot "A"; and (3) Lot "C" is a gated entrance to the Project, including a proposed boat dock, consisting of 100 boat slips, which would be available for use by residents of the tract and accessible by Lot "C". Common areas, including the parking lot, boat docks, private streets, and common landscape lots would be maintained by a home owner's association to be established with the recordation of the final map. Lots proposed along the lake front (Nos. 62-92) would be provided with gated access and private streets. Lot Nos. 1 to 61 would be located along a public street and would not be gated.

The Project includes relocation of North Shore Drive, also referred to as State Route 38, to allow development of lakeshore lots. An approximately 2,498-foot segment of the roadway would be relocated. The maximum distance of relocation, as designed, is 207 feet to the north. The design includes a 76-foot road width, with 14-foot shoulder/bikeway access, resulting in a 104-foot right-of-way via a loop road that would include five separate cul-de-sac drives to access lakefront lots. Of the estimated 2,772 trees existing on the Project site, approximately 655 trees (24 percent) would be removed for roadway construction. Additional tree removal could occur during individual lot development and construction of custom homes; the design of which is not part of this Project. State Route 38 would remain open at all times during construction of the proposed roadway realignment, with proper traffic controls implemented.

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The Project also requires a General Plan Amendment/Land Use District Amendment from RL-40 Rural Living (40-acre minimum lot) to RS-7200 Single Residential (7,200 square foot minimum lot size). The proposed realignment of North Shore Drive requires an Amendment to the County's Circulation Element.

3.4 PROJECT OBJECTIVES

The following objectives have been identified for the 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 to improve the design of the roadway. More specifically, eliminate existing sharp curves of the roadway to minimize conflicts on State Route 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.

3.5 PHASING

The proposed subdivision is a custom lot residential development. All lots would be sold for future construction of custom homes. Individual improvements and continued buildout of Moon Camp would occur incrementally over time beginning with the realignment/construction of North Shore Drive. The exact details of construction of each individual lot would be evaluated by the County of San Bernardino on a project-by-project basis. If the market continues strong, then all the off-site improvements would be installed (all improvements within the tract, but not on individual lots) and the final tract map recorded as one phase.

3.6 AGREEMENTS, PERMITS AND APPROVALS

The County of San Bernardino is the Lead Agency for the Project and has discretionary authority over the primary Project proposal. To implement this Project, the Applicant will need to obtain the following permits/approvals:

- Big Bear Municipal Water District – Per the discretion of the Water District: a Dock System and License Agreement, Yacht Club Dock License, and/or Shore Zone Alteration Permit.
- Caltrans – 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 Big Bear City Community Services District, or the County of San Bernardino Special Districts – Water service permits and approvals.
- County of San Bernardino Board of Supervisors – Approval of a General Plan Amendment (for Land Use and Circulation Elements), Conditional Use Permit for Marina Parking Lot, Tentative Tract Map, Certification of the Environmental Impact Report.
- California Department of Fish & Game – 1602 Streambed Alteration Agreement.
- California Division of Forestry – Timber Harvest Plan (THP). The property is located within the boundaries of the U.S. National Forest Service but is not owned by the U.S. Forest Service.
- California State Water Resources Control Board – General Storm Water Permit for Construction and Storm Water Pollution Prevention Plan (SWPPP).
- California Regional Water Quality Control Board – Clean Water Act Section 401 Permit.
- U.S. Army Corps of Engineers – Clean Water Act Section 404 Permit.

4.0 Basis for Cumulative Analysis

4.0 BASIS FOR CUMULATIVE ANALYSIS

Section 15355 of the State California Environmental Quality Act (CEQA) Guidelines, as amended, provides the following definition of cumulative impacts: "Cumulative impacts refers to two or more individual effects which, when considered together, are considerable, or which compound or increase other environmental impacts." Pursuant to Section 15130(a) of the aforementioned Guidelines, cumulative impacts of a project shall be discussed when the project's affect is cumulatively considerable, as defined in Section 15065(c) of the Guidelines. The Initial Study Checklist provided as part of Appendix 15.1 indicates that the proposed project may yield potentially significant cumulative effects. As a result, Section 5.0 of this EIR provides a cumulative impact assessment for each applicable environmental issue, and does so to a degree which reflects each impact's severity and likelihood of occurrence.

As indicated above, a cumulative impact involves two or more individual effects. Per State CEQA Guidelines Section 15130(b), the discussion or cumulative impacts shall be guided by the standards of practicality and reasonableness. Per CEQA Guidelines Section 15130(b) the following elements are necessary in an adequate discussion of significant cumulative impacts:

1. Either:
 - a. 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
 - b. 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.
2. A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and
3. A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Table 4-1, *Cumulative Projects List*, identifies related projects and other possible development in the area determined as having the potential to interact with the proposed project to the extent that a significant cumulative effect may occur. Information integral to the identification process was obtained from the City of Big Bear Lake, County of San Bernardino, and a review of several secondary data sources. The resulting related projects include primarily only those determined to be at least indirectly capable of interacting with the Moon Camp project. Table 4-1, *Cumulative Projects List*, summarizes the related projects according to location, type, and number of units realistically expected to develop on the site.

In addition, it is noted that the Traffic Analysis and corresponding Air Quality and Noise Assessments were prepared in accordance with the Congestion Management Program requirements for San Bernardino County. The study area was determined based on the contribution of project traffic to the surrounding roadway system.

**Table 4-1
Cumulative Project List**

Project Name	Location	Description	Status
County of San Bernardino			
TR 12217 (Marina Point)	North Shore Drive, southwest side, south of Red Robin Drive, in Fawnskin	132-unit Condominium Complex on approximately 12.5 acres plus approximately 15.7 acres of off-site lake improvements.	Recorded but not constructed.
TR 15465 (Kelsch)	Brookside Lane, Cedar Dell in Fawnskin	Single-Family Residential, minimum 20,000 square foot lots to establish 62 residential lots. Five lettered lots for water tank, interior road and open space conservation. Total of 74 acres.	Has not Recorded.
Relocation of Moonridge Zoo from the South Shore	North Shore Drive, adjacent to Discovery Center	Animal Park on a 25 acre lot, develop 5 to 7 acres to house approximately 150 animals and include; educational facilities, hospital, concession stands, and promissory.	Has not Recorded.
City of Big Bear Lake			
Site Approval (CUP) and Design Review 2001-167	41865 Fox Farm Road	To construct and operate a self-storage facility totaling 68,200 s.f. covered recreational vehicle storage facility totaling 18,840 s.f. and a two-story 5,916 s.f. mixed-use building.	Recorded but not constructed.
Site Approval (CUP) and Design review 2001-043, major Deviation 2001-044, and Minor Subdivision 2001-062 (TT No. 15705)	39708, 39720, 39730, 39738 and 39756 Big Bear Boulevard	To construct a 91-unit hotel with ancillary uses including a 4,000 s.f. banquet facility, 1,068 s.f. restaurant, 1,700 s.f. lounge 500 s.f. lobby service bar and a 624 s.f. maintenance building and structure.	Recorded but not yet constructed.
TT application 2002-006, TT Map No. 16297 – Wolf Creek Estates, Variance 2002-007, and Developer Agreement Variance	Southern portion of the Bear Meadows condominium project, Lot 4-D of Tract 12092.	To subdivide a 2.46-acre parcel into 10 lots for lot sales and future single family residential home construction.	Recorded but not yet constructed.
Plot Plan Review 2002-034	40679 Lakeview Drive	To reuse an existing vacant building as an indoor retail mall and use an existing off-site parking lot.	Recorded but not yet constructed.

5.0 Description of Environmental Setting, Impacts and Mitigation Measures

5.0 DESCRIPTION OF ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

5.1 LAND USE AND RELEVANT PLANNING

The purpose of this Section is to identify the existing land use conditions, analyze project compatibility with existing uses, consistency with relevant planning policies and to recommend mitigation measures to lesson the significance or avoid potential impacts. Information presented in this section is based upon site surveys performed by RBF Consulting in February 2002, site photographs, the County of San Bernardino General Plan and Development Code, and the General Plan EIR for the City of Big Bear Lake. This section provides on-site and surrounding land use conditions and land use policy requirements set forth by the County of San Bernardino.

EXISTING CONDITIONS

ON-SITE

The Project site encompasses approximately 62.43 acres (AC) and is situated along the northwest shore of Big Bear Lake, in the relatively undeveloped eastern portion of the community of Fawnskin, County of San Bernardino (refer to Exhibit 3-2, *Local Vicinity*). The Project site is generally bounded by Flicker Road to the north, Big Bear Lake to the south, Polique Canyon Road to the east, and Oriole Lane and Canyon Road to the west. The Project site is located immediately adjacent to broad expanses of contiguous forestland within the San Bernardino National Forest to the north and northeast. State Route 38 (North Shore Drive) traverses the southern portion of the property in an east/west orientation.

The property is an inholding within the boundaries of the U.S. National Forest, however, is not owned by the U.S. Forest Service (USFS) and therefore requires no permitting by the USFS.

OFF-SITE

Surrounding land uses involve a mixture of resource conservation, floodway, and single-family residential uses. The site is bounded by the following land uses:

North: Forest land and single-family residential uses are located along Flicker Road and Deer Trail Lane.

South: Big Bear Lake and single-family residential uses located to the south, fronting the north and south sides of State Route 38 (North Shore Drive).

East: Forest land and residential uses exist adjacent to the southeast corner of the Project site and east of Polique Canyon Road.

West: Vacant land and single-family residential uses are located to the west including residences along Canyon Road and further west, the greater Fawnskin community. Fawnskin is developed more extensively with single-family residential lots and boating facilities.

LAND USE POLICIES

SAN BERNARDINO COUNTY GENERAL PLAN

The San Bernardino General Plan was adopted on July 1, 1989 and was revised on November 22, 2001. The General Plan is organized according to four planning issues: Natural Hazards, Man-Made Hazards, Natural Resources, and Man-Made Resources. With this organizational style, the General Plan outlines the priority for the County in the type of resources that need to be preserved, and how these resources are to be preserved. Additionally, the General Plan identifies regional and subregional planning areas within the County.

NATURAL HAZARDS

This section identifies the conditions of potential danger or risk to life and/or property resulting from acts of nature. Four major groups of natural hazards are addressed in the General Plan including Geologic, Flood, Fire, Wind and Erosion. Mapping of these issues and application of the policies delineate areas subject to hazards. By identifying the areas of potential danger, development may be precluded thereby providing open space for health and safety purposes. The Natural Hazards section, in combination with the Man-made Resources issue and mapping overlays, satisfies the mandatory requirements of the Safety Element.

San Bernardino County is subject to many geologic hazards, including seismic activity (earthquake-induced phenomena such as fault rupture, ground shaking, liquefaction, seismically-generated subsidence, seiche, and dam inundation), landslide/mudslide (mudflow), non-seismic subsidence, erosion and volcanic activity. Each of these can affect property and existing or potential uses. The Project site is located in a geologic hazard area. Refer to the *Development Code* section below and Section 5.10, *Geology and Soils*, for further discussion relative to geologic conditions on the Project site.

A combination of climate, topography, vegetation and development patterns creates high fire hazard risks throughout the County, especially in the many areas of wildland/urban intermix located in foothills and mountainous areas Countywide. As development encroaches upon wildland areas, the potential for disastrous loss of watershed, structures, and life (human and wildlife) increases. The Project site is located in a high fire hazard area. Establishment of a coordinated program to condition development in some of these fire hazard areas has been adopted through the Foothill Hazards (Greenbelt) Overlays and the Mountain Fire Zone. The Foothill Hazard Overlays, the Mountain Fire Zone and additional high fire hazard areas are included in the Fire Hazard Overlay Mapping. Continuous evaluation and application

of Hazard Overlays and accompanying policies and standards for adequate services, facilities, mapping and developmental regulation are required as pressure for development increases countywide. Included in developmental regulation are requirements for minimum road widths (to provide adequate access for both fire fighting equipment and evacuating residents) and clearance around structures to prevent the rapid spread of fire from one structure to another. Refer to the *Development Code* section below and Section 5.3, *Public Utilities*, for further discussion relative to potential fire hazards on the Project site.

In response to state law, the Peakload Water Supply System Guidelines were developed (refer to Figure II-5 of the General Plan, *Peakload Water Supply System Guidelines*). These guidelines, designed to ensure an ample water supply, are the sum total of required fire flow, operational daily consumption and emergency storage.

Refer to Section 5.11, *Hydrology and Drainage*, for a discussion of site conditions relative to potential flood and erosion hazards.

MAN-MADE HAZARDS

The General Plan identifies conditions of potential danger or risk to life and health or property due to the acts of man and use of his technology. Three issues relevant to man-made hazards are addressed in this section including Noise, Aviation Safety, and Hazardous Waste/Materials. This section satisfies the mandatory requirements of the Noise Element.

Refer to Section 5.7, *Noise*, for a discussion of site conditions relative to potential noise hazards. Refer to Section 10.0, *Effects Found Not to be Significant*, for a discussion of site conditions relative to potential aviation safety and hazardous waste/materials hazards.

NATURAL RESOURCES

Natural resources are plentiful in San Bernardino County, with the exception of the water supply, which is at critically low levels in the mountain areas. These natural resources are a necessity for the quality of life that is desirable for residents and visitors in the County. This section establishes the concepts of carrying capacity, threshold levels of impact, renewable versus nonrenewable kinds of resources, ecological viability, and long-term versus short-term deleterious effects. Natural resources in the County are allocated to the following seven categories:

- Biological;
- Cultural/Paleontological;
- Air Quality;
- Water;
- Open Space/Recreation/Scenic;
- Soils/Agriculture; and
- Minerals.

Biological resources are defined in this Element as native species of plants and wildlife (resident and migratory). Some species are endangered or threatened with extinction and require intensive management for their preservation, while others are relatively abundant and require only the application of general conservation practices for their continued existence. This Element notes that the status of biological resources in the County is generally declining due to increased urbanization and encroachment into previously rural areas. Housing demand has spurred growth in all areas of the County affecting many species directly through habitat loss and indirectly through increased use of open space and recreational lands. The Project site contains biological resources, including certain species of plants and wildlife considered endangered or threatened. Refer to the *Development Code* section below and Section 5.8, *Biological Resources*, for further discussion relative to the biological resources on the Project site.

San Bernardino County contains a wealth of scenic resources, which have in many cases been recognized by local jurisdictions, the County, or state and federal agencies as worthy of special protection to preserve their aesthetic value. In recognition of the visual quality of the areas through which they pass, the County has designated certain roadways as scenic routes. In some instances, these roadways have also been designated as state scenic highways by the California Department of Transportation (Caltrans). In addition, the U.S. Forest Service has officially designated the length of the "Rim of the World Highway," which includes portions of Highways 138, 18, and 38, as a Scenic Byway. In the County, scenic highways are subject to additional land use and aesthetic controls under the County's Scenic Highway Overlay District.

The County has designated State Highway 38, which traverses the Project site, as a Scenic Highway. As a result, all development within the Scenic Corridor¹ would be subject to compliance with various policies and development standards. Refer to the *Development Code* section below and Section 5.4, *Aesthetics/Light and Glare*, for further discussion relative to Scenic Highway Overlay District requirements.

Refer to Section 5.6, *Air Quality*, and Section 5.9, *Cultural Resources*, for a discussion of site conditions relative to air quality and cultural/paleontological resources, respectively. Refer to Section 5.3, *Public Utilities*, and Section 5.11, *Hydrology and Drainage*, for a discussion of site conditions relative to water resources. Refer to Section 10.0, *Effects Found Not to be Significant*, for a discussion of site conditions relative to soils/agriculture and mineral resources.

MAN-MADE RESOURCES

The General Plan defines man-made resources as those characteristics and services, facilities and activities for which man is directly responsible, including the following:

- Wastewater Systems;
- Solid Waste Management;
- Transportation/Circulation;

¹ The General Plan defines the Scenic Corridor as that area which extends "200 feet on either side of the designated route, measured from the outside edge of the right-of-way, trail, or path."

- Energy/Telecommunications;
- Housing/Demographics; and
- Land Use/Growth Management.

This section describes the County residents, their housing, the services they use, what can be done with the land, and what infrastructure is needed to support development.

According to the *Transportation/Circulation* Section of the General Plan, there are approximately 3,620 miles of County maintained roads in County unincorporated areas, of which approximately 2,930 miles are paved. In addition, there are hundreds of miles of State highways and freeways. State Route 38 (North Shore Drive) traverses the southern portion of the Project site in an east/west orientation. This Section further notes the following with respect to the Project area:

“The County's Mountain region is served by a limited number of roads which climb steeply and curve sharply over a difficult landscape. Engineering and construction of new roads or improvements of existing roads can be very costly and time consuming. In several Mountain communities the existing roadways are already severely overcrowded and deteriorated by local and tourist traffic. In many cases populated areas are served by local roads without all-weather surfacing which may impair emergency vehicle access or escape routes during emergencies. Severe winter conditions can damage and slow traffic on State and County-maintained road systems. Because of the increased number and intensity of recreational, residential and commercial development planned for the Mountains, existing roadways will be even more severely burdened in the future. Furthermore, the steep terrain and physical environment of the Mountains make it difficult or impractical to build new roads or widen existing roads.”

The Transportation/Circulation maps utilize a computerized mapping system to illustrate a hierarchy of roads and highways. Road designations on the maps indicate the ultimate planned road facility. The circulation maps show basic categories of facilities (i.e., Freeways, Major Arterial Highways, etc.). These are broad classifications reflecting certain functional and technical differences. State Route 38 (North Shore Drive) is designated as a State Highway. State Highways are subject to special standards and conditions that do not fit into the categories described above.

Refer to Section 5.5, *Traffic and Circulation*, for further discussion regarding transportation/circulation resources. Refer to Section 5.3, *Public Utilities*, for a discussion regarding wastewater systems and solid waste management. Refer to Section 10.0, *Effects Found Not to be Significant*, for a discussion regarding energy/telecommunications and housing/demographics.

Land Use Element

The Land Use Element is the primary policy base for guiding the physical development of the privately owned unincorporated land in San Bernardino County. The Land Use Element correlates all land use issues into a set of coherent

development policies. The goals, policies, and actions of the Element relate directly to other elements and issues addressed in the General Plan. The Land Use Element policies relevant to the proposed Project are as follows:

LU-2 Because the County wants to promote and provide safe, attractive, varied residential areas convenient to public facilities, employment and shopping centers, the following policies/actions shall be implemented:

- (a) *Require that the design and siting of new residential development meet locational and development standards that ensure compatibility with adjacent land uses and community character.*
- (b) *Allow varied approaches to residential development in order to foster a variety of housing types and densities and more efficient use of the land.*
- (c) *Adopt regulations*

The Land Use Element is divided into two sections: 1) Location, Distribution and Intensity of Land Uses, and 2) Growth Management. A description of the sections is provided below.

Location, Distribution, and Intensity of Land Uses

All private lands in the County are designated for specific land uses. This section specifies the purpose, locational criteria, building intensity standards, population density and the intended uses of each land use District.

Official Land Use Districts

The General Plan has established 17 Official Land Use Districts that are applied only to privately owned lands in the County. As illustrated on the Official Land Use Districts Map, the Project site is designated Rural Living (RL)-40. The intended use of the RL District is to provide sites for rural residential uses, incidental agricultural uses, and similar and compatible uses.

Official Land Use Districts for land uses adjacent to the Project site are outlined in Table 5.1-1, *Summary of Land Uses*, and described below.

**Table 5.1-1
Summary of Land Uses**

Existing Land Use		Official Land Use District	Improvement Level*
Project Site	Vacant	RL-40	IL1
North	Forest, Single-Family Residential (NW)	RC, RL-40, RS	IL1 & IL5
South	Big Bear Lake, Single-Family Residential (SE)	FW, RS	IL1
East	Vacant, Forest, Single-Family Residential (SE)	RC, RS	IL1 & IL5
West	Vacant, Single-Family Residential	PD-12/1, RS	IL1
* Refer to the <i>Improvement Standards</i> section below for definitions of Improvement Levels.			

- Resource Conservation (RC): The RC District is intended to provide sites for open space and recreational activities, single-family homes on very large parcels, and similar compatible uses.
- Rural Living (RL): The RL District is described above.
- Single Residential (RS): The intended use of the RS District is to provide sites for single-family residential uses, incidental agricultural and recreational uses, and similar and compatible uses.
- Planned Development (PD): The intended use of the PD District is to provide sites for a combination of residential, commercial, industrial, agricultural, open space and recreation uses, and similar and compatible uses.
- Floodway (FW): The FW District is intended to provide sites for animal raising, grazing, crop production, and similar and compatible uses.

Improvement Standards

Additional public facilities and services are usually required when new residential, commercial or industrial uses are established. In several areas, major public service and facility deficiencies already exist. In order to ensure that future developments do not become fiscal liabilities to County residents, policies were developed to require that future development proceed at a pace commensurate with the provision of services.

The County recognizes that there is a direct relationship between the intensity of land uses and the amounts of facilities and services that are needed to support such uses. There are five levels of development intensity, ranging from very high density developments in urban areas, to very low density developments in very rural areas. The amount of infrastructure facilities and services required in areas with high density development is significantly more than that required in areas with low density development. Thus, the County established onsite and offsite improvement standards that are deemed essential in each of the five different levels of development intensity. This system of matching development intensity with essential improvements is referred to as the "Improvement Level" (IL) system. Five ILs were established to correspond with the five different intensity levels. Improvement Level 1 (IL1) is applied to very urban areas, while IL5 is applied to very rural areas. Improvement Levels are assigned to an area based on the long-term planned development and lifestyle commitment of the area. Future development is expected to provide the appropriate and applicable infrastructure facilities and services prior to, or in concert with anticipated or proposed development.

The designated Improvement Level for each area is illustrated on the Infrastructure/Improvement Levels Overlay Map. According to this Map, the Project site has been designated IL1. Improvement Level 1 is applied to those areas planned for a higher intensity level of development. This may include large areas designated for commercial, industrial or multi-family residential uses, city spheres of influence areas planned for high-density uses, and higher-density single family residential uses. In most cases, IL1 is suitable in what may be considered the core areas of established

urban or urbanizing communities. The typical ultimate lot size in IL1 is less than 0.5 acre.

Figure II-15 of the San Bernardino County General Plan, *Improvement Standards – Mountain*, lists the required improvements for the five different levels of development intensity in the “Mountain” areas. According to Figure II-15, IL1 requires the following improvements:

- Legal and physical access
- Grants of Easements¹
- Paved access
- Curbs and gutters
- Sidewalks
- Street lights at standard spacing
- Water purveyor
- Sewer² or Septics
- Drainage improvements³
- Paved dip section
- Fireflow

Notes

¹ Includes necessary rights-of way for transportation and circulation, drainage and flood control facilities, and utilities.

² Sewers shall be required as necessary by the EHS Department if necessary for reasons of health and safety.

³ The requirement will be waived in areas where a sub-regional plan and fee or other financing mechanism exists to provide necessary improvements. Provided, however, that the Transportation/Flood Control Department may require additional improvements if necessary for reasons of health and safety.

Improvement Levels for areas surrounding the Project site are outlined in Table 5.1-1, *Summary of Land Uses*, and described below.

- IL1: Refer to the description provided above.
- IL5: Level 5 is applied to areas with little or no development potential, and where only very sparse development is expected in the long term. These areas are typically in remote or inaccessible locations, or in relatively vast open space areas where severe environmental and physical constraints or lack of resources virtually preclude development. The typical ultimate lot size for IL-5 is greater than 20 AC.

According to Figure II-15 of the San Bernardino County General Plan, IL5 requires legal and physical access, grants of easements, and septic improvements.

Maps

The General Plan Text is supported by a series of thematic maps:

- The Official Land Use Districts Map;

- Composites of Overlays for:
 - Hazards/Noise;
 - Resources;
 - Transportation/Circulation; and
 - Infrastructure/Improvement Levels.

The Official Land Use Districts Map is a graphic representation of the location and distribution of the Official Land Use Districts that are applied in the County.

Overlays are applied to areas with special or unique physical characteristics. In such areas, special policies, and special development and performance standards may be established to protect public health and safety. The Hazards Overlay Maps depict areas of known hazards, both natural and manmade. They include the following:

- Geologic (Seismic and Landslide);
- Flood;
- Fire;
- Noise;
- Aviation Safety Areas; and
- Hazardous Waste.

The Project site is located within a Geologic Hazards Overlay District and a Fire Safety Overlay District. Areas considered geologically hazardous involve Alquist-Priolo Special Studies Zones and those areas susceptible to liquefaction and landslides. Areas considered fire hazardous involve those areas subject to wildland/urban intermix and high fire hazard as identified by the County Fire Warden including, but not limited to, areas previously designated in Mountain Fire Zone, and the Hillside and Foothill Fire Hazard Zones.

The Natural Resources Overlay Maps depict the following:

- Biological;
- Cultural;
- Paleontological;
- Open Space/Recreation/Scenic – Regional Trail Alignments, Open Space Areas, Wildlife Corridor Zones, Green Belt Areas, Buffer Areas;
- Important Farmlands;
- Agricultural Preserves;
- Mineral Resource Zones (MRZs); and
- Water Resources.

The Project site is located within a Biotic Resources Overlay District and a Scenic Resources Overlay District. Areas considered a biotic resource involve habitats of threatened, endangered and rare plants and wildlife and special habitat areas, as identified by Federal and State agencies and County Code. Areas considered a scenic resource include areas worthy of special protection to preserve their aesthetic value.

The General Plan Transportation/Circulation Maps utilize a computerized mapping system to illustrate the hierarchy of roads and highways. Refer to the *Man-Made Resources* section above for further discussion regarding these maps.

The combined Infrastructure/Improvement Level Maps show the general location of waste disposal sites (both County and non-County operated), sewage treatment plants, public schools (unincorporated areas only), homeless shelters in operation as of February 1988, and the Improvement Level (IL) areas 1 through 5, as described above.

Growth Management

The *Growth Management* section of the General Plan focuses on ways to monitor and manage future growth of the County in order to preserve valuable resources and maintain a high quality of life for all residents. This section includes: Growth Monitoring, Urban/Rural Service Boundaries, Intergovernmental Coordination, and Infilling. Refer to Section 6.3, *Growth Inducing Impacts*, for a discussion regarding growth management.

Regional/Sub-Regional Planning Areas

The General Plan identifies regional-subregional planning areas within the County. The County is comprised of three regions: the Valley, Mountain, and Desert, each with distinct geographic and physical characteristics. For planning purposes, these three regions were further divided into eight sub-regions: West Valley, East Valley, Mountain, Victor Valley, Barstow, Baker, Morongo Basin and Lower Colorado River. Each sub-region is divided into community-sized planning/specific plan areas. Profiles of each region, sub-region and community-sized planning/specific plan area are provided along with the policies unique to each area. The Project site is situated within the Mountain Region, the Big Bear Lake Planning Area, and the Bear Valley (BV) (Fawnskin) Community.

SAN BERNARDINO COUNTY DEVELOPMENT CODE

The San Bernardino County Development Code (Title 8) provides regulations governing the uses of land, buildings, structures, the height of buildings and structures, the sizes of yards about buildings and structures, as well as other matters.

Land Use Districts

The Land Use District maps illustrate the Official Land Use Plan, classifications, and boundaries of Land Use Districts. The Project site is classified as Rural Living-40 (RL) District (Section 84.0320). Permitted uses within the RL District include the following:

- Row, Field, Tree and Nursery Crop Cultivation;
- Single dwelling unit;
- Social Care Facility with six (6) or fewer clients; and
- Animal raising.

Overlay Districts

As specified in Section 85.0101, Overlay Districts are established to recognize and map environmental hazard constraints, environmental resource amenities, or community concerns, which should be taken into consideration when land development is being proposed. Overlay Districts establish regulations in addition to those imposed by the Land Use District. Overlay Districts are designated where development within a Land Use District is affected by or would affect such environmental hazard constraints, environmental resource amenities, or community concerns.

The Project site is located within the following four Overlay Districts: the Fire Safety (FRS) Overlay District; Geologic Hazard (GH) Overlay District; the Biotic Resources (BR) Overlay District; and the Scenic Resources (SR) Overlay District. The FRS Overlay District is created to provide greater public safety in areas prone to wildland brushfires, by establishing additional development standards for these areas. ~~The FR Overlay District is created to provide greater public safety in areas prone to wildland brushfires, by establishing additional development standards for these areas. The FR Overlay District is divided into two review areas, each of which represents a different level of wildland hazard. A different set of requirements is applied in each review area. The provisions for these requirements are cumulative in that all of the requirements that are specified for Fire Safety Review Area 2 shall also apply to Fire Safety Review Area 1, in addition to those specified for only Fire Safety Review Area 1.~~ The project site is located within Fire Safety Area 1 (FS1).

~~Fire Safety Review Area 1 (FR1).~~ Fire Safety Review Area 1 includes wildland areas that are marginally developable, areas which are not likely to be developed, and the area of transition between wildlands and areas that are partially developed or are likely to be developed in the future. The area of transition is often characterized by an abrupt slope change. Natural hazards are prevalent throughout Area 1, especially in areas with natural ungraded slopes greater than thirty percent (30%). Area 1 includes areas of very high to extreme fire hazard.

- ~~Fire Safety Review Area 2 (FR2).~~ Land within Area 2 is relatively flat, and is either partially or completely developed, or, if it is not developed, is usually suitable for development. Present and future development within Area 2 is exposed to the impacts of wildland fires and other natural hazards primarily due to its proximity to Area 1.

~~Since the Project site is located within a FS1 designated area, it is located within Fire Safety Review Area 2 (FR2), therefore would be subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control as specified in Section 85.020220, Area FR1 and FR2 Requirements Building Standards for FS1.~~

The GH Overlay District is created to provide greater public safety by establishing review procedures and setbacks for areas that are subject to potential geologic problems such as ground shaking, earthquake faults, liquefaction, and subsidence. According to Section 85.020410, *Geologic Reports*, a detailed geologic study is

required for the Project confirming the presence/absence of hazardous faults and if applicable, shall establish appropriate setbacks from active faulting. In portions of the Geologic Hazard Overlay District where slope stability is a concern, the geologic report shall evaluate landslides and other slope instabilities that could affect the project and identify recommendations for mitigation. For areas within the Overlay District where liquefaction is a concern, the geologic report shall evaluate the potential for liquefaction based upon anticipated ground shaking, historic groundwater levels and characteristics of alluvial materials. If the investigation determines that a potential for liquefaction exists, a geotechnical investigation may be required.

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 that have been identified within unincorporated areas of the County.

Section 85.030220, *Development Standards*, identifies the following standards for development within a BR Overlay District:

“When a land use is proposed or an existing land use is increased by more than twenty-five percent (25%) within a Biotic Resources Overlay District, the applicant shall have a report prepared identifying all biotic resources located on the site and those on adjacent parcels, which could be impacted by the proposed development. The report shall outline mitigating measures designed to reduce or eliminate impacts to the identified resource(s), and shall be submitted along with the application for the proposed development. The report shall be prepared by an appropriate expert such as a qualified biologist, botanist, herpetologist or other professional “life scientist.”

The conditions of approval of any land use application shall incorporate the identified mitigating measures to protect and preserve the habitats of the identified plants and/or wildlife.”

Refer to Section 5.8, *Biological Resources*, for a discussion regarding biological conditions on the Project site and the County’s Plant Protection and Management Ordinance (Division 9 of the Development Code).

It is the intent of the SR Overlay District is to provide development standards that will protect, preserve and enhance the aesthetic resources of the County. Design considerations can be incorporated in many instances to allow development to coexist and not substantially interfere with the preservation of unique natural resources, roadside views and scenic corridors of such natural resources. It is also the intent of the SR Overlay District to implement state and federal programs and regulations regarding scenic highway routes. Section 85.030610, *Development Standards*, identifies various criteria used to evaluate a project’s compliance with the intent of the overlay. The compliance criteria for the SR Overlay District generally involve the following issues:

- Building and structure placement;
- Review area;

- Access drives;
- Landscaping;
- Roads, pedestrian walkways, parking and storage areas;
- Above ground utilities;
- Grading;
- Timber harvesting;
- Storage areas; and
- Signage.

Refer to Section 5.4, *Aesthetics/Light and Glare*, for further discussion relative to SR Overlay District requirements.

Planning Areas

Section 86.040250, *Bear Valley Planning Area*, outlines the following development standards and land uses to replace or modify the corresponding development standards or land uses provided in the Land Use Districts and applicable Overlay Districts:

- Maximum Structure Height (feet): 35
- Minimum Lot Size (SF): 7,200
- Maximum Lot Coverage (building coverage): 40%
- Maximum Lot Dimensions (width to depth ratio)
 - ≥10 AC: 1:4
 - ≤10 AC: 1:3
- Minimum Lot Dimensions (width/depth in feet)
 - interior lot: 60/100
 - corner lot: 70/100
 - lot size 1 acre+: 150 wide
- Front Yard Setback (feet): 15
- Site Yard Setbacks (feet): 20% of lot width, need not exceed 15
- Rear Yard Setbacks (feet): 15
- Street Side Yard Setbacks (feet): 15

Plant Protection and Management

Refer to Section 5.8, *Biological Resources*, for a discussion regarding the Project's compliance with the County's Plant Protection and Management Ordinance (Division 9 of the Development Code).

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

The Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization for six counties in Southern California including: Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial. As the regional planning association, SCAG is mandated by the Federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality. Therefore, SCAG has developed the Regional Comprehensive Plan and Guide (RCPG) which is a general planning guide for the six counties to follow in: Strategy, Economy, Growth Management, Mobility (transportation), Air Quality,

Housing, Human Resources and Services, Finance, Open Space and Conservation, Water Resources, Water Quality, Energy, Hazardous Waste Management, Integrated Solid Waste Management and Plan Implementation. The proposed Project is not considered by SCAG to be regionally significant, and therefore, no additional review is necessary.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for Los Angeles and Orange counties and parts of Riverside and San Bernardino counties. The SCAQMD is responsible for controlling emissions from stationary sources of pollution, such as large power plants, refineries and gas stations. In order to achieve the federally mandated five percent annual reduction goal, SCAQMD has developed and adopted the Air Quality Management Plan (AQMP). A 1997 AQMP was prepared by the SCAQMD and adopted by the District Governing Board on November 15, 1996. The 1997 Plan contains two tiers of control measures. Short and intermediate term measures are scheduled to be adopted through the year 2005. These measures rely on known technologies and other actions to be taken by several agencies that currently have the statutory authority to implement the measures. They are designed to satisfy the Federal Clean Air Act (CAA) requirement of Reasonably Available Control Technology (RACT) and the California Clean Air Act (CCAA) requirement of Best Available Retrofit Control Technology (BARCT). Refer to Section 5.6, *Air Quality*, for a discussion regarding the Project's consistency with the 1997 AQMP.

IMPACTS

SIGNIFICANCE CRITERIA

Appendix G of the California Environmental Quality Act (CEQA) Guidelines contains the Initial Study Environmental Checklist form which includes questions relating to land use and relevant planning. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this Section. Accordingly, a project may create a significant environmental impact if it causes one or more of the following to occur:

- Physically divides an established community (refer to Section 10.0, *Effects Found Not to be Significant*);
- Conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (refer to Impact Statements 5.1-1 and 5.1-2); and/or
- Conflicts with any applicable habitat conservation plan or natural community conservation plan (refer to Section 5.8, *Biological Resources*).

Generally, the intermixing of land uses may result in land use incompatibilities. Land use compatibility impacts associated with land development are a factor of quality of

life issues, including, but not limited to traffic, noise, air quality and aesthetics (views/physical scale). While these may generally be perceived as subjective issues, the significance criteria detailed in each of the respective issues sections provides a basis for assessing land use compatibility impacts.

SAN BERNARDINO COUNTY GENERAL PLAN

5.1-1 *The proposed Project conflicts with the land use plan, policies and regulations set forth in the San Bernardino County General Plan. 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).*

As described in the *Existing Conditions* subsection, the San Bernardino County General Plan is organized according to four planning issues: Natural Hazards, Man-Made Hazards, Natural Resources, Man-Made Resources. Additionally, the General Plan identifies regional/subregional planning areas within the County.

The General Plan contains recommendations for development that pertain to the Project area (refer to the *Existing Conditions* discussion). The following analysis evaluates the Project's consistency/compliance with these recommendations:

NATURAL HAZARDS

As previously noted, four major groups of natural hazards are addressed under this issue area including Geologic, Flood, Fire, Wind and Erosion.

The Project site is located in a Geologic Hazards Overlay District. Refer to Section 5.10, *Geology and Soils*, for a discussion of potential Project impacts associated with geologic hazards.

The Project site is located in a Fire Safety Overlay District. Accordingly, Project development would be subject to compliance with various policies and standards for adequate services and facilities, including developmental regulation requirements for minimum road widths and clearance around structures. Additionally, the Project would be required to be adequately served by water supplies for domestic use and community fire protection in accordance with standards as determined by the County and the local fire protection agency/authority. A less than significant impact would occur in this regard following compliance with fire flow requirements and with the provision of adequate and reliable water storage for community fire protection. Refer to the *Development Code* section below and Section 5.3, *Public Services and Utilities*, for further discussion regarding potential fire hazards.

Refer to Section 5.11, *Hydrology and Drainage*, for a discussion of potential Project impacts relative to flood and erosions hazards.

MAN-MADE HAZARDS

The issues relevant to man-made hazards addressed in this section include Noise, Aviation Safety, and Hazardous Waste/Materials. Refer to Section 5.7, *Noise*, for a

discussion of potential impacts relative to noise hazards. Refer to Section 10.0, *Effects Found Not to be Significant*, for a discussion of potential impacts relative to aviation safety and hazardous waste/materials hazards.

NATURAL RESOURCES

This section identified seven categories of natural resources in the County, including biological and scenic resources. As previously noted, the Project site contains certain species of plants and wildlife considered endangered or threatened. Refer to Section 5.8, *Biological Resources*, for a discussion of potential impacts relative to biological resources and an evaluation of the Project's compliance with the Biotic Resources Overlay District Requirements.

State Highway 38 is a County designated Scenic Highway. Refer to Section 5.4, *Aesthetics/Light and Glare*, for a discussion of potential impacts relative to scenic resources and an evaluation of the Project's compliance with the Scenic Resources Overlay District Requirements.

Refer to Section 5.6, *Air Quality*, and Section 5.9, *Cultural Resources*, for a discussion of potential impacts relative to air quality and cultural/paleontological resources, respectively. Refer to Section 5.11, *Hydrology and Drainage*, and Section 5.3, *Public Services and Utilities*, for a discussion of potential impacts relative to water resources. Refer to Section 10.0, *Effects Found Not to be Significant*, for a discussion of potential impacts relative to soils/agriculture and mineral resources.

MAN-MADE RESOURCES

Transportation/Circulation. The Project proposes the relocation of approximately 2,498 linear feet of State Route 38 (North Shore Drive). State Route 38 (North Shore Drive) is classified as a State Highway. The Project would be required to construct this Highway in compliance with the special standards and conditions specified by Caltrans. As indicated in Section 5.5, *Traffic and Circulation*, implementation of the proposed Project would not overburden State Route 38 (North Shore Drive), as it would result in a less than significant impact to the Level of Service (LOS) for the Highway. Also, as the proposed highway improvements would occur in two phases, the Project would not impair emergency vehicle access or escape routes during emergencies. Highway construction would be subject to compliance with various development criteria and Caltrans standards relative to setbacks, prohibited direct access, the provision of left turn lanes (as necessary), shoulder width requirements, and pedestrian crossing requirements. The Project's proposed realignment of State Route 38 (North Shore Drive) would be subject to County of San Bernardino and Caltrans policies and standards. With the proposed amendment to the Transportation/Circulation Maps, the Project would be considered compatible and consistent with the General Plan. Thus, it is concluded that impacts would be less than significant.

Additionally, the Project proposes one loop road north of State Route 38 (North Shore Drive) providing access to 64 northerly residential lots and one loop road and five separate cul-de-sac drives south of State Route 38 providing access to 31 lakefront lots. These proposed improvements would be subject to compliance with

the General Plan's minimum standards and requirements for roads and access improvements for new developments. A less than significant impact is anticipated in this regard after compliance with the standards and requirements.

Refer to Section 5.5, *Traffic and Circulation*, for further discussion regarding potential impacts to transportation/circulation resources. Refer to Section 5.3, *Public Utilities*, for a discussion regarding potential impacts to wastewater systems and solid waste management. Refer to Section 10.0, *Effects Found Not to be Significant*, for a discussion regarding potential impacts to energy/telecommunications and housing/demographics.

Land Use/Growth Management. The proposed Project would be considered compatible and consistent with the relevant Land Use Element policies (Policy LU-2) based on the following conclusions:

- Project development would meet the Locational Criteria and the Building Intensity Standards for the RS District as discussed below in the *Official Land Use Districts* section.
- The Project would be considered compatible with adjacent land uses and community character since it would be an extension of the existing land use pattern of RS Districts.
- The Project would allow for a variety of housing types since the proposed 95-lot residential subdivision would provide 92 residential lots ranging in size from 0.17 acres (7,292 square feet) to 2.11 acres (refer to Exhibit 3-4, *Site Plan – Tentative Tract #16136*).

Location, Distribution, and Intensity of Land Uses

Official Land Use Districts

As previously noted, the Project site is currently designated RL-40 (Rural Living). The Project proposes a Land Use District Change from RL-40 to Single Residential (RS). The RS District is described as follows:

- Single Residential (RS): The intended use of the RS District is to provide sites for single-family residential uses, incidental agricultural and recreational uses, and similar and compatible uses. The purpose of the RS District is as follows:
 - To provide areas for single-family homes on individual lots.
 - To provide areas for accessory and non-residential uses that complement single residential neighborhoods.
 - To discourage incompatible non-residential uses in single-family residential neighborhoods.

The Locational Criteria for the RS District are as follows:

- Areas that are not adjacent to Regional Industrial or Agriculture District except where the ultimate minimum residential parcel sizes shall be 1.0 acre or larger.
- Areas that are within one mile of major arterial and/or existing major public transit route.

The Building Intensity Standards for the RS District are as follows:

- Maximum Housing Density — 4 DU/AC
- Minimum Net Parcel Size — 7,200 SF
- Minimum District Size — 10 AC
- Maximum Building Coverage — 40%
- Maximum Building Height — 35 feet

Development of the proposed Project would be consistent with the standards and criteria established for the RS District. The Project would be consistent with the purpose and intended use of the RS District, since it proposes development of 92 single-family residential lots, and a boat dock and parking lot (for use by residents), which would be considered incidental recreational and accessory uses that would complement the proposed residences. The Project would be consistent with the Locational Criteria for the RS District since the Project site is not located adjacent to a Regional Industrial or Agriculture District and is located within one mile of State Route 38 (North Shore Drive), a major arterial.² The Project would be consistent with the Building Intensity Standards for the RS District regarding maximum housing density, minimum net parcel size and minimum District size since the Project proposes a maximum of four DU/AC, a minimum net parcel size of 7,292 SF and a Project area (District) exceeding 10 AC (the Project site is approximately 62.43 AC). The proposed residential lots would be sold individually and development of lots and construction of dwellings would be by custom design. Therefore, future lot development would be required to comply with the 40 percent maximum building coverage and the 35-foot maximum building height. With the proposed change to the Official Land Use District (from RL-40 to RS), the Project would be considered compatible and consistent with the General Plan. Additionally, it should be noted that the Project can be considered a reasonable extension of the existing land use pattern in the surrounding area. As outlined in Table 5.1-1, *Summary of Land Uses*, existing RS Districts are located north, south, east and west of the Project site. A less than significant impact would occur with the proposed Official Land Use District Change.

Improvement Standards

As previously noted, the Project site has been designated IL1, thus, would be required to provide each of the improvements specified in Figure II-15 of the San Bernardino County General Plan, *Improvement Standards – Mountain*. The Project would be subject to implementation of the IL1 standards according to detailed

² The Project site is actually traversed by State Route 38.

County guidelines. With implementation of the required improvements, the Project would provide the appropriate and applicable infrastructure facilities and services essential to the proposed residential uses. Additionally, the Project would represent a reasonable extension of the existing pattern of infrastructure facilities and services in the surrounding area. As outlined in Table 5.1-1, *Summary of Land Uses*, existing IL1 areas are located north, south, east and west of the Project site. A less than significant impact is anticipated in this regard.

Maps

The Project proposes a Land Use District Change from RL-40 to Single Residential (RS) District. The Official Land Use Districts Map would require an amendment reflecting the property's District Change to RS. As noted in the *Official Land Use Districts* discussion above, a less than significant impact would occur with the proposed Land Use District Change.

According to the Hazards and the Natural Resources Overlay Maps, the Project site is located within a Geologic Hazards Overlay District, a Fire Hazards Overlay District, a Scenic Resources Overlay District, and a Biotic Resources Overlay District. Accordingly, the Project would be subject to compliance with special policies, and special development and performance standards intended to protect public health/safety and natural resources. Refer to the *Development Code* section below for a discussion regarding the Project's compliance with policies and standards required in Overlay Districts.

The Project proposes an amendment to the Transportation/Circulation Maps, changing the alignment of State Route 38 (North Shore Drive). As noted in the *Man-Made Resources* discussion above, a less than significant impact would occur with the proposed Transportation/Circulation Maps Amendment.

No change to the Infrastructure/Improvement Level Maps is proposed by the Project and no impact would occur in this regard.

Regional/Sub-regional Planning Areas

The Project site is located within the Mountain Region, the Big Bear Lake Planning Area, and the Bear Valley (BV) (Fawnskin) Community. Refer to the *Planning Areas* Section below for a discussion of the Project's consistency with development criteria for the BV Community.

SAN BERNARDINO COUNTY DEVELOPMENT CODE

5.1-2 *The proposed Project conflicts with the land use plan, policies and regulations of the San Bernardino County Development Code. Analysis has concluded that a less than significant impact would occur with approval of a Land Use District Change, Circulation Element Amendment and Conditional Use Permit.*

Land Use District Change

The Project proposes a Land Use District Change from Rural Living (RL) District (Section 84.0320) to Single Residential (RS) District (Section 84.0325). According to Section 83.020110, *Findings*, a General Plan Land Use District Change requires that the following be true:

- The proposed land use District change is in the public interest, there will be a community benefit, and other existing and permitted uses will not be compromised.
- The proposed land use District change is consistent with the goals and policies of the General Plan, and will provide a reasonable and logical extension of the existing land use pattern in the surrounding area.
- The proposed land use District change does not conflict with provisions of this Code, or any applicable specific plan.
- The proposed land use District change will not have a substantial adverse effect on surrounding property.

These criteria are true for the proposed Project based on the following conclusions:

- Implementation of the proposed Project would be considered an extension of the existing land use pattern (i.e., surrounding single-family residential uses). Further, while the Project is large in comparison to an individual lot development, it offers the opportunity for a cohesively planned development, which would be subject to compliance with the County's administrative design guidelines, as well as the development standards specified for the RS District. Also, the Project would be required to comply with the mitigation measures specified in this EIR to avoid or lessen potential Project impacts. The measures identified in this document have taken into consideration the property's setting, opportunities, and constraints. Following compliance with the specified development standards, design guidelines, and mitigation measures, Project implementation would not compromise existing single-family residential and rural land uses.
- As discussed above, the proposed Project is considered consistent with the relevant Land Use Element goals and policies. Also, the proposed single-family residential development is considered a reasonable extension of the existing land use pattern in the surrounding area since existing RS Districts (i.e., single-family residential developments) are located north, south, east and west of the Project site (refer to Table 5.1-1, *Summary of Land Uses*).

Compliance with the established development standards, design guidelines, and mitigation measures, would improve the interface between rural and residential uses, where appropriate.

- Analysis provided in this section (i.e., the *Development Code* section) has concluded that the proposed Project would not conflict with the provisions of

the San Bernardino County Development Code with approval of a Land Use District Change, Circulation Element Amendment and Conditional Use Permit.

- The proposed Land Use District Change would not have a substantial adverse effect on surrounding properties following compliance with the established development standards, design guidelines, and mitigation measures. The Project is considered compatible with the surrounding land uses based on two factors: the Land Use District Change proposed by the Project would meet each of the criteria required for a Land Use District Change; and the Project's proposed single-family residential development would be an extension of the existing land use pattern of RS Districts (single-family residential).

Permitted Uses and Development Standards

According to Code Section 84.0325, Single Residential (RS) District, permitted uses within the Single Residential (RS) District shall include the following:

- Row, Field, Tree and Nursery Crop Cultivation;
- Single dwelling unit;
- Social Care Facility; and
- Accessory Uses specified by Chapter 5 (of Title 8, Division 4).

Land uses subject to department review/conditional use permit include the following:

- Mobilehome Park;
- Additional uses as specified by Chapter 4 (of Title 8, Division 4); and
- Animal raising.

According to Section 84.0401, *Additional Use Criteria*, the land uses listed in Section 84.0410 shall be allowed in any Official Land Use District subject to a Conditional Use Permit when one or more of the following criteria have been met:

- The location of the land use is determined by other land uses which are directly supported by the proposed use; or
- The land use is part of the community or regional infrastructure; or
- The location of the proposed use is determined by the location of raw materials in their natural state such as mineral deposits, natural vegetation and energy sources; or
- The character of the proposed use is such that it requires a remote location away from other land uses; or
- The land use is deemed essential or desirable to the public convenience or welfare.

The Project proposes single-family residential uses that are permitted within the RS District. The Project also proposes a Marina boat dock and parking lot, which may be permitted within the RS District, subject to an approved CUP. According to Section 84.0410(c) and (q), *List of Additional Uses*, the proposed boat dock and parking lot would be allowed in any Official Land Use District subject to the criteria noted above (Section 84.0401). The proposed boat dock and parking lot would be conditionally permitted since they meet two of the criteria listed above: their location would be determined by the proposed residential uses they would support and the land use is deemed essential or desirable to the public convenience or welfare. It is further noted, as discussed in Section 5.2, *Recreation*, that the marina dock/boatslip facilities are subject to requirements set forth by the Big Bear Municipal Water District, County of San Bernardino, and City of Big Bear Lake.

The following property development standards apply to all land uses within the RS District:

- Maximum Structure Height (feet): 35
- Minimum Lot Size (SF): 7,200
- Maximum Lot Coverage (building coverage): 40%
- Maximum Lot Dimensions (width to depth ratio)
 - ≥10 AC: 1:4
 - ≤10 AC: 1:3
- Minimum Lot Dimensions (width/depth in feet)
 - ≥1 AC: 150/150
 - ≤1 AC: 60/100
- Front Yard Setback (feet): 25
- Side Yard Setbacks (feet): 10 & 5
- Rear Yard Setbacks (feet): 15
- Street Side Yard Setbacks (feet):
 - Street type: Local: 15
 - Street type collector/wider: 25
- Maximum Housing Density (DU/AC): 4
- Minimum District Size (AC): 10

Based on the proposed site plan (refer to Exhibit 3-4, *Site Plan*), the proposed Project would be consistent with the property development standards for the RS District regarding minimum lot size, and maximum and minimum lot dimensions, since the Project proposes a minimum lot size of 7,292 SF and the proposed residential lots meet the maximum and minimum lot dimensions (refer to Exhibit 3-4, *Site Plan*). Additionally, the proposed Project would be consistent with the property development standards regarding maximum housing density and minimum District size, since the Project proposes a maximum of 4.0 DU/AC and the Project area (District) exceeds 10 AC (the Project site is approximately 62.43 AC). The proposed residential lots would be sold individually and development of lots and construction of dwellings would be by custom design. Through the site plan review process, future lot development would be required to comply with each of the development standards for the RS District including the 35-foot maximum structure height, 40 percent maximum lot coverage, and the front, side, rear, and street side yard setbacks. Additionally, future development would be required to comply with the County's administrative design guidelines and mitigation measures identified in this

EIR to avoid or lessen potential impacts. A less than significant impact would occur in this regard.

Overlay Districts

The Project site is located within a Fire Safety (FR) Overlay District and within Fire Safety Review Area 1 (FR1). Therefore, the Project would be subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control, as specified in Section 85.020220, *Building Standards for FS1*. Also, the proposed Project, including future residential lot development, would be subject to compliance with the County's design guidelines relative to fire protection (i.e., access, fire flow, safety standards, building setbacks, fuel modification areas, roof coverings, and chimneys). A less than significant impact would occur in this regard following compliance with the specified requirements.

The Project site is located within a Geologic Hazard (GH) Overlay District. The proposed Project is in compliance with Section 85.020410, *Geologic Reports*. As noted in Section 5.10, *Geology and Soils*, *Geomatrix Consultants, Inc.* has prepared a Geology and Soils Study of the Project site (refer to Section 15.7, *Geology/Soils Analysis*). The Study has confirmed the absence of faults and marsh areas on the Project site. The Project would be required to comply with various development standards (set forth in Section 5.10 of this EIR). A less than significant impact would occur in this regard after compliance with the specified development standards.

The Project site is located within a Biotic Resources (BR) Overlay District. The proposed Project is in compliance with the development standards for this District. As noted in Section 5.8, *Biological Resources*, *BonTerra Consulting* has prepared a Biological Resources Assessment of the Project site. The Assessment identifies biotic resources located on the Project site and on adjacent parcels that could be impacted by the proposed development. The report outlines mitigation measures intended to avoid or lessen impacts to the identified resource(s). The conditions of approval for the proposed Project would be required to incorporate the identified mitigation measures. A less than significant impact would occur in this regard.

The Project site is located within a Scenic Resources (SR) Overlay District. Thus, the Project would be subject to compliance with various compliance criteria as specified in Section 85.030610, *Development Standards*. Refer to Section 5.4 *Aesthetics/Light and Glare*, for an analysis of the Project's compliance with these criteria.

Planning Areas

The proposed Project would be consistent with the development standards for the Bear Valley Planning Area regarding minimum lot size, and maximum and minimum lot dimensions since the Project proposes a minimum lot size of 7,292 SF and the proposed residential lots meet the maximum and minimum lot dimensions. The proposed residential lots would be sold individually and development of lots and

construction of dwellings would be by custom design. Through the site plan review process, future lot development would be required to comply with the 35-foot

maximum structure height, 40 percent maximum lot coverage, and the front, side, rear, and street side yard setbacks. Additionally, future development would be required to comply with the County's administrative design guidelines and mitigation measures identified in this EIR to avoid or lessen potential impacts. A less than significant impact would occur in this regard.

CUMULATIVE

5.1-3 *The proposed Project, combined with other future development, would increase the intensity of land uses in the area. Analysis has concluded that impacts are less than significant and no mitigation is required. Projects are evaluated on a project-by-project basis in accordance with the San Bernardino County General Plan and Development Code.*

Development of the site, as proposed, would not result in any cumulative significant land use impacts, as other projects are implemented in the area. Each new project would undergo the same review process, as the proposed Project, in order to preclude potential land use compatibility issues and planning policy conflicts. It is assumed that cumulative development would progress in accordance with the City of Big Bear Lake and County of San Bernardino General Plan and Development Code. Each 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.

MITIGATION MEASURES

This section directly corresponds to the identified impact statements in the impacts subsection.

SAN BERNARDINO COUNTY GENERAL PLAN

5.1-1 No mitigation measures are recommended.

SAN BERNARDINO COUNTY DEVELOPMENT CODE

5.1-2 No mitigation measures are recommended.

CUMULATIVE

5.1-3 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

No unavoidable significant impacts related to Land Use and Relevant Planning have been identified following compliance with the San Bernardino County General Plan and Development Code policies and standards.

5.2 RECREATION

This Section focuses primarily on potential impacts resulting from the loss of on-site trails and dirt roads, which are used for hiking and access, and the increased use of the Big Bear Lake facilities. Permit requirements are identified to reduce the significance of potential impacts. Impacts to other recreational facilities in the local area are also addressed.

EXISTING CONDITIONS

ON-SITE RECREATION

Existing on-site recreation activities include picnicking, bird watching, fishing, walking and bicycle riding. Walkers and outdoor enthusiasts (including photographers and hikers) utilizing the on-site trails/footpaths for exercise and/or recreational activities, enjoy views of the on-site Jeffrey pine trees and Big Bear Lake to the south, as well as observing on-site flora and fauna species (refer to Section 5.8, *Biological Resources*). A variety of waterfowl can be also observed along the lakefront, including Great Blue Herons and Ospreys. The site can be used to access fishing locations at the lakefront. The site also provides access to the San Bernardino National Forest to the north. Although the Project site provides numerous recreational opportunities, public access to the site and lake is not assured, since the Project site is private property.

OFF-SITE RECREATION

The Big Bear Lake area includes several unincorporated communities and the City of Big Bear Lake. The Lake area is considered a premier recreational and vacation resort area of Southern California. Traditional winter recreational activities in the area include skiing and snowboarding. The area is home to the Bear Mountain and Snow Summit ski resorts. During the summer, the Big Bear Lake area provides visitors and residents with numerous camping, picnicking, fishing, boating, bird watching, horseback riding and bicycling opportunities. Additionally, during the summer, the ski resorts open their trails for mountain biking.

The Moon Camp 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, bicycling paths, campgrounds and picnic areas. The Serrano Campground is located southeast of the project site and the Lake provides various boating and fishing recreational opportunities for the Fawnskin area. The lake's waters are utilized by recreational boaters, as well as smaller recreational craft (jet skis, kayaks, etc.). Recreational activities occur daily on the lake, with greater use on weekends, and the highest use occurring on major spring and summer holiday weekends.

BIG BEAR LAKE

Regulatory Authority. The County of San Bernardino has jurisdiction over the entire bottom of the Lake. The Big Bear Municipal Water District owns and therefore has

jurisdiction that extends to the high water line of the Lake. The Big Bear Municipal Water District (MWD) has authority to regulate recreational activity on the Lake's surface.

Public Access to Lake. According to the Big Bear Municipal Water District Management Plan, dated August 3, 2000 (Revision), to ensure that public access to the Lake is preserved, the Big Bear MWD has constructed two public boat launch ramps and improvements at the Stanfield Marsh that includes a parking and 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 eleven commercial marinas providing access to the Lake. The Forest Service has constructed the Alpine Pedal Path Bike Trail along the north shore of the Lake, which extends from Stanfield Cutoff, through the MWD East Boat Ramp, to the Solar Observatory, which is immediately to the east of the Moon Camp site. The MWD also owns and operates a recreational vehicle park adjacent to their administrative offices. As previously stated, since the Project site is private property, public access to the lake is not assured.

Recreational Lake Activity. As previously stated, the MWD regulates recreational activities and facilities on the Lake. The MWD provides an annual review of Lake use data, including types of boating activity, shoreline use and parking at the public launch ramps, in order to determine if there is a need to expand or develop additional recreational facilities. When an analysis of data indicates that the Lake, ramp or shoreline use has reached a level where current facilities cannot meet the public demand, the District examines solutions to the problem.

As referenced in the MWD Management Plan, there is an average of 2,710 usable Lake acres between April and October, which is the peak boating season. In May of 1984, the District approved a lake carrying capacity of 1,000 boats. At that same time, it was also determined that the maximum number of dock slips which may be available on the Lake at full build-out is 5,200. The weekend use factor of those docks was determined to be nine percent. Based on that calculation, the maximum number of boats from docking facilities on a weekend is 468. This allows for an additional 632 boats to be launched from the public launch ramps or private marinas before the 1,000 boat maximum would be reached. As of August 2000, mooring availability on the Lake was less than 2,500, which if multiplied by the nine percent factor, equates to less than 255 boats using the docking facilities. In 1999, to ensure that the number of docks on the Lake would not eventually contribute to an exceedence of the number of allowable boats on the Lake, the District reduced the number of allowable moorings for lakefront businesses.

According to the MWD Water Management Plan, during the 1996 season, the average daily use of boats was 262 during the summer peak season. The 1997 average was 199 boats, the 1998 average number of boats was 208 and the 1999 average was 199. As of 2000, boat fishing accounts for approximately 50 percent of Lake boating use. Each summer, the three major holiday weekends (Memorial Day, July 4th and Labor Day) always results in increased lake usage. Although safety problems have not occurred as a result of the increased Lake usage on the holiday weekends, parking has been a problem on peak days at public launch ramps.

The MWD Water Management Plan states that shoreline use for picnicking, fishing and hiking averaged 616 people per day in the 1996 summer season, 511 people in 1997, 586 in 1998 and 493 in 1999. Shore fishing is most popular in April and May when the shallow areas are relatively free of aquatic plants. Due to aquatic plants, the most popular fishing areas in the summertime include the dam area, Windy Point, Fisher Point, Juniper Point and Dana Point. The two piers, at each of the District's public launch ramps have improved fishing access along the north shore of the Lake.

IMPACTS

SIGNIFICANCE CRITERIA

Appendix G, *Initial Study Checklist*, of the California Environmental Quality Act (CEQA) Guidelines includes checklist questions relating to recreation. A project would potentially create a significant impact if it caused one or more of the following to occur:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (refer to Section 10.0, *Effects Found Not To Be Significant*);
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (refer to Impact Statement 5.2-1).

Potential impacts are grouped below according to topic. The numbered mitigation measures at the end of this Section directly correspond with the numbered impact statement.

EXPANSION AND/OR CONSTRUCTION OF RECREATIONAL FACILITIES

- 5.2-1 *Implementation of the Moon Camp project involves the construction or expansion of recreational facilities which 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.*

The Moon Camp Project proposes to construct approximately 100 boat docks (dependent upon demand) at the southwest corner of the project site, along the north shore of Big Bear Lake. The boat docks would be accessible through a gated entrance and available to residents of the Moon Camp tract.

Per an agreement executed in 1974, Big Bear Properties acquired the rights to certain commercial boat landing (marina) permits. The rights for two of these permits have yet to be exercised and were transferred to Forest Properties. According to the MWD, one of the two permit rights have been assigned to the Moon Camp

Development.¹ Since the Applicant wishes to operate a private dock club for the use of homeowners and their tenants and guests, the project would be required to exchange the marina permit for the right to obtain a “Yacht Club” dock license.² Dock privileges are normally granted only to lakefront properties, however, the yacht club license would allow a dock slip for each single-family dwelling parcel, plus additional slips equal to 10 percent of the total number of parcels. In this case that formula would restrict the dock system to a maximum of 101 slips (92 lots + (92 lots x 10%) = 101 slips). The number of lakefront homeowners who exercise their individual dock privileges could reduce this number. Thus, the proposed 100 dock slips would be consistent with the provisions set forth for Yacht Clubs by the District.

As stated in the existing conditions, 1,000 boats is the carrying capacity of Big Bear Lake and the maximum number of dock slips on the Lake would be 5,200. The 100 proposed dock slips would not surpass the total amount of dock slips allowed on the Lake. The 100 dock slips, if multiplied by the weekend use factor of nine percent, would add approximately nine boats per day to the daily average number of boats using the lake. This increase in boat usage on the lake would not surpass the 1,000 boat carrying capacity of the Lake. Furthermore, according to the Big Bear Municipal Water District Management Plan, current lake use statistics show that it is unlikely that in the foreseeable future, the District would need to consider any restriction on the number of boats on the Lake. In fact, as long as the parking facilities remain at the current level, use of the Lake is somewhat self-restricting.

The Big Bear Municipal Water District has identified three areas of concern with implementation of the proposed marina facilities associated with the Moon Camp project. First, a mooring plan for high and low water conditions must be submitted and reviewed to ensure that dock placement is consistent with District regulations. This would allow for a Dock System and License Agreement to be obtained. Second, any construction activity that may occur below the high water line (i.e., seawall, launch ramp, headwalk, dredging or slope modification, etc) would require a Shorezone Alteration Permit. Third, the District would need to receive a copy of the Storm Water Pollution Prevention Plan (SWPPP), approved by the Water Resources Control Board, to ensure that the Lake is adequately protected from pollutants before, during and after project construction (refer to Section 5.11, *Hydrology and Drainage*). This is especially critical as the District is currently involved with the Santa Ana Regional Water Quality Control Board in the Total Maximum Daily Load process for Big Bear Lake.

In conclusion, the proposed project would involve construction of marina facilities that may have an adverse impact on the physical environment. However, in consideration of the standards set forth by the Big Bear Municipal Water District, potential impacts to the physical environment created by the construction of recreational facilities are concluded to be less than significant.

¹ Source: Written Correspondence with Sheila Hamilton, General Manager, of the Big Bear Municipal Water District. February 28, 2002.

² Section 4.05, *Yacht Clubs*, of Resolution No. 2001-16 of the Big Bear Municipal Water District establishes regulations that govern yacht clubs.

PUBLIC ACCESS

- 5.2-2 *Implementation of the Moon Camp project would ~~not~~ affect public access along the north shore of Big Bear Lake. Mitigation requiring dedication of an easement along the south side of North Shore Drive has been incorporated. ~~The Project site is Private Property. Affects on public access are concluded as less than significant.~~*

The Moon Camp Project would include 31 residential/numbered lots south of the realignment of North Shore Drive. Additionally, the marina facilities, inclusive of Lot "C" would be located south of North Shore Drive. Lot "C", consisting of approximately 19,683 square feet (0.45 acres), would be the gated entrance to the marina facilities. Lot "C" would be situated between the "high water line" and the roadway improvements at the southwestern portion of the project site. The Lot "C" marina access ramp would affect public access from west to east along the shoreline of the Lake.

The County of San Bernardino General Plan Goal C-54 states the intention to "provide public access to all water bodies and water courses." Furthermore, Policy/Action OR-48 states that, "Because the County seeks to improve the ability of the public to enjoy water-related recreation, the County shall seek to improve public access to rivers, lakes, creeks, lakes and other bodies of water." Additionally, Policy/Action OR-49 states that "Because public access to water for recreational uses is important to the County, easements and dedications allowed in the Subdivision Map Act to acquire access to lakes, streams, public lands and other locally and regionally significant natural features shall be required for all new development." ~~However, since the Project site is private property, public access is not assured. As the project abuts existing homes to the east and the proposed Marina Point Development to the west, P~~public access to the lakeshore would be maintained below the high water line of the lake.~~maintained at the eastern and western boundaries of the site.~~ Public access to the lakeshore also continues to be maintained at other locations along the perimeter of the lake. ~~However, since the Project site is private property, public access is not assured.~~

~~It is further noted that Although~~ the U.S. Forest Service has indicated that there are no current plans to extend the Alpine Pedal Path through the project area, as a result of redesign of portions of the project area, south of North Shore Drive, a pedal path easement could be established. Thus, mitigation incorporating an easement has been incorporated for the project, to be conditioned, prior to recordation of a map. Thus, it is concluded that access is provided to the lakeshore in close proximity to the project site resulting in a conclusion of less than significant impact.

CUMULATIVE

- 5.2-3 *Cumulative development may result in increased use of existing recreational areas/facilities, thereby creating the potential for physical deterioration. Additionally, cumulative development may include recreational facilities (i.e., marina) that have the potential to result in physical impacts on the environment. Mitigation measures necessary for*

reducing impacts are addressed on a project-by-project basis to reduce impacts to a less than significant level.

The proposed Project would contribute to the cumulative need for more recreational park space and related facilities. Although, the proposed Project would increase the use of existing facilities, the proposed project would also create a new recreation facility (marina). Cumulative projects would be required to mitigate incremental impacts to Countywide recreational facilities, resulting in a less than significant impact.

Additionally, as stated in Impact Statement 5.2-1, Big Bear Lake has been identified as a primary recreational entity associated with the proposed project. According to the Big Bear Municipal Water District, the Lake has a maximum boat carrying capacity of 1,000 boats. The approximately 100 boat slips associated with the Moon Camp project and the approximately 175 boat slips at the Cluster Pines project would not surpass the boating capacity or the dock slips capacity of the Lake at full build-out.

MITIGATION MEASURES

The following mitigation measures directly correspond to the identified impact statements in the Impacts discussion.

EXPANSION AND/OR CONSTRUCTION OF RECREATIONAL FACILITIES

5.2-1 No mitigation measures are recommended.

PUBLIC ACCESS

5.2-2 ~~No mitigation measures are recommended.~~ The proposed project shall be conditioned to incorporate a pedal path easement along the south side of North Shore Drive, prior to map recordation.

CUMULATIVE

5.2-3 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant impacts related to Recreational facilities have been identified in this Section.

5.3 PUBLIC SERVICES AND UTILITIES

This Section is based, in part, on correspondence from public service and utility agencies (refer to Appendix 15.12, *Correspondence*) and references which include a, the Geohydrologic Investigation of the Moon Camp Area (GSS 2000 report), prepared by Geoscience Support Services, Inc. (GSS) (July 2000), the Focused Geohydrologic Evaluation of the Maximum Perennial Yield of the North Shore and Grout Creek Hydrologic Subunit Tributary Subareas (GSS 2003 report), prepared by GSS (December 2003), the Moon Camp Water Feasibility Study prepared by So & Associates Engineers, Inc. (March, 2002), and the County Service Area 53 Sewer Study by So & Associates Engineers, Inc. (July, 2001) (refer to Appendix 15.12, *Correspondence*). Public services include fire protection, police protection, schools and libraries. Utilities and service systems include water, wastewater, solid waste, electricity and natural gas services. This Section includes an Existing Conditions discussion which provides background information necessary to understand potential impacts of the proposed Project. Mitigation measures are identified in an effort to reduce potential impacts to less than significant levels.

EXISTING CONDITIONS

FIRE PROTECTION

The County of San Bernardino Fire Department provides fire protection and emergency medical services to the Fawnskin area. The Project area is served by County Fire Station No. 49, located in Fawnskin, at 39188 Rim of the World Drive (approximately $\frac{3}{4}$ of a mile westerly of the site). Two permanent personnel (one of the two is a paramedic) and approximately eight to ten volunteer fire fighters serve Station 49. Mutual aid agreements exist with the City of Big Bear Lake and Big Bear City. These agreements provide first-response in the event additional equipment and manpower is necessary during a multi-alarm fire or in the event that these stations could provide first alarm response with the closest available equipment.

The Insurance Service Organization (ISO) is a private insurance research group that periodically assesses the degree to which fire threatens geographic areas. This rating is based on the type of vegetation or structures present, climate, and the availability of fire protection services. The ISO uses a scale of 1 (best protection or lowest threat) to 10 (least protection or higher threat). Presently, the Community of Fawnskin has an ISO rating of 9.

The Project site is located within a Fire Safety (FRS) Overlay District Area 21 (FR2S1), as designated by the County of San Bernardino General Plan Hazard Maps. FS1 areas are subject to compliance with various requirements relative to construction, building separations, project design, and erosion and sediment control as specified in Section 85.020220, ~~Area FR1 and FR2 Requirements~~ Building Standards for FS1, of the County Development Code. The provisions of the FR2S1 District apply to all phases of development. Refer to Section 5.1, *Land Use and Relevant Planning*, for further discussion of Fire Safety Overlay District requirements.

POLICE PROTECTION

Police protection to the Community of Fawnskin for both crime and traffic services is provided by the San Bernardino County Sheriff's Department. The City of Big Bear Lake and Big Bear City also provide police protection services to the Community, as needed. The mountain communities in the area have volunteer support of law enforcement through an active Search and Rescue Team, Citizen's Patrol and Neighborhood Watch Programs.

The Big Bear Sheriff's Station is located at 477 Summit Boulevard in the City of Big Bear Lake, approximately 6.0 miles east of the Project site. The station serves as host to the City of Big Bear's contract law enforcement services, personnel, as well as staff to serve the unincorporated area. The station also houses a Type I jail facility within the County building. The Department has nine patrol duties, 24-hour coverage personnel assigned to unincorporated areas, one detective and support personnel.

The Big Bear Sheriff's Station provides police protection services to a population of approximately 15,800 persons in the unincorporated San Bernardino County areas of Big Bear Valley. The Community of Fawnskin is located within the jurisdiction of the Big Bear Sheriff's Station. The average response time for emergency calls ~~to the unincorporated county area~~ within the jurisdiction of the Big Bear Sheriff's Station is 6.97 minutes. The response times may vary, plus or minus, depending on the number of service calls received. According to the Sheriff's Crimes Analysis Unit, between January 1, 2000 and January 1, 2001, the Sheriff's Department handled 9,028 calls for service in the unincorporated area of Big Bear Valley.¹

SCHOOLS

The Project site is situated within the Bear Valley Unified School District (BVUSD). The BVUSD provides education for grades Kindergarten through 12. Table 5.3-1, *Bear Valley Unified School District Facilities*, details the BVUSD schools serving the Project site and includes current enrollment and maximum capacity. As indicated in Table 5.3-1, all three schools within the BVUSD presently exceed maximum capacity. In order to meet the existing need, portable classrooms have been located on these school campuses. According to the "Developer Fee Justification and Impact Analysis," dated October 2000, the average student generation rate per dwelling unit (DU) is 0.21 students/DU. According to the District, based on State standards, these schools do not have adequate school housing capacity presently and replacement facilities are needed.²

¹ Source: Written correspondence from Bobby R. Phillips (Captain) at the County of San Bernardino Sheriff's Department. Letter dated June 18, 2002.

² Source: Written correspondence from Dr. John Niederkorn (Director of Business) at Bear Valley Unified School District. Letter dated June 18, 2003.

**Table 5.3-1
Bear Valley Unified School District Facilities**

School	Grade Level	Current Enrollment	Maximum Capacity	Distance to Project site (miles)
North Shore Elementary School 765 N. Stanfield Cutoff	K-6	614	588	3.0
Big Bear Middle School 41275 Big Bear Boulevard	7-8	575	408	4.5
Big Bear High School 351 N. Maple Lane	9-12	921	697	8.0

Senate Bill (SB) 50

The major source of school construction and modernization had been the State School Construction Program until the passage of Senate Bill 50 (SB 50), School Facility Program. SB 50 authorized a \$9.2 billion K-12 school and higher education bond that was presented to the State’s voters on November 3, 1998. In addition, SB 50 revised developer fee and mitigation procedures for school facility purposes and reformed the State program that distributes State bond funds to K-12 school districts. On November 3, 1998, State voters approved Proposition 1A, a \$9.2 billion bond measure, which provides funding for higher education facilities, K-12 facilities, modernization of older schools, additional funding for districts in hardship situations, and funding for class size reduction. With the passage of Proposition 1A, the *Mira* powers³ of local governments were suspended on November 4, 1998 until 2006, which is the length of time the State bond money would be available to local school districts. As a result of this, school districts would continue to levy a school fee under existing rules (Government Code Section 65995, 65995.5 and 65995.7), which is currently up to \$1.93 per square foot for residential construction and \$0.31 per square foot for commercial and industrial development. SB 50 also established three levels of school fees: Level One, Level Two, and Level Three Fees. Level One Fees are the statutory fees of \$1.93 per square foot for residential projects and \$0.31 per square foot for commercial and industrial projects, which can be adjusted for inflation every two years beginning in 2000. Level Two Fees allow school districts to impose fees beyond the base statutory cap, under specific circumstances. Level Three Fees take effect in the event the State runs out of bond funds after 2006, which would allow school districts to impose 100 percent of the cost of the school facility or mitigation minus any local dedicated school monies. The school fee amounts provided for in Government Code Sections 65995, 65995.5 and 65995.7 would constitute full and complete mitigation for school facilities.

³ The *Mira, Hart and Murrieta* court cases held that the provisions of the 1986 School Facilities Act limiting developer school fees to an initial amount of \$1.50 per square foot are only applicable to adjudicative or quasi-judicial acts (such as tentative tract maps or conditional use permit approvals) and do not apply to legislative acts (such as general plan amendments, specific plan adoption or amendment or zoning amendments). The *Mira, Hart and Murrieta* decisions provided school districts and local agencies the legal authority under CEQA to require new development to fully mitigate school impacts in connection with legislative approvals, and allowed a City Council or Board of Supervisors to deny or refuse to approve a project based upon impacts to school facilities.

LIBRARIES

The Project area is serviced by the Big Bear Lake Branch Library, a 9,543 square-foot building, located at 41930 Garstin Drive. The Library is one of 28 branch libraries within the San Bernardino County Library system and serves approximately 17,200 residents of the Big Bear Lake area and the unincorporated Bear Valley. Approximately 6,000 people visit the library per month. The Library's materials collection includes books, periodicals and audio-visual materials. Public services provided by the library include:

- Reference services for adults and children (either in person or by phone);
- Programs (Summer Reading Program, LITE Program, English improvement classes, story hours, literary and cultural programs, literacy services, etc.); and
- Electronic reference sources (electronic information databases, Internet, etc.).

The San Bernardino County Library Facility Master Plan identifies the need to expand the existing Library building from 9,543 square feet to 15,443 square feet, in response to population increases.⁴ Currently, there are no planned expansion projects for the library. Current trends in library services for the Big Bear Lake/Bear Valley area reflect increased circulation of materials, major demand for more computers and data bases, and requests for more educational programs.

WASTEWATER

The project site is located within the Big Bear Area Regional Wastewater Agency (BBARWA) sanitary sewer service area. The service area for BBARWA includes the entire Big Bear Valley and is served by three separate collection systems: the City of Big Bear Lake (62 percent of total flow), the Big Bear City Community Services District (34 percent of total flow) and County of San Bernardino Service Area 53B (four percent of total flow). Each underlying agency maintains and operates its own wastewater collection system and delivers wastewater to the BBARWA interceptor system for transport to the BBARWA Regional Wastewater Treatment Plant. The Regional Plant is a 93.5-acre site, located adjacent to Baldwin Lake in unincorporated San Bernardino County. The dry weather capacity of the Regional Plant is 4.8 million gallons per day. The average daily influent flow to the Regional Plant for 2001 was 2.1 million gallons per day.

The Project site is located within the County Service Area 53B (CSA-53B) collection system. Sewage from CSA-53B is transported via the BBARWA North Shore Interceptor/Force Main system to the Regional Wastewater Treatment Plant.

⁴ Source: E-mail correspondence from Patricia Laudisio (Facility Coordinator) at the San Bernardino County Library. December 10, 2002.

Currently, the BBARWA has a ten-inch sewer force main located within the shoulder along the south side of State Route 38 that traverses the Project site. This force main conveys raw sewage from CSA 53-B to the Regional Wastewater Treatment Plant.

WATER

The Project site lies within the service boundaries of County Service Area 53, Improvement Zone C (CSA 53-C), which was created in 1991 to provide water service to unserved areas within CSA 53. Currently, water service is not provided to the project site. Even though the site is immediately adjacent to the water service jurisdiction of the Department of Water and Power (DWP), City of Big Bear Lake, DWP cannot provide water service without first complying with the provisions of Government Code Section 56133. Section 56133 requires formal review and approval by the Local Agency Formation Commission (LAFCO). However, the County Special District Department has the ability to establish a joint powers agreement with DWP to provide water service. Due to the proximity of DWP facilities and the ability to provide more cost-effective service by contracting with DWP, this service delivery arrangement appears to be the preferred method for providing water service to the project. At this time, neither agency has committed to approving such an agreement.

DWP is a public agency that provides drinking water to approximately 14,200 customers in the City of Big Bear Lake and surrounding areas, which include Fawnskin, Moonridge, Sugarloaf, Lake Williams, the Rim Forest area, and parts of Erwin Lake. DWP is responsible for testing and monitoring the Water System to assure a safe water supply that meets all State and Federal regulations. Big Bear Valley is unique in that all of the drinking water is obtained from the snow and rain that percolates into the ground. No lake or imported water is available for drinking water in Big Bear Valley. DWP currently operates, maintains and monitors:

- 33 well sites;
- 13 booster stations;
- 17 reservoirs;
- 15 chlorination stations;
- 20 sample stations; and
- Hundreds of pressure reducing valves.

DWP installs, replaces and repairs hundreds of fire hydrants within the water system, as well as maintains, replaces and repairs 167 miles of mainlines, 14,200 meters, meter boxes and service lines and 3,000 mainline valves.

DWP's 2000 Consumer Confidence Report for the Fawnskin Water System states that six wells, two boosters and three reservoirs serve the Fawnskin area.⁵ The total capacity of the reservoirs is 365,000 gallons. There are also three portable generators and two portable booster pumps in the Fawnskin area. In 2000, 41.2 million gallons of water were pumped into the Fawnskin Water System.

⁵ Source: <http://www.citybigbearlake.com/dwp/dwppage/Forms/WQ00FSp1.pdf> .

According to the March 2002 Water Feasibility Study prepared for the Project, the Project site is located near the southeast side of Fawnskin, which, based on computer simulations receives water from Cline Miller Reservoir.⁶ Exhibit 5.3-1, *Water Distribution System*, illustrates the existing distribution piping system near the proposed development, as well as the recommended extension pipeline layout.

The DWP Board of Commissioners has considered placing limitations on the number of new water connections within Big Bear Lake, Moonridge, Erwin Lake, Sugarloaf, and Lake Williams Services areas. To date, connection limitation discussions have not focused on the Fawnskin service area.

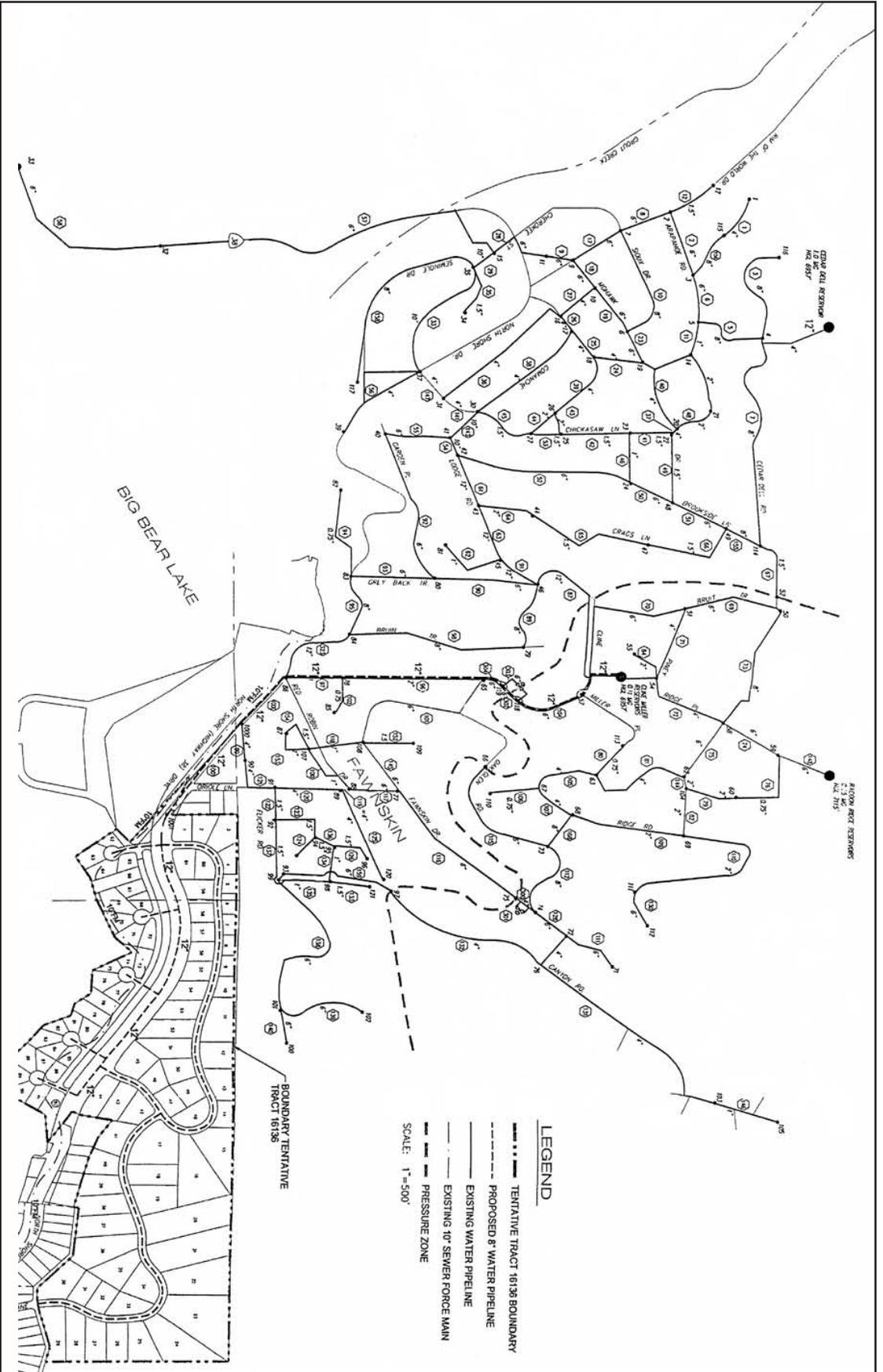
Senate Bills 221 and 610

Senate Bills 221 and 610 were signed into law by Governor Davis in 2001 and took effect January 1, 2002. The two senate bills amended State law to better link information on water supply availability to certain land use decisions by cities and counties. The two companion bills provide a regulatory forum that requires more collaborative planning between local water suppliers and cities and counties. All SB 610 and 221 reports are generated and adopted by the public water supplier.

Senate Bill (SB) 610 requires a detailed report regarding water availability and planning for additional water supplies that is included with the environmental document for specified projects. All "projects" that meet any of the following criteria require the assessment:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 ft² of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 ft² of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 ft² of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than the amount of water required by a 500 dwelling unit project.

⁶ Source: Water Feasibility Study for Tentative Tract 16136, prepared by So & Associates Engineers, Inc. March 13, 2002.



Source: City of Big Bear Lake Department of Water and Power Feasibility Study TTM 16-136.



While SB 610 primarily affects the Water Code, SB 221 principally applies to the Subdivision Map Act. The primary effect of this bill is to condition every tentative map for an applicable subdivision on the applicant by verifying that the public water supplier (PWS) has "sufficient water supply" available to serve it. Under SB 221, approval by a city or county of certain residential subdivisions requires a written verification of sufficient water supply. SB 221 applies to any "subdivision," defined as:

- A proposed residential development of more than 500 dwelling units, if the PWS has more than 5,000 service connections.
- Any proposed development that increases connections by 10 percent or more, if the PWS has fewer than 5,000 connections. Water Code 10912(7)(C) states that a "public water system" is defined as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.

Based on the "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" the following excerpt shows that 300 dwelling units are necessary to qualify as a "subdivision," and therefore be subject to SB 221.

"Code 66473.7(a) provides that a "subdivision" for a public water system with fewer than 5,000 service connections is a proposed development that would increase the number of service connection for a public water system by 10% or more. a "subdivision" could be as few as 300 dwelling units. For example, a water utility that has 3,000 service connections would experience an increase in the number of service connections by 10% if it were required to serve a proposed residential development with 300 units, thus making the 300-unit development a "subdivision" under 221."

As stated above, Water Code 10912(7)(C) states that a "public water system" is defined as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. Therefore, if Fawnskin has only 673 connections it does not qualify as a "public water system," but rather a piece of a larger "overall system." Whether the project is under the jurisdiction of the DWP or the County Special Districts Department, each of these agencies "overall system" has more than 3,000 connections qualifying them as public water systems. Thus, the proposed 92 dwelling units would not exceed 10 percent of the 3,000 connections or 300 dwelling unit minimum dwelling unit threshold to be subject to SB 221 reporting requirements.

The proposed meets neither of the above scenarios.

SOLID WASTE

Big Bear Disposal, Inc. would likely provide solid waste collection within the Project area. 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. The station is permitted to receive 400 tons of solid waste per

day. Waste would be transferred from the Big Bear Transfer Station to the Barstow Landfill.

The Barstow Landfill is also owned and operated by the County of San Bernardino Waste Management Division. The landfill is permitted to receive 525 tons of waste per day. The remaining capacity is 218,492 cubic yards and the total permitted capacity is 3,580,000 cubic yards. The landfill is scheduled to close June 1, 2012.⁷

On average, each resident in unincorporated County areas disposes of 3.8 pounds of waste per day (1998). In comparison, each resident in the City of Big Bear Lake disposes of 6.2 pounds of waste per day, on average.

The California Integrated Waste Management Act, Assembly Bill 939 (AB 939), required jurisdictions to divert 50 percent of the wastestream away from land disposal by the year 2000. If the 50 percent goal were not met by the end of year 2000, the jurisdiction would be required to submit a petition for a goal extension to the Integrated Waste Management Board (IWMB). The San Bernardino County (unincorporated) IWMB-diversion rate in the 1999 reporting year was 38 percent (pending IWMB approval). The County's (unincorporated) diversion rate in the 2000 reporting year was 43 percent (pending IWMB approval). The City of Big Bear Lake diversion rate in the 2000 reporting year was 59 percent (pending IWMB approval).⁸

Currently, the County is in the process of revising and updating the Countywide Integrated Waste Management Plan for the County of San Bernardino. The intent of this Plan is to establish goals and policies for the County regarding source reduction, recycling and composting, and environmentally safe solid waste management alternatives to land disposal. The revised Plan would also help the County in striving towards meeting the diversion rate requirements specified by AB 939.

The California Integrated Waste Management Board is still focused on assisting local officials throughout the State in meeting the 50 percent diversion requirement set for 2000. As of May 2003, neither the California Integrated Waste Management Board nor the State Legislature have introduced new legislation to set diversion requirements beyond 2000.

NATURAL GAS

The Project site is located entirely within the Southwest Gas Corporation (SGC) utility service territory. Currently, a natural gas "main" pipeline is installed in the right-of-way of State Route 38. Since the site is vacant, no natural gas services are currently provided to the project site.

⁷ Source: Integrated Waste Management Board website. Solid Waste Information System (SWIS), Facility/Site Summary Details for the Barstow Refuse Disposal Site. July 22, 2002. www.ciwmb.ca.gov/SWIS/

⁸ Source: Integrated Waste Management Board website. Jurisdictional Diversion Rate Summary for San Bernardino – Unincorporated and Big Bear Lake. July 22, 2002. www.ciwmb.ca.gov/profiles/

ELECTRICITY

The Project site is located within the service territory of Bear Valley Electric Service (BVES). An overhead power line traverses the Project site in an east/west direction. The line is located adjacent to and along the existing State Route 38 roadway alignment. The existing line is 4160/2400 volts, and has #2 copper as its conductor. The distribution line is fed by a substation located west of Stanfield Cutoff, which in turn is fed by a 34Kv transmission line, whose source is the Goldhill Switching Center located off of State Route 18 and Holcomb Valley Road, approximately six miles east of the project site. The transmission line has a section of #2 copper that limits its capacity. Winter loads have reached the maximum capacity on this line. Substantial load additions may cause a need for facilities to be upgraded.

IMPACTS

SIGNIFICANCE CRITERIA

Pursuant to Appendix G, Environmental Checklist of the California Environmental Quality Act (CEQA) Guidelines, a Project would normally have a significant adverse impact on public services and utilities if it results in any of the following:

PUBLIC SERVICES

- If the Project would 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 public services. (refer to Impact Statements 5.3-1, 5.3-2, 5.3-3, and 5.3-4).

UTILITIES AND SERVICE SYSTEMS

- If the Project exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board (refer to Impact Statement 5.3-5);
- If the Project requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (refer to Impact Statements 5.3-5 and 5.3-6);
- If the Project requires or results in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (refer to Section 5.8, *Hydrology and Drainage*);
- If the Project has insufficient water supplies available to serve the Project from existing entitlements and resources, or if new or expanded entitlements are needed (refer to Impact Statements 5.3-6 and 5.11-2);

- If the Project results 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 (refer to Impact Statement 5.3-5);
- If the Project is served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs (refer to Impact Statement 5.3-7); and/or
- If the Project does not comply with federal, state, and local statutes and regulations related to solid waste (refer to Impact Statement 5.3-7).

Impacts to services and utilities are analyzed below according to topic. Mitigation measures at the end of this section directly correspond with the identified impact.

FIRE PROTECTION

- 5.3-1 *Project implementation could result in significant physical impacts with respect to fire protection. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures.*

Project implementation would increase development beyond existing conditions, thus increasing the demand for fire protection in the form of additional calls for service. The Project site is located in a high fire hazard area and Fire Hazard Overlay District. Accordingly, Project development would be subject to compliance with various policies and standards for adequate services and facilities, including developmental regulation requirements for minimum road widths and clearance around structures. Additionally, the Project would be required to meet the Peakload Water Supply System Guidelines (Figure II-5 of the General Plan, *Peakload Water Supply System Guidelines*) or be adequately served by water supplies for domestic use and community fire protection in accordance with standards as determined by the County and the local fire protection agency/authority.

The San Bernardino County Fire Department has indicated that ~~the manpower demand as a result of the proposed project would need to be mitigated through increased fire flow due to the size and scale of the proposed project, specific fire flow requirements would need to be met.~~ Instead of 1,500 gpm at 2 hours (which is based on a maximum square foot house of 3,600 square feet), the fire flow requirement would be 1,750 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, based on homes greater than 4,800 square feet. ~~Fire sprinklers would be required for each residence in lieu of additional manpower.~~ Homes above 5,000 square feet would have a larger sprinkler requirement.

A fuel modification ~~area and plan~~ program would be required ~~which would not terminate at a property line for the proposed project under the provisions of the FS1 Fire Safety Overlay District.~~ The 100 foot fuel modification requirement would extend beyond the property lines. ~~Where such fuel modification zone extends on to U.S. Forest Service land, an easement or permit would be required. The 100 foot fuel modification zone may be greater in steeper areas (up to 300 feet), as determined by~~

the fire agency. Per the requirements of the FS1 Overlay District, the project would require a 30-foot setback from the National Forest. The project proposes 100-foot fuel modification zone adjacent to National Forest land, located to the north and east of the project area. As shown in Exhibit 3-4, Site Plan, the fuel modification zone would be located within the project boundaries on Lots 15 to 16 and 20 to 29. A Fuels Management Plan would be established for the project to implement the fire safety requirements of the FS1 Overlay District. The Fuels Management Plan would be subject to review and approval by the San Bernardino National Forest Service and the San Bernardino County Fire Department.

The fire flow requirements and fuel modification Fuel Management Plan requirements along with additional mitigation measures listed would reduce impacts to fire protection services to a less than significant level.

POLICE PROTECTION

5.3-2 *Project implementation could result in significant physical impacts with respect to police protection. Analysis has concluded that a less than significant impact would occur.*

Implementation of the proposed Project would increase the police service calls to the vicinity beyond existing conditions. This would be a direct result of the development of single-family residences and the resultant increase in population. At full build out of the 92 residential lots, the project has the potential to increase the Fawnskin population by approximately by 212 persons (92 housing units x 2.31 persons/household) (refer to Section 6.3, *Growth Inducing Impacts*). The peak period population would increase from 1,428 persons to approximately 1,642 persons, or a 15 percent population increase. According to the San Bernardino Sheriff's Department, the Project may result in an increase in burglar alarm calls, general criminal investigations, missing or lost persons, emergency medical calls, thefts of boats and vandalism.⁹ 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.¹⁰ The Projects increase in demand for police services would be offset through Project related fees and taxes. Thus, impacts are anticipated to be less than significant in this regard. No mitigation measures are recommended.

SCHOOLS

5.3-3 *Project implementation could result in significant physical impacts to existing school facilities. Potential impacts to school facilities are concluded as less than significant following payment of school impact fees and compliance with all applicable requirements, codes, and ordinances.*

⁹ Source: Written correspondence from Bobby R. Phillips (Captain) at the County of San Bernardino Sheriff's Department. Letter dated June 18, 2002.

¹⁰ Source: Telephone conversation with Bobby R. Phillips (Captain) at the County of San Bernardino County Sheriff's Department. August 12, 2002.

Development of the proposed Project could generate a student population increase of approximately 20 students (.21 students per unit x 92 units) within the BVUSD. Three existing schools would serve the proposed Project, one elementary school, one middle school, and one high school. As noted in Table 5.3-1, *Bear Valley Unified School District Facilities*, these schools are presently over capacity. The District has augmented existing school facilities with portable classrooms to accommodate the over-crowded conditions. Based on correspondence with the BVUSD, the District anticipates that the Project may result in the need for additional facilities, and may require modifications to schools of attendance.

Currently, the District collects Developer's Fees for new construction. The current residential rate is \$0.82 per square foot. The Developer's fees are 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. BVUSD is currently in year four of a modest enrollment decline. Currently, the District seeks modest enrollment growth and the proposed Project would contribute to modest enrollment growth.¹¹ Thus, payment of Developer Fees in accordance with the latest Developer Justification Study would reduce impacts to less than significant levels.

LIBRARIES

5.3-4 *Project implementation would increase the demand on library services. Analysis has concluded that that a less than significant impact would occur.*

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.

Service needs of the library are determined by per capita for facility square footage, number of items in collection and program requirements. A standards reference book, *Minimum Standards for Public Library Systems*, is used as a base for determining per capita recommendations. The nationally accepted standard of 0.5 square feet per capita has been tempered in recent years due to the advances in electronic publishing and on-line catalogs which allow patrons to identify and retrieve materials from neighboring branches. These factors have allowed libraries to reduce the amount of book stack space needed to house library collections. However, they have not mitigated the spatial needs for other library functions, such as study tables, patron lounge areas, circulation services, children's sections, meeting space and program areas. The Division of Library Development Services of the State of California, which holds the responsibility for library facility planning and financing, would not recommend anything less than the current state average of 0.35 square feet per capita and would prefer the accepted standard of 0.5 square feet per capita.

¹¹ Source: E-mail correspondence from John Niederkorn (Director of Business) at the Bear Valley Unified School District. November 26, 2002.

Funding to improve and/or increase library facilities and resources would occur by two methods. One source of revenue would be based on a resolution established by the San Bernardino County Board of Supervisors that provides a tax rate of one and on-half cents per \$100 of assessed valuation of property in the community. Second, libraries would 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.

WASTEWATER

5.3-5 *Project implementation would generate additional wastewater beyond current conditions. Analysis has concluded that impacts would be less than significant with the recommended mitigation measures.*

The quantity of wastewater that is attributable to the Project site would increase with implementation of the proposed Project. A Sewer Feasibility Study was completed for the Project site by So & Associates Engineers, Inc. According to the Study, the sewer capacity requirement for the proposed Project is determined based on equivalent dwelling units (EDUs). For the Study, each subdivided lot was considered as one EDU and average wastewater flow per EDU in the CSA 53B was typically estimated at 215 gallons per day (gpd). Thus, with the Project's assigned maximum occupancy of 92 EDUs and an average flow at 215 gpd/EDU, the Project's average daily wastewater flow would be 19,780 gpd. This would represent an increase of approximately 25 percent over CSA 53B's current average daily dry weather flow of 80,000 gpd. According to the So Engineer's report for preliminary design purposes, a peaking factor of four was utilized. Thus, the estimated peak wastewater flow immediately downstream of the proposed development is anticipated to be 79,120 gpd (54.9 gallons per minute).

The BBARWA anticipates that the existing sewer system located to the east of the Project site is capable of handling the wastewater flow for the proposed development based on estimated flows, discussed above. The BBARWA has indicated that a computer model for capacity analysis of the North Shore Interceptor System would verify the capacity starting July 1, 2002.¹² To date, an internal collection sewer system design has not been proposed by the Project. Thus, the Project Applicant would be required to submit the proposed internal collection system to CSA-53B for review and approval. The Applicant would also be required to pay all applicable CSA 53-B and BBARWA collection fees, including on-site collector sewer and lift station(s) fees, off-site sewer extensions fees, local sewer connection fees, and regional collection fees, as determined by the San Bernardino County Special Districts. Further, standby fees may be required for unimproved parcels within 200 feet of the available sewer system.

On-Site Facilities. The proposed development would be entirely responsible for all costs of internal collection sewer facilities including manholes and connection to the CSA 53-B system at locations(s) approved by CSA 53-B. All on-site gravity systems would be required to be a minimum eight inches in diameter. All on-site plans would

¹² Source: Written correspondence from Jerry Rang (Plant Superintendent) at the Big Bear Area Regional Wastewater Agency. June 18, 2002.

be required to meet CSA 53-B design standards and specifications, and construction plans would be submitted for plan check and approval to the Special Districts Department's engineer.

Off-Site Facilities. A grading plan and sewer layout plan of the proposed development were not available for the Sewer Feasibility Study. The proposed development may be able to convey some of the wastewater flow via gravity sewer to the existing Pump Station; and some of the subdivided lots may require additional on-site sewage lift-station(s). CSA 53-B staff and engineer would continue to monitor and upgrade the collection sewer system to ensure adequate capacity and reliable service to its customers.

If the project should involve an on-site wastewater treatment plant, rather than connecting to the public sewer system, the project would be subject to not only BBARWA's regulations, but also the Joint Powers Agreement and Operating Agreements with BBARWA's three member agencies (Collecting Agencies): the City of Big Bear Lake, the Big Bear Community Services District and the County of San Bernardino on behalf of County Service Area 53-B. Operating Agreement #1, Section 3.05, Other Treatment Plant Works, puts restrictions on the construction and operation of wastewater treatment works by the Collecting Agencies within Big Bear Valley. The section reads:

"...none of the Collecting Agencies shall construct, install, acquire, or operate any plant, enterprise, works or facilities, of any nature whatsoever for the treatment or disposal of any sewage or wastewater from any area whether within or without its service area, without the consent of BBARWA; nor shall any of the Collecting Agencies contract with any other agency other than BBARWA for such treatment or disposal. During the term of this agreement all sewage and wastewater collected by the sewage collection system of each of the Collecting Agencies shall be transported and delivered to the regional System for treatment and disposal therein."

In summary and as stated in the Sewer Feasibility Report, the existing BBARWA sewer system located to the east of the project site would be capable of handling wastewater flow from the proposed Project. Thus, the proposed Project would not result in the need to construct new wastewater facilities or require the expansion of new wastewater facilities. The proposed Project would be required to comply with applicable BBARWA (and Collecting Agencies, if required) rules and regulations pertaining to construction and operation of facilities, in addition to required payment of all new and modified facility fees. To ensure that impacts remain at less than significant levels, mitigation measures are recommended. Mitigation for the Project includes installation/replacement of force main(s) to maintain adequate service performance standards and installation of air release valves and vaults at high elevation points on new force mains to minimize odors.

WATER

5.3-6 *Project implementation would increase the demand for water beyond existing conditions. Analysis has concluded that due to the inability of water providers to confirm service to the project, impacts are concluded as significant and adverse. This conclusion is further supported by the*

potentially significant groundwater overdraft conditions cited in Section 5.11 of the EIR.

As noted in the Existing Conditions section, the Project site lies within the service boundaries of County Service Area 53, Improvement Zone C (CSA 53-C), which was created in 1991 to provide water service to unserved areas within CSA 53. Currently, water service is not provided to the project site. Even though the site is immediately adjacent to the water service jurisdiction of the Department of Water and Power (DWP), City of Big Bear Lake, DWP cannot provide water service without first complying with the provisions of Government Code Section 56133. Section 56133 requires formal review and approval by the Local Agency Formation Commission (LAFCO). However, the County Special Districts Department has the ability to establish a joint powers agreement with DWP to provide water service. Due to the proximity of DWP facilities and the ability to provide more cost-effective service by contracting with DWP, this service delivery arrangement appears to be the preferred method for providing water service to the Project. At this time, neither agency has committed to approving such an agreement. Based upon the inability for providers to confirm services, coupled with potentially significant overdraft conditions cited in Section 5.11 of the EIR, impacts are concluded to be significant and adverse.

County Service Area 53-C could provide water to the Project site under two possible scenarios. CSA 53-C could accept water supply facilities that would be constructed by the applicant and dedicated to the County for management and operation by Special Districts Department. However, the most likely scenario would be for the County Special Districts Department to establish a joint powers agreement with the City of Big Bear Lake Department of Water and Power (DWP) to provide water service. The Big Bear City Community Services District (BBCSD) is not an option as a service provider since it does not have jurisdiction west of Division Drive, which is located approximately four miles to the east of the project site.

The analysis that follows below is based on an evaluation of the project's water service requirements, the existing conditions of the DWP system in the community of Fawnskin, and consideration of the conditions that would apply should CSA 53-C contract with DWP for water supply. The water service requirements discussed below would also apply in the situation under which CSA 53-C would operate and maintain a water system that was constructed and dedicated to the County.

According to the Water Feasibility Study completed for the proposed Project, each residential lot is considered as one equivalent dwelling unit (EDU).¹³ The average day demand (ADD) and maximum day demand (MDD), based on the number of EDUs, was estimated to determine the impact on the existing water system.

Water Demand. The DWP has estimated the ADD for the Fawnskin area to be approximately ~~450-250~~ gallons per day per EDU (gpd/EDU). [Note to Reviewer: The updated calculation is based upon further analysis by SO & Associates Engineers, dated September 7, 2004.] The letter report has been incorporated in to the EIR Appendix.] The MDD considers water usage over an 8 to 10-hour period each day. The Project's ADD and MDD are as follows:

¹³ Source: Water Feasibility Study ~~Update~~ for Tentative Tract 16136, prepared by So & Associates Engineers, Inc. ~~March 13, 2002~~ September 7, 2004.

$$\begin{aligned}
 \text{Average daily demand (ADD)} &= \underline{92 \text{ EDU} \times 250 \text{ gpd/EDU}} \\
 &= \underline{25.77 \text{ AF/year}}
 \end{aligned}$$

$$\begin{aligned}
 \text{Maximum day demand (MDD)} &= \underline{2.5 \times \text{ADD} / 1,440 \text{ minutes per day}} \\
 &= \underline{57,500 \text{ gpd (about 40 gpm)}}
 \end{aligned}$$

Assuming the ADD calculated above, the project would require approximately 25.77 acre-feet of water per year to supply the proposed residential uses.

Fire Flow Requirements. The existing water distribution system was originally designed for approximately 750-gpm fire flow for two hours. The current requirement per the County Fire Department for the Fawnskin area is between 1,000 gpm and 1,500 gpm depending on the building square footage. The fire flow may be further increased in the future. As such, the water distribution system was analyzed to handle the maximum day demand of the proposed development plus fire flow up to 1,500 gpm.

Water Supply and Storage Requirements. The State Health Department requires storage to account for one peak day usage. The DWP typically experiences one peak day during a summer holiday when tourists and part-time residents become full-time users. The coefficient of 450-250 gpd/EDU and corresponding MDD is representative of that day and is the basis for calculating the water demand and storage requirement for the proposed Project as presented in prior discussions and outlined below:

Domestic Water Supply requirement (max day) = 40.0 gallons per minute

$$\begin{aligned}
 \text{Operational Storage} &= (0.3 \times \text{MDD}) = \underline{17,250 \text{ gallons}} \\
 \text{Emergency Storage} &= (1.0 \times \text{MDD}) = \underline{57,500 \text{ gallons}} \\
 \text{Subtotal (without fire storage)} &= \underline{74,750 \text{ gallons}}
 \end{aligned}$$

$$\begin{aligned}
 \text{Fire Storage (1,500 gpm} \times \text{2 hours)} &= \underline{180,000 \text{ gallons}} \\
 \text{Total Storage Requirement} &= \underline{255,000 \text{ gallons}}
 \end{aligned}$$

Based on proposed development requirements (at MDD), two new wells would be required the project would need to have a water supply that could provide a minimum of 72-0-40 gallons per minute. As discussed below and in Section 5.11, Hydrology and Drainage, two existing on-site wells could potentially supply a portion of the water demand to the project. The project site is located within tributary subarea A of the North Shore Hydrologic Subunit. The groundwater recharge for subarea A is estimated to be approximately 29 acre-feet per year. Since the project would require approximately 46 acre-feet per year, it is concluded that on-site wells alone could not supply the necessary water resources to support the proposed residential uses. If the on-site wells were utilized to supply a portion of the water supply to the project, the Project Applicant would be required to deposit funds with the DWP and/or BBCSD to equip the wells to meet the appropriate water agency's standards for new well construction unless a proven source of supply is provided by the developer at locations satisfactory to DWP and not exceeding sub-basin safe yields. As stated in Section 5.11, Hydrology and Drainage, the testing of overdraft conditions for the groundwater basin associated with the North Shore Hydrologic Subunit is inconclusive has the potential to be in an overdraft situation, thus, it has been concluded that impacts to groundwater resources are significant and

unavoidable. Therefore, additional studies and analysis will need to be provided by the Project Applicant to indicate a proven source of water supply for the project.

Potential Water Supply Wells FP-2 and FP-3. As stated above, the project site includes two existing on-site water wells located within the North Shore Hydrologic Subunit that could potentially supply water to the project. The two wells referenced may have potential to meet the Moon Camp area demand requirements. The wells, which were drilled in 1987, are located on the Moon Camp property and are not currently in operation. The most recent data available regarding the wells was collected in 1987 and is summarized in Table 5.3-2, Summary of Data on Wells FP-2 and FP-3.

**Table 5.3-2
Summary of Data on Wells FP-2 and FP-3 (Year 1987)**

State Well No.	Well Name	Date Drilled	Completed Depth (ft)	Screened Interval ¹ (ft-ft)	Static Water Level (ft)	Date	Instantaneous Discharge Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft)
2N/1W-1383	FP-2	1987	405	60-370	6	1987	100	20	3
2N/1W-1302	FP-3	1987	304	66-238	45	1987	75	22	3

Sources of Data: California State DWR, Boyle Engineering Corp. (1987), Law Environmental (1987).

¹ The screened interval is not continuous – values summarized represent top and bottom of well screen.

Although the yields indicate that the wells show adequate potential to supply water to the project, the North Shore Hydrologic Subunit has been identified to likely be in a state of overdraft and more specifically, subarea A is estimated to have a recharge rate of approximately 29-acre feet per year, which is not enough to meet the 46 acre-feet per demand of the proposed project. Although overdraft conditions have been noted for the groundwater basin, the yield of the wells (as tested in 1987), show adequate water supply potential. However, prior to use, video logs should be run on each well to examine the condition of the casing and screen. Based on review of the video logs, it can be determined if any modifications are necessary prior to use. Following the video inspection (and redevelopment if necessary), updated values of production rates and pumping levels should be obtained through step-drawdown and constant rate pumping tests. Water samples should also be taken during testing and analyzed in accordance with standard requirements for a potable water supply.

Water Distribution System Review. Based on its location and computer simulations, the proposed Project would receive water from the Cline Miller Reservoir. Exhibit 5.3-1, *Water Distribution System*, shows the existing distribution piping system in the vicinity of the Project site and the recommended extension pipeline layout. Referencing the hydraulic grade line of 6,957 feet elevation at Cline Miller Reservoir and the approximate ground elevation at the Project site from 6,780 to 6,800 feet, the minimum static pressure at the proposed parcel is approximately 68 psi.

Thus, under maximum day demands plus residential fire flow up to 1,500 gpm, the minimum residual pressure of 20 psi can be met, based on the existing hydraulic

pipeline model. However, the existing Cline Miller Reservoir is an old 100,000 gallon concrete reservoir which would not be sufficient to serve the proposed Project. The existing site has limited space for a new tank without demolishing the old tank and/or securing additional property. Therefore, the Water Feasibility Report recommends that the old concrete reservoir be replaced with a new 300,000 to 400,000 gallon storage reservoir. The Project Applicant would be required to advance fair share funds towards construction of the new reservoir and a 12-inch transmission pipeline. If other parcels of land can be benefited by the off-site improvements based on review by DWP's engineer, a "reimbursement agreement" would be considered by DWP. The developer would also be required to submit landscaping plans for review to the DWP. Landscape designs utilizing low water usage would be encouraged to achieve water conservation, which in turn may lower water supply demand.

All water plans (on-site) would be required to be submitted for review/approval by DWP to confirm that water mains do not conflict with the BBARWA 10-inch sewer force main (which would be relocated at developer's cost).

Since the proposed Project would result in the need to construct new water facilities and/or require the expansion of new wastewater facilities and the DWP's existing facilities do not have adequate capacity to serve the project's demand, impacts are considered potentially significant. With implementation of the recommended mitigation measures and compliance with all applicable regulations and payment of fees, impacts to the water distribution system would be reduced to less than significant levels.

**Compliance with Senate Bill 221 and Senate Bill 610:
Adequacy of Water Supply**

As stated in the *Existing Conditions* section, adequacy of water supplies for the proposed Project must be determined per the requirements of Senate Bills 221 and 610. SB 610 requires that a detailed report regarding water availability and planning for additional water supplies if the project is a proposed residential development of more than 500 dwelling units. The proposed Project consists of 92 residential lots, thus, the requirements of SB 610 do not apply to the Project. SB 221 applies to any "subdivision," defined as:

- A proposed residential development of more than 500 dwelling units, if the Public Water Supplier (PWS) has more than 5,000 service connections.
- Any proposed development that increases connections by 10% or more, if the PWS has fewer than 5,000 connections. Water Code 10912(7)(C) states that a "public water system" is defined as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.

Based on the "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" the following excerpt shows that 300 dwelling units are necessary to qualify as a "subdivision," and therefore be subject to SB 221.

“Code 66473.7(a) provides that a “subdivision” for a public water system with fewer than 5,000 service connections is a proposed development that would increase the number of service connection for a public water system by 10 percent or more, a “subdivision” could be as few as 300 dwelling units. For example, a water utility that has 3,000 service connections would experience an increase in the number of service connections by 10 percent if it were required to serve a proposed residential development with 300 units, thus making the 300-unit development a “subdivision” under 221.”

As stated above, Water Code 10912(7)(C) states that a “public water system” is defined as a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. Therefore, if Fawnskin has only 673 connections it does not qualify as a “public water system,” but rather a piece of a larger “overall system.” Whether the project is under the jurisdiction of the DWP or the County Special Districts Department, each of these agencies “overall system” has more than 3,000 connections qualifying them as public water systems. Thus, the proposed 92 dwelling units would not exceed 10 percent of the 3,000 connections or 300 dwelling unit minimum dwelling unit threshold to be subject to SB 221 reporting requirements.

SOLID WASTE

5.3-7 *Development of the Project area would result in increased solid waste generation. Project compliance with the Integrated Waste Management Plan for the County of San Bernardino (currently being revised) 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.*

As stated in the *Existing Conditions* section, residents in the City of Big Bear Lake dispose of an average of 6.2 pounds of waste per day. The City of Big Bear Lake diversion rate in the 2000 reporting year was 59 percent (pending IWMB approval).¹⁴ Based on the City of Big Bear Lake generation factors and a maximum occupancy scenario of 92 dwelling units, the proposed Project would generate an estimated 240 tons of solid waste per year or 0.6 tons of solid waste per day (2.31 persons/household x 6.2 pounds/day x 92 dwelling units x 365 days/year). This projected increase in solid waste generation would increase the demand to provide disposal service and would impact the capacity at the Barstow Landfill. Further, this increased solid waste generation would incrementally shorten the lifespan of the Landfill. Under existing State permits, the landfill has sufficient capacity to accommodate the disposal of solid waste at least to the year 2012.

It is anticipated that the Project’s estimated volume of solid waste generation would be reduced through the storage and collection of recyclables. Although there are currently no curbside recycling programs in the project area, the County Solid Waste Management Division encourages waste reduction, recycling and reuse activities. The Division encourages the development of community drop-off station(s) in the

¹⁴ Source: Integrated Waste Management Board website. Jurisdictional Diversion Rate Summary for San Bernardino-Unincorporated and Big Bear Lake. July 22, 2002. www.ciwmb.ca.gov/profiles/

Fawnskin area.¹⁵ The Division's recycling efforts include providing residents and businesses with information regarding backyard composting, commercial green waste management, grasscycling, and waste prevention. Furthermore, the Division operates a Speakers Bureau that speaks to various groups on aspects of waste management. Additional solid waste recycling efforts in the County include sorting waste materials (e.g. cardboard and aluminum) at the Big Bear Transfer Station into mixed recycling bins and development of the Zero Waste Communities program. The Zero Waste Communities are 15 cities/towns that have partnered with the County of San Bernardino to educate their residents and businesses on ways of zero waste living.¹⁶ One aspect of the Zero Waste Communities program is to provide residents with a directory of listings, including the name and phone number, to places that will accept various entities of solid waste (i.e., appliances, tires, televisions, etc.).

Additionally, it should be noted that the volume of the Project's solid waste, which would be disposed of at Barstow Landfill, would be further reduced due to the requirements of AB 939. Therefore, implementation of the proposed Project would result in a less than significant impact with respect to solid waste.

NATURAL GAS

5.3-8 *Project implementation would result in an increased demand for natural gas service beyond existing conditions and would require expansion of the existing gas system. Analysis has concluded that a less than significant impact would occur in this regard.*

The Southwest Gas Corporation has indicated that natural gas "main" pipelines are installed in the right-of-way of State Route 38. The Southwest Gas Corporation has conclude 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 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.

ELECTRICITY

5.3-9 *Project implementation would result in an increased demand for electrical service beyond existing conditions and would require expansion of the existing electrical system. Analysis has concluded that impacts would be less than significant.*

¹⁵ Source: Phone conversation with Rex Richardson at the San Bernardino County Solid Waste Management Division. December 3, 2002.

¹⁶ Source: Zero Waste Communities website. www.zerowastecommunities.org

An increased demand for electrical service would occur at the Project site as a result of the proposed development. Other tracts with large lots, similar to the Project, have diversified loading demand estimates ranging from 4 to 5 Kw per lot (i.e., average instantaneous draw from electrical service system). Thus, 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.¹⁷ Since the source transmission line to the Project area has reached its peak, any large load addition may be difficult to serve. BVES states that several alternatives would be evaluated to relieve the load on the transmission line. One alternative would be to shift load to another transmission line, however, other lines are also operating near capacity. Another alternative would be to investigate a distributed generation option. Distributed generation involves placing a power source (i.e., reciprocating engine that uses natural gas to power generator) on the site that would generate power on an as needed basis, such as during peak load times (i.e., winter, holiday weekends, etc). The distributed generator would be owned by the Project Applicant and/or BVES, depending on future agreements between the Applicant and BVES.

According to BVES, the total length of the distribution line extending through the Project area would likely need to be relocated. From Stanfield Cutoff, the existing distribution feeder proceeds westerly for 2.6 miles underground, then traverses overhead. The current overhead line would need to be reconstructed as an underground line along the proposed realigned State Route 38 right-of-way. Undergrounding through the proposed tract would leave a short section of exiting line overhead. This overhead section would need to be investigated to determine if it would also need to be placed underground. The determination of whether this overhead section would be placed underground would be dependent upon the technical electrical transmission capabilities of the line to be determined by BVES, and compliance with Caltrans and County of San Bernardino regulations pertaining to electrical facilities along State Routes.

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 for 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 BVEC 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.

Based on the above discussion, 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 BVEC customers, while adding new load to the system. Payment of BVES fees/costs would mitigate all potential impacts less than significant levels in this regard.

¹⁷ Source: Written correspondence from Marc Abraham, Engineering Supervisor, at Bear Valley Electric Service. July 2, 2002.

CUMULATIVE

- 5.3-10 *Cumulative development could result in an increased demand for public services and an increase in the consumption rates for public utilities, potentially requiring expansions of the existing utility systems. The inability of water providers to confirm service on a project level would also result in significant and unavoidable cumulative impacts. Analysis has concluded that cumulative development for the remaining service and utility affects are subject to standards and requirements of reviewing agencies and no additional mitigation is recommended.*

In relation to the cumulative development outlined in Section 4.0, *Basis for Cumulative Analysis*, the proposed Project would cumulatively contribute to an increased demand for fire, police, schools, libraries, water, sewer, solid waste, and energy utilities. The proposed Project and related projects would add to the cumulative demand for such services through the introduction of new residents, tenants, and users of the proposed facilities. The site is located in an area that is served by utilities and other public services. With the exception of water services, existing facilities can be readily extended into the area to serve the proposed development. Water providers have not been able to confirm service to the project, thus, it is concluded that cumulative impacts would also be significant and unavoidable for water service.

No additional governmental services or activities would be cumulatively impacted by the proposed Project. With the exception of water service, since the respective providers of services and facilities have indicated that the Project's incremental impacts can be sufficiently mitigated, cumulative impacts on public services and utilities, other than water services, that are anticipated to result from this development are not considered to be significant.

MITIGATION MEASURES

This section directly corresponds to the identified Impact Statements in the impacts subsection.

FIRE PROTECTION

- 5.3-1a 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.
- 5.3-1b ~~Fire sprinklers for each residence shall be provided in lieu of additional manpower. 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 have a larger sprinkler requirement (FPA13R).~~
- 5.3-1c A ~~Fuels modification program~~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 30-foot minimum setback requirement from the National Forest. The fuel modification zone shall be located entirely within the project's boundaries. The 100-foot fuel modification requirement shall not terminate at a property line. The 100-foot fuel modification requirement shall extend beyond property lines. Where such fuel modification zone extends onto U.S. Forest Service land, an easement or permit shall be required to be obtained. The minimum 100-foot fuel modification zone requirements may be greater in steeper areas (up to 300 ft.), as determined by the Fire Agency Department.

- 5.3-1d Cul-de-sac lengths shall be no longer than 350 feet.
- 5.3-1e A Homeowner's Association or a Special District shall be established to ~~assure~~ 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. ~~Long-term vegetation maintenance. An annual vegetation maintenance program shall be included. The HOA or Special District is to be responsible for fuel modification in common areas.~~
- 5.3-1f ~~Fire resistance/drought tolerant landscaping shall be required and referenced in the Homeowner's Association or Special District Standards.~~

POLICE PROTECTION

- 5.3-2 No mitigation measures are recommended.

SCHOOLS

- 5.3-3 No mitigation measures are recommended.

LIBRARIES

- 5.3-4 No mitigation measures are recommended.

WASTEWATER

- 5.3-5a Prior to issuance of building permits, the Project 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 BBARWA, and may include replacement of existing sewer lines rather than construction of parallel lines.
- 5.3-5b Prior to issuance of building permits, the Project 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.

5.3-5c The Project Applicant shall relocate the BBARWA 10" force main by installing new pipe (and/or bonding for the relocation) so that it is aligned within the south shoulder of the relocated State Route 38. The 10" force main shall be accessible for BBARWA to maintain and repair the sewer force main. The force main shall not pass through residential lots within the proposed tract.

5.3-5d The Project 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.

WATER

5.3-6a ~~Prior to approval of building permits, a video inspection of water supply casings and screen shall be conducted in order to update~~ Values of production rates and pumping levels for on-site water supply wells shall be obtained through step-drawdown and constant rate pumping tests. Water samples shall be taken during the inspection for testing and analysis in accordance with standard requirements.

5.3-6b If either or both of the two existing on-site wells are utilized as a water source for the project, ~~The Project Applicant shall equip the two existing on-site wells to meet DWP and/or County Special Districts Department standards and dedicate these facilities and water rights to the appropriate water purveyor~~ County of San Bernardino. Within the proposed tract, no individual private irrigation wells shall be permitted.

5.3-6c ~~If served by CSA 53-C through a contract with the City of Big Bear Lake Department of Water and Power, t~~ After a determination has been made regarding the water purveyor, the Project Applicant shall advance fair-share funds ~~or enter into a reimbursement agreement with the~~ to the appropriate water agency (CSA and/or DWP) ~~(if required)~~ towards constructing a new reservoir and pipeline improvement at Cline-Miller Reservoir (with an estimated project cost at \$481,100). These facilities would be dedicated to the appropriate water agency.

5.3-6d The following water conservation measures are the minimum measures that shall be complied with in conjunction with domestic water supply to the project. A Homeowners Association shall be responsible for enforcing the water conservation measures. Additional measures may be imposed as a result of a contract for water supply between CSA 53-C and the City of Big Bear Lake DWP:

- 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 every other day.

- Landscape irrigation shall be limited to what is needed and shall not be excessive. Water from landscape irrigation shall not be allowed to run off into streets.
- Water shall not be allowed to leak from any waterline, faucet, or any other facility, either within or outside a private residence, business establishment or on private property. All such leaking waterlines, faucets, and other facilities shall be repaired immediately to prevent leakage.
- Sidewalks, paved driveways, and parkways shall not be washed off with hoses, except as required for sanitary purposes.
- Non-commercial washing of cars, and boats or any other vehicle shall only be done with an automatic shut-off nozzle on a hose, or with a bucket.
- New landscaping shall not exceed more than one-thousand square feet of turf on a parcel or lot or twenty-five percent of the available landscape area.
- A model landscaping and irrigation guide shall be prepared for the tract and required by homeowner association rules. The guide shall specify a plant palate that emphasizes native plants and cultivars that are suitable for the mountain climate. Plant materials shall be low water consuming and fire resistant. Irrigation shall emphasize drip and bubbler type emitters with limit aerial spray irrigation methods. The guide shall be reviewed and approved by the Land Use Services Department.

SOLID WASTE

5.3-7 No mitigation measures are recommended.

NATURAL GAS

5.3-8 No mitigation measures are recommended.

ELECTRICITY

5.3-9 No mitigation measures are recommended.

CUMULATIVE

5.3-10 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Due to the inability of water providers to confirm service to the project, project as well as cumulative impacts are concluded as significant and unavoidable. This

conclusion is 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.

If the County of San Bernardino approves the project, the County shall be required to adopt findings in accordance with Section 15091 of the CEQA Guidelines and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA Guidelines.

No additional unavoidable significant impacts related to public services and utilities have been identified following implementation of the recommended mitigation measures and compliance with applicable County, service or utility provider requirements, County Codes and Ordinances.

5.4 AESTHETICS/LIGHT AND GLARE

Visual resources information for this Section was compiled from site photographs and site surveys conducted by RBF Consulting in February 2002. This analysis is based upon reference data from the County of San Bernardino and the Project Applicant. The purpose of this Section is to describe the existing aesthetic environment on-site and in the site vicinity and analyze potential project impacts to the aesthetic character of the site. Consideration of public scenic vistas and views, impacts to scenic resources and the introduction of new sources of light and glare are also included in this Section. Visual simulations are provided to assist in the analysis. Mitigation measures are recommended to reduce the significance of impacts.

EXISTING CONDITIONS

VISUAL SETTING/CHARACTER

ON-SITE

The Moon Camp project site is adjacent to the north shore of Big Bear Lake in the relatively undeveloped eastern portion of the Community of Fawnskin. Generally, the site slopes from the south (lakefront) to the north (north of State Route 38/North Shore Drive). Elevations and slope degrees significantly increase from the central portions of the site to the northern boundary. Elevations range from 6,747 feet at the lakefront to a high of 6,960 feet at the northeast boundary. Total relief is 483 feet and slopes range from 5 percent to 40 percent.¹ The estimated 2,772 Jeffrey pine trees on-site provide a forested nature for the site. A variety of flora and fauna exist on-site, including Jeffrey pine forest, pebble plain habitat, birds, mammals, reptiles, amphibians, etc. (refer to Section 5.8, *Biological Resources*). On-site conditions include the State Route 38 right-of-way; two non-operational water wells; dirt roads and numerous footpaths/trails. No rock outcroppings occur within the project area. According to the San Bernardino County General Plan, the site is within a Scenic Resources (SR) Overlay District (see discussion which follows). Exhibits 5.4-1a and 5.4-1b, *Existing Conditions Photos*, contain photographs of typical site conditions.

As referenced in the San Bernardino County General Plan, the County designates the segment of State Route 38 that traverses the site as a "Scenic Highway."² Scenic highways are subject to additional land use and aesthetic controls under the County's Scenic Highway Overlay (refer to discussion under *Scenic Corridors* below). Additionally, the U.S. Forest Service designates State Route 38 as a "Scenic Byway." State Route 38 traverses the southern portion of the site in an east/west direction. Generally, the highway meanders through the site in a winding fashion and parallels the lakefront. The location of the highway allows travelers to have ample views of the lake in some areas (refer to Exhibit 5.4-1a, *Existing Conditions Photos*, View No. D). The meandering nature of the highway causes reduced vehicle speeds; thus, allowing vehicle passengers increased viewing time of

¹ Source: *Geologic Feasibility Report*, RGS Geosciences, May 3, 2001.

² Source: San Bernardino County General Plan, Section II, C, 5, Policy OR-58.

the lake. It is further noted that the narrow shoulder along the highway provides limited parking areas to view the lake.

Views to the north of State Route 38 consist primarily of dense collections of Jeffrey pine trees and associated vegetation interspersed with vacant areas of land. The view depicted in Exhibit 5.4-1a, *Existing Conditions Photos*, View No. A, from State Route 38, looking north, shows existing vegetation and slope of the mountainside. Southerly views from State Route 38 include the lakefront and long-range views to the mountains south of Big Bear Lake. The Bear Mountain and Snow Summit ski resorts are visible to the south of Big Bear Lake. Exhibits 5.4-1a and 5.4-1b, View No. E and View No. K, show views of the lakefront and long-range views to the distant mountains from State Route 38. The lakefront in the vicinity of the site consists primarily of vacant land and sporadic Jeffrey pine trees and associated vegetation.

Single-family residences located along Flicker Road (approximately 12 residences), Oriole Drive (approximately three residences) and State Route 38 (approximately 15 residences), adjacent to the north, east and west of the property, respectively, can be observed from the segment of State Route 38 that traverses the project site (refer to Views Nos. A, G, and J in Exhibits 5.4-1a and 5.4-1b). Exhibit 5.4-1a, View No. C, shows the view looking southerly from north of State Route 38. View No. B depicts a typical view of Jeffrey pine trees and associated vegetation on the project site.

OFF-SITE

As previously stated, existing single-family residences are located along Flicker Road, Oriole Lane and State Route 38, adjacent to the north, east and west of the site, respectively. Views of the site from residences along Oriole Lane and State Route 38 consist primarily of dense collections of Jeffrey pine trees interspersed with vacant areas of land. Exhibit 5.4-1a, View No. F, show views of the project site from Oriole Lane. Residences to the north of the site, along Flicker Road, are located at elevations higher than the site. Long-range views from Flicker Road across the site consist of Big Bear Lake and mountain ranges to the south of the lake. The long-range views are at times limited by the size and location of existing Jeffrey pine trees. Exhibit 5.4-1b, View Nos. H and I, show views along Flicker Road to the site. Views from Polique Canyon Road, adjacent to the northeast corner of the site, are similar to those of the residents located along Flicker Road. It is noted that there are no residences along this portion of Polique Canyon Road. Exhibit 5.4-1b, View No. L, shows the view from Polique Canyon Road to the site.

Views from Big Bear Lake toward the project site consist primarily of limited Jeffrey pine trees and vacant undeveloped land on the lakefront and dense collections of Jeffrey pine trees interspersed with vacant land on the gently sloping mountainside.



A From State Route 38, looking north. Existing vegetation and slope of mountainside.



B View of Jeffrey Pine trees and associated vegetation on the project site.



C Looking southerly from north of State Route 38 across the project site.



D View to the east along State Route 38.



E Looking south westerly from State Route 38 across the lake.



F Views of the project site from Oriole Lane located to the west of the project site.

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G Looking westerly from State Route 38 to residences west of the project site along Oricle Lane.



H Look southerly across the site from Flicker Road.



I Looking southerly across the project site from Flicker Road.



J Looking easterly from State Route 38 to residences east of the project site along State Route 38.



K Looking easterly from State Route 38 across the lakefront.



L Looking southwesterly from Polique Canyon Road across the project site.

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SCENIC CORRIDORS

As previously stated, the County of San Bernardino General Plan identifies the Moon Camp site within a Scenic Resources (SR) Overlay District and State Route 38 as a Scenic Highway. State Route 38 is also designated by the U.S. Forest Service 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.”³ The SR Overlay District also implements state and federal programs regarding scenic highway routes.

The provisions of the SR Overlay District apply to: (a) areas with unique views of the County’s desert, mountain and valley areas or any other aesthetic natural land formations; and/or (b) an area extending two-hundred (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 covered may vary to reflect the changing topography and vegetation along the right-of-way.

Per the provisions of the SR Overlay District, the following development standards/criteria are utilized to evaluate compliance with the intent of the SR Overlay District:

- Building and Structure Placement. The building and structure placement 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 parallel to and visible from the right-of-way.
- Access Drives. Right-of-way access drives should be minimized.
- Landscaping. The removal of native vegetation, especially timber, 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 mature growth.
- Roads, Pedestrian Walkways, Parking and Storage Areas. Any large scale development should restrict the number of access points by providing common access roads. 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, and, where practicable, are capable of surviving with a minimum of maintenance and supplemental water.

³ County of San Bernardino Development Code, Title 8, Division 5, Chapter 3, Article 6, Section 85.030601. Page 5-69. July 1, 1989.

- 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. Above ground 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 plantings 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 eighteen (18) square feet are prohibited in the SR Overlay District.

LIGHT AND GLARE

Due to the undeveloped nature of the project site, no light or glare is currently generated on the project site. Headlight glare from vehicles traveling along State Route 38 may be visible from the project site.

IMPACTS

SIGNIFICANCE CRITERIA

Appendix G, *Initial Study Checklist*, of the California Environmental Quality Act (CEQA) Guidelines includes checklist questions relating to aesthetics. A project would potentially create a significant aesthetic impact if it caused one or more of the following to occur:

- Have a substantial adverse effect on a scenic vista (refer to Impact Statements 5.4-2 and 5.4-3);
- Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway (refer to Impact Statement 5.4-3);
- Substantially degrade the existing visual character or quality of the site and its surroundings (refer to Impact Statement 5.4-1 to 5.4-4); and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (refer to Impact Statement 5.4-1 and 5.5-4).

The evaluation of aesthetic impacts can be termed a subjective exercise due to widely varying personal perceptions. Nevertheless, replacement of undeveloped land with residential uses and realignment of State Route 38 would permanently alter the appearance and character of the project area. Potential impacts are categorized below according to topic. Mitigation measures at the end of this Section directly correspond to the numbered impact statements below.

SHORT-TERM AESTHETIC/LIGHT AND GLARE IMPACTS

- 5.4-1 *Construction of the proposed project would temporarily alter the visual appearance of the site and introduce new short-term sources of light and glare. Analysis has concluded that impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures.*

The proposed project would involve grading for new roads, including the realignment of State Route 38, and installation of utilities. Construction of the realigned portion of State Route 38 would take approximately 4 to 6 months. Future residences would be constructed on the site on a lot-by-lot basis. Project construction activities would disrupt views across the site from surrounding areas. Graded surfaces, construction debris, construction equipment and heavy truck traffic would be visible. Soil would be stockpiled and equipment for grading activities would be staged at locations throughout the site. Construction impacts would be relatively short-term and would cease upon project completion. With the implementation of the recommended mitigation pertaining to location of staging areas and screening, short-term impacts would be reduced to less than significant levels. In addition, construction activities would be required to be consistent with the permitted hours of construction as set forth by the County of San Bernardino (refer to Section 5.7, *Noise*, with regard to permitted hours of construction).

Short-term light and glare impacts are associated with construction activity and would likely be limited to night-time lighting necessary for security purposes. Relative to potential short-term construction impacts, there are three areas adjacent to the site upon which the proposed project may pose night-time lighting impacts. The residences located along State Route 38, near the southern portion of the site, the residences located along Oriole Lane, and the residences along Flicker Road could be impacted by night-time and security construction lighting. This is considered a short-term impact and would require mitigation. Mitigation measures pertaining to construction-related lighting would reduce these short-term impacts to less than significant levels.

LONG-TERM AESTHETIC IMPACTS

- 5.4-2 *Implementation of the Moon Camp project would adversely impact scenic resources, scenic vistas and the visual character of the site and its surroundings. Analysis has concluded that a significant and unavoidable impact to the visual character and viewshed from the project site and surrounding areas would occur which cannot be mitigated to a less than significant level.*

With development of the proposed project, the viewshed and visual characteristics of the area would be permanently modified. Currently, the project site consists primarily of forest lands, State Route 38 (North Shore Drive), two non-operational water wells and numerous dirt roads and trails. The heart of the Fawnskin Community is located to the west of the project site, which consists primarily of a variety of custom-built residences. With the introduction of 92 residential lots, local streets and associated infrastructure, current viewshed characteristics would be modified and in some cases dominate the visual features of the project area. Distant views of the mountain ranges and Big Bear Lake to the south would be affected by the proposed use. The project would also involve the removal of approximately 655 or 24 percent of the existing Jeffrey pine trees for roadway construction. Additional tree removal may occur during individual lot development and construction of custom homes; the design of which is not part of the proposed project.

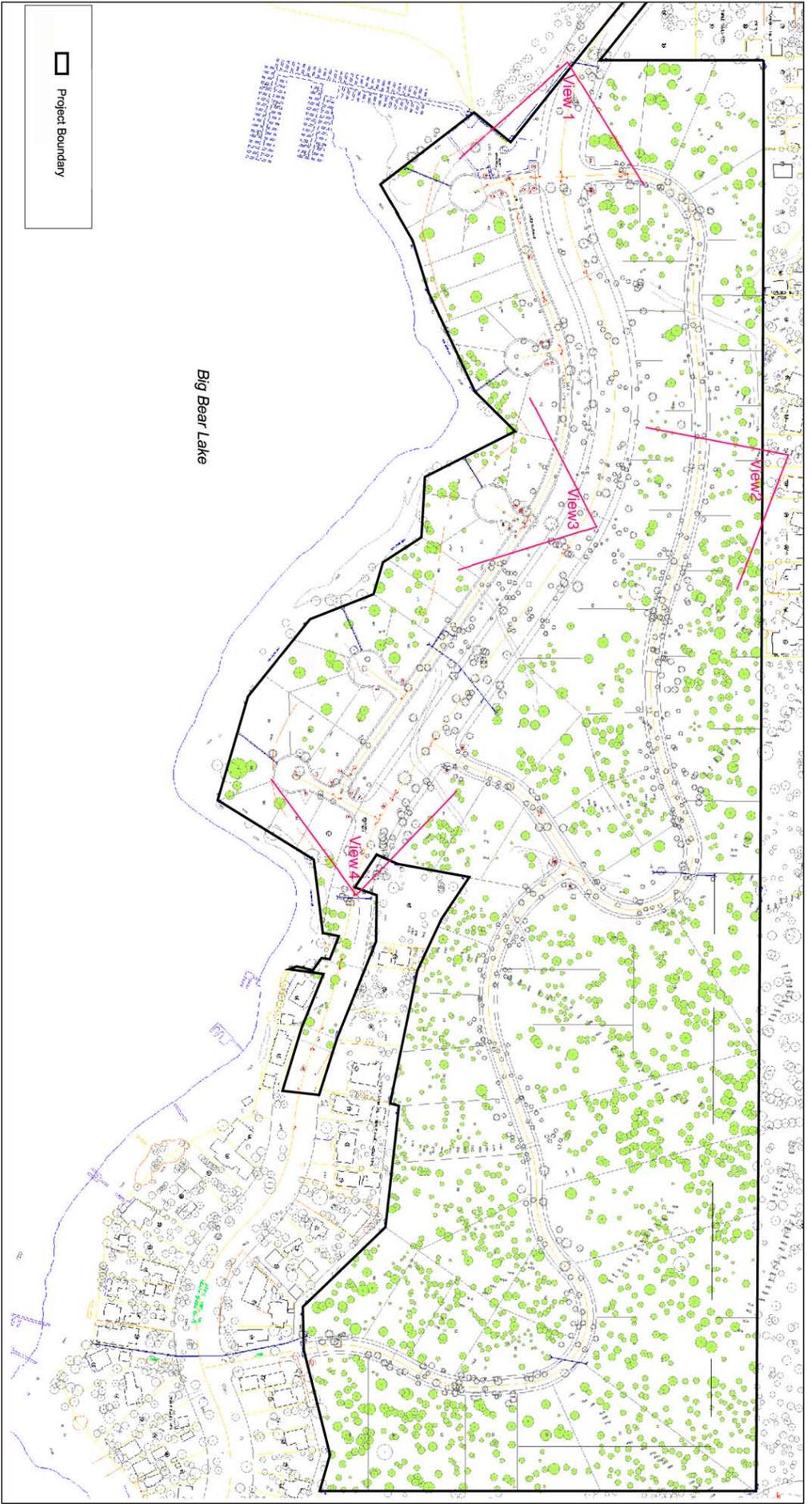
The alteration of the area would be permanent and would continue throughout the life of the project. As discussed below, based upon the density of the proposed residential uses south of the realigned State Route 38 and view simulation data, it is concluded that viewshed characteristic impacts from the interior of the project site and surrounding uses to the north, east and west of the project are significant and unavoidable, given the current characteristics of the area.

The following sections include a discussion of the views across the project site, views of Big Bear Lake and views of distant mountain ranges, with implementation of the Moon Camp development. Exhibits and simulations are provided that have been utilized to conduct the viewshed analysis which includes: Exhibit 5.4-2, *View Map* (showing the field of view for each simulation); Exhibit 5.4-3, *Plan View*; Exhibit 5.4-4, *View East of State Route 38*; Exhibit 5.4-5, *View South from Proposed Realignment of State Route 38*; Exhibit 5.4-6, *View West from State Route 38*; and Exhibit 5.4-7, *View South from Flicker Road*. The exhibits and simulations present an anticipated development scenario, thus, they are not representative of architectural design and final development plans for the placement of new residences. The analysis is based upon buildout of the 92 residential lots, the realignment of State Route 38 and construction of a 100 boat slip marina facility.

The aesthetic value can be subject to interpretation and can be debated to a certain extent. Nevertheless, based upon a defined threshold of change in visual character, the proceeding sections have concluded a significant and unavoidable impact that cannot be mitigated for view areas to the north, south, east and west of the site and from the south shore of Big Bear Lake.

VIEWS TO PROJECT SITE

Views from West. The heart of the Community of Fawnskin is located to the west of the project site. Single-family residential units are situated along Oriole Lane, immediately west of the project site. Long-range views from Oriole Lane and State Route 38, to the Lake and distant mountain ranges are currently partially obstructed by dense collections of Jeffrey Pine trees. Exhibit 5.4-1a, View No. F, indicates that



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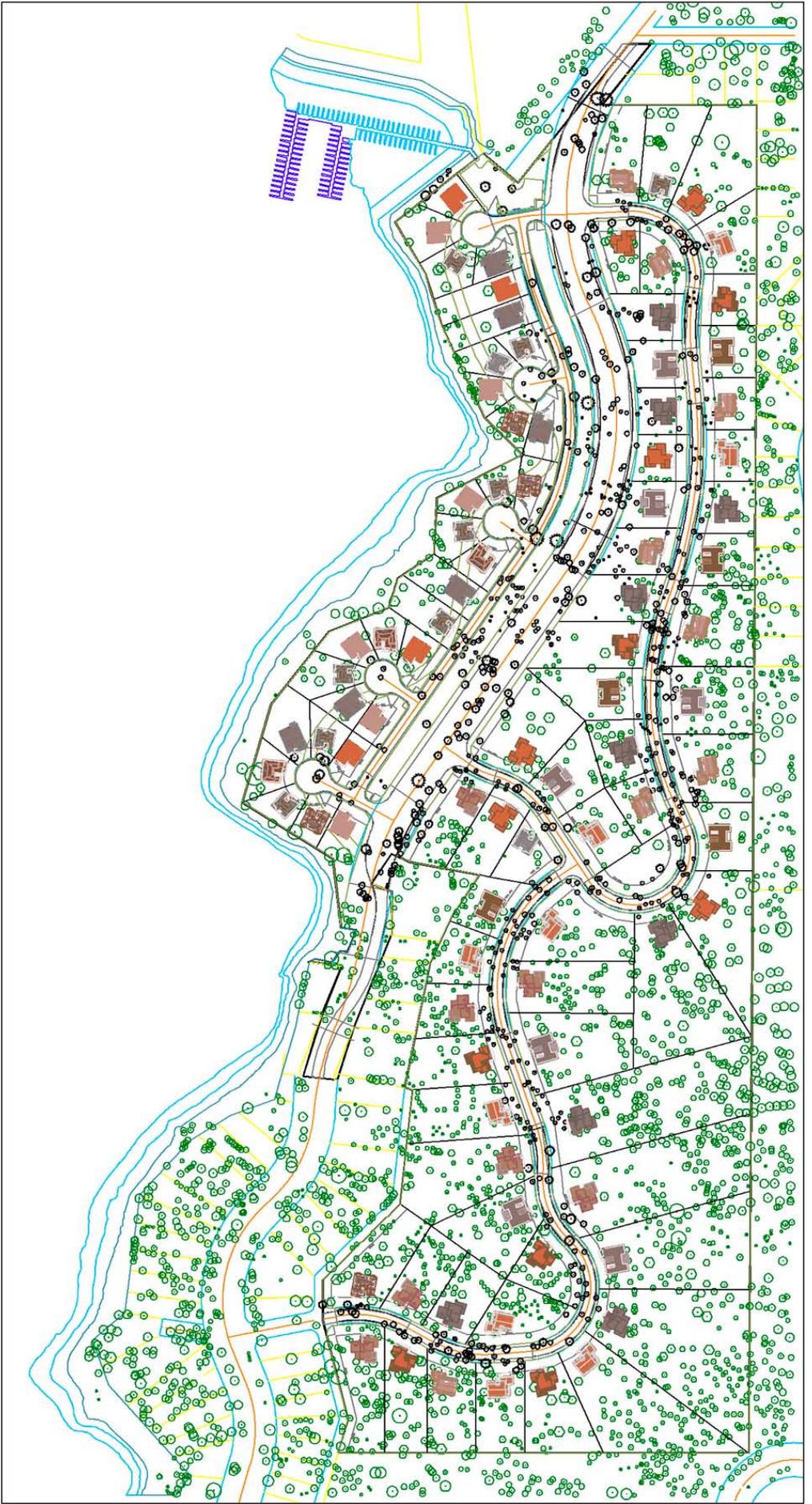
RBF CONSULTING
 PLANNING ■ DESIGN ■ CONSTRUCTION
 1205 JN 10-103801

MOON CAMP TT #16136
 ENVIRONMENTAL IMPACT REPORT

View Map

Exhibit 5.4-2

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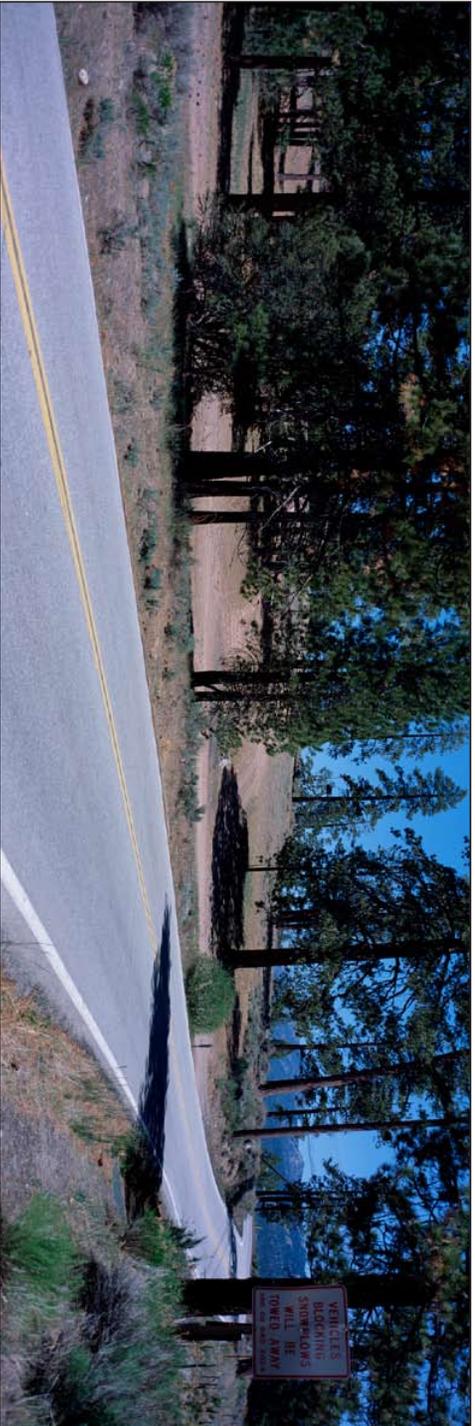
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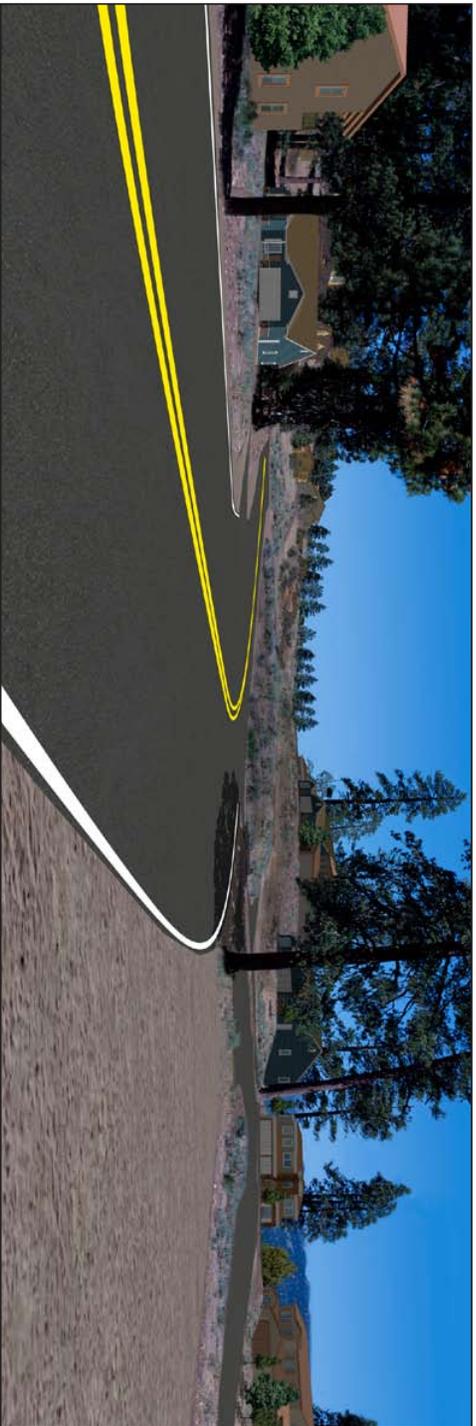
MOON CAMP TT #16136
ENVIRONMENTAL IMPACT REPORT
Plan View

Exhibit 5.4-3

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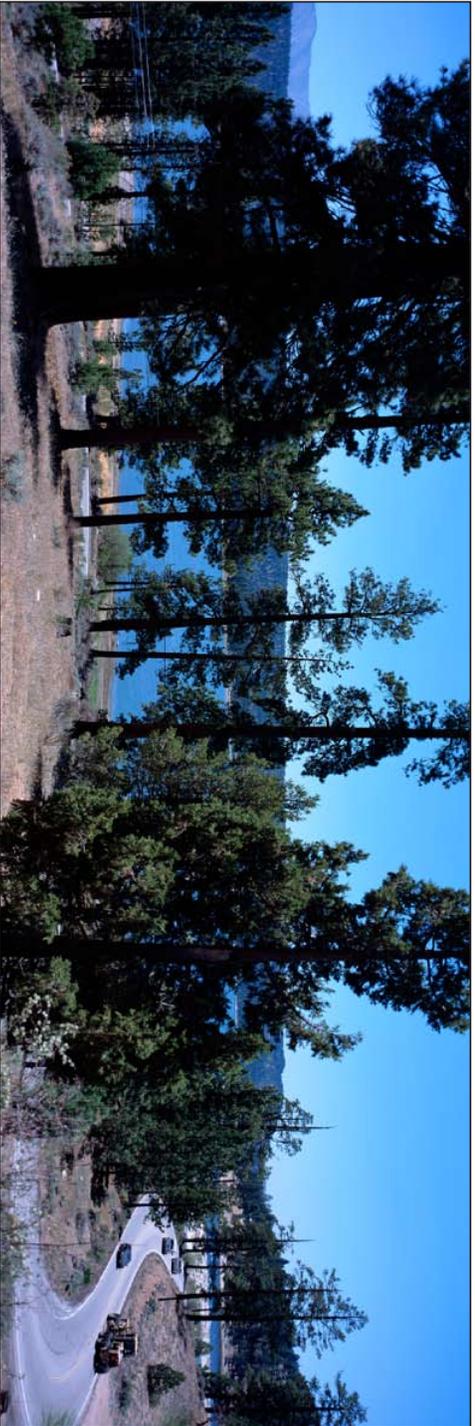


Existing View

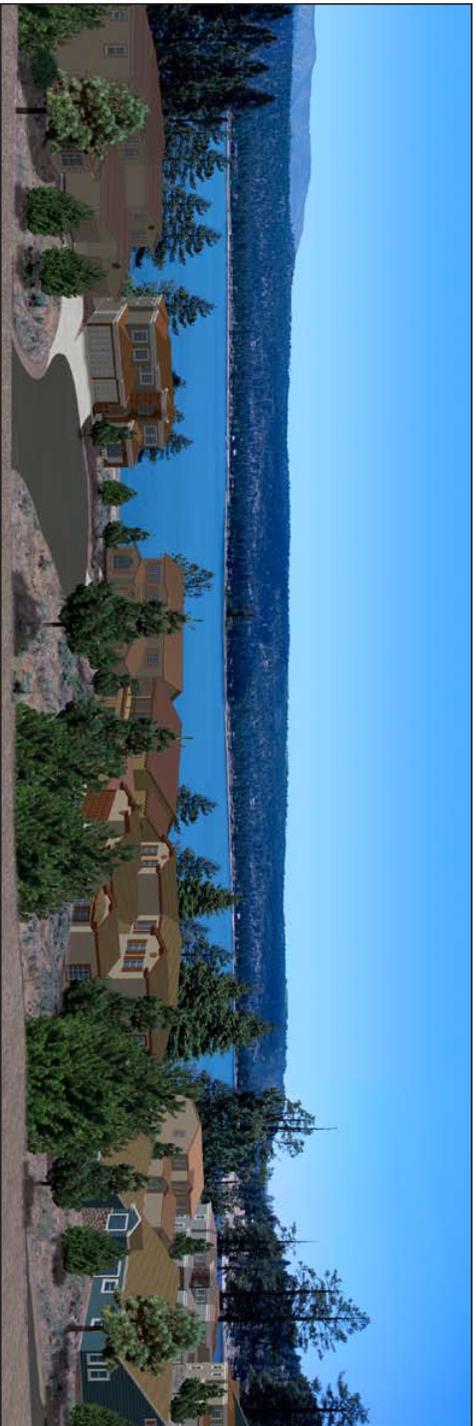


Simulated View

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Existing View



Simulated View

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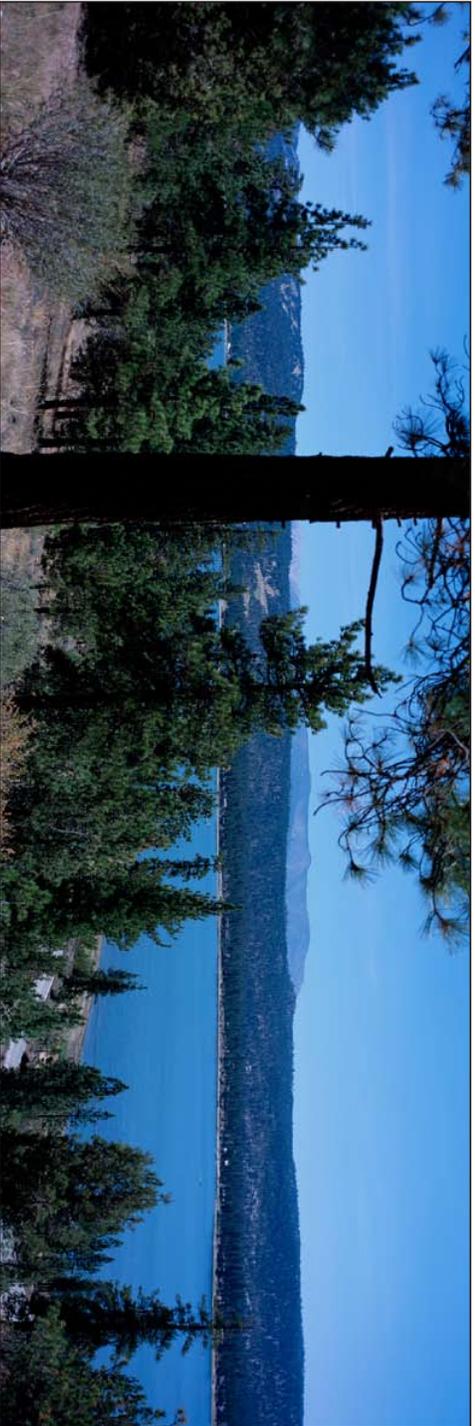


Existing View

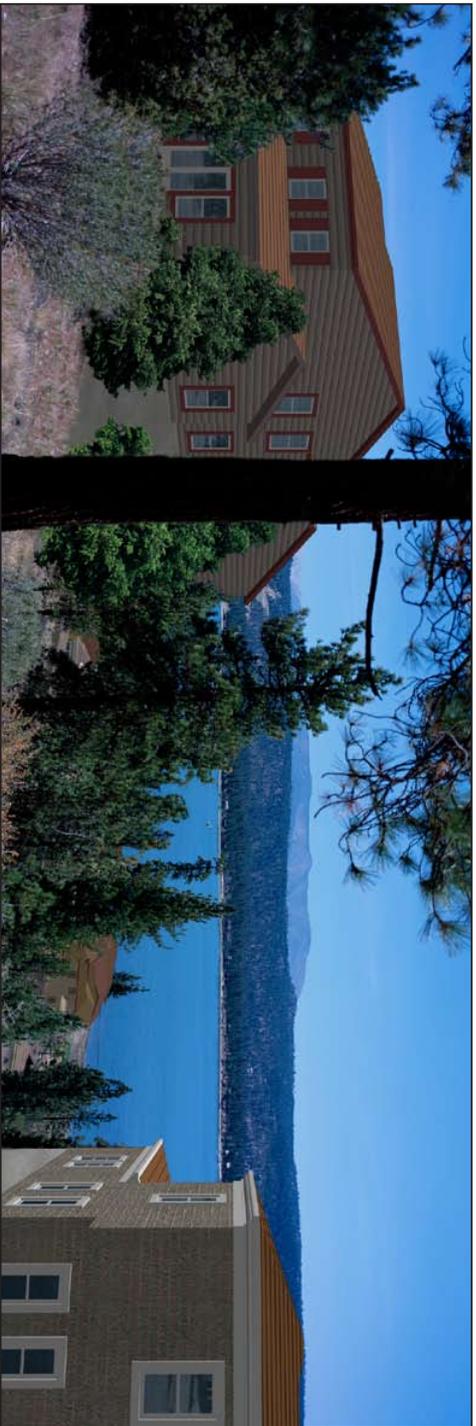


Simulated View

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Existing View



Simulated View

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View East from State Route 38, depicts a view of the project site from the eastern portion of the project site. The view simulation indicates a substantial change in the visual character of the site. It is evident that removal of trees associated with the roadway realignment would reduce the forested nature of the project site.

Furthermore, the introduction of residences along the lakefront would partially disrupt short- and long-range views of the Lake and the distant mountain ranges.

Implementation of the project would also involve the construction of a 100 boat slip marina facility. The marina facility would not alter long-range views of the distant mountain ranges, generally located in a southerly direction, but would alter the visual character of the Lake by introducing a man-made structure on the lakefront and removal of several trees for parking facilities. Since both long- and short-range views to the southeast would be altered with new residences on the lakefront and the visual character of the project site and Lake would be altered by a reduction in tree density, it is concluded that long-term aesthetic impacts to residents located west of the project site are significant and unavoidable.

Views from East. For purposes of this analysis, views in this subsection are considered for residences along State Route 38 to the east of the site. Implementation of the proposed project would not alter southerly views of the Lake for residences situated between the Lake and the south side of State Route 38, as short- and long-range views of the Lake and the distant mountain ranges would remain unobstructed. However, short- and long-range views of the lake and distant mountain ranges to the west would be altered with the construction of new lakefront residences. Exhibit 5.4-6, *View West from State Route 38*, indicates a view of the project site from the western portion of the project site. The view simulation indicates a substantial change in the visual character of the site. It is evident that removal of trees associated with the roadway realignment would reduce the forested nature of the project site. Additionally the new residences along the lakefront would obstruct the short- and long-range views to the lake and distant mountain ranges.

Currently, existing residents north of State Route 38 have views of the Lake and distant mountain ranges that are obstructed by the residences situated along the lakefront (south side of State Route 38). However, the residences on the north side of State Route 38 are at a higher elevation than the existing lakefront homes. Thus, partial views of the lake are available at various locations. These residents would maintain partial views of the Lake to the immediate south, with implementation of the Project. As indicated in Exhibit 5.4-6, views of the lake and distant mountain ranges to the southwest and west would be obstructed with the construction of new lakefront residences. Furthermore, the removal of trees associated with the roadway realignment would reduce the forested nature of the project site.

Since both long- and short-range views to the southwest would be obstructed with new residences on the lakefront and the visual character of the project site and Lake would be altered by a reduction in tree density, it is concluded that long-term aesthetic impacts to residents located east of the project site are significant and unavoidable.

Views from the South. Views across the Lake from the south shore and the Lake itself to the north shore consist primarily of mountainsides covered in dense forest vegetation, with small areas of sporadic developed areas, such as the Community of Fawnskin. As shown in Exhibit 5.4-3, *Plan View*, the majority of the existing Jeffrey pine trees located between the high-water line of the Lake and immediately adjacent to or on the southern boundary of the project would remain. The lakefront residences, and residences to the north, would be partially screened by the existing trees when viewed from the south. The potential size and massing of residential buildings and change in visual character of the lake from the proposed marina facility (marina facility discussed in “views from west”) would constitute a significant and unavoidable impact for views across the lake, from the south shore, and the lake itself to the north.

Views from the North. Views in this subsection are considered for those residents located along Flicker Road to the north of the project site. Exhibit 5.4-7, *View 2 – View South from Flicker Road*, is a simulated view looking south across the project site. The view simulation shows the project site at full build-out. Flicker Road is located at a higher elevation than the project site, as the mountainside slopes considerably from Flicker Road to the lakefront. The simulated view indicates a substantial change to the visual character and views, as compared to the existing view. It should be noted that the simulation utilized large, two-story homes to present a worst-case scenario to determine obstruction of views. The construction of new residences to the south of Flicker Road would partially obstruct views from existing Flicker Road residences to the lake and distant mountains. Additionally, the relocation of State Route 38 would involve the removal of Jeffrey Pine trees located adjacent to the current roadway alignment and future home sites. The removal of such trees would diminish the forested nature of the site. However, the removal of the trees may also enhance views of the Lake for some residents along Flicker Road. Since the views to the south of the Lake and distant mountain ranges would be altered and viewshed characteristics would be permanently changed, impacts are concluded as significant and unavoidable.

LONG-TERM SCENIC HIGHWAY IMPACTS

5.4-3 *Implementation of the Moon Camp project would impact views of Big Bear Lake, the distant mountain ranges to the south and adjacent forest areas from North Shore Drive (State Route 38) which is a County and Federally recognized Scenic Highway/Byway. Analysis has concluded that significant and unavoidable impacts would occur as a result of project development.*

With development of the proposed project, viewshed and visual characteristics along State Route 38 would be permanently modified. Currently, State Route 38 is the only visible on-site improvement. With the introduction of 92 residential lots, local streets and associated infrastructure, and a 100 boat slip marina facility on Big Bear Lake, current viewshed characteristics would be modified and in some cases dominate the visual features along State Route 38. Distant views of the mountain ranges and Big Bear Lake to the south would be affected by the proposed uses.

The alteration of the area would be permanent and would continue throughout the life of the project. Based upon the density of the proposed residential uses south of the realigned State Route 38 and view simulation data depicted in Exhibits 5.4-4, *View East from State Route 38*, Exhibit, 5.4-5, *View South from Proposed Realignment of State Route 38*, and Exhibit 5.4-6, *View West from State Route 38*, it is concluded that viewshed characteristic impacts along State Route 38 looking south across the project site are significant and unavoidable, given the current characteristics of the area. Exhibit 5.4-2, *View Map*, indicates the field of view for each of the views presented in Exhibits 5.4-4, 5.4-5, 5.4-6 and 5.4-7. This analysis is based upon full build-out of the 95-lots (92 residences) associated with the project.

As stated in the Existing Conditions subsection, State Route 38 (North Shore Drive) is designated by the County of San Bernardino as a Scenic Highway. As such, the highway is subject to additional land use and aesthetic controls under the County's Scenic Highway Overlay District. The provisions of the Scenic Resources Overlay District are provided within the *Scenic Corridor* discussion above. The following describes the views across the project site from State Route 38 at various locations with buildout of the Moon Camp development. The discussion includes analysis that considers the provisions of the Scenic Resources Overlay District.

This portion of the analysis considers views for people utilizing State Route 38 and traversing the project site in an east/west direction. Exhibit 5.4-4, *View East from State Route 38*, is a simulated view from State Route looking east across the project site. Exhibit 5.4-6, *View West from State Route*, is a simulated view from State Route 38 looking west across the project site. As shown in the simulations, several Jeffrey Pine trees would be removed with realignment of State Route to the north. The building and structure placement of the homes on the northern side of the highway appear compatible with and do not substantially detract from the visual setting of the area or obstruct significant views, as the mountain slopes upward to the north.

The placement of homes was based on the regulations set forth in the County Development Code, including setback requirements, height limitations, lot coverage, etc. The homes shown in the simulations are at or near the maximum size allowed on each parcel. The design of the homes is reflective of the "newer" homes in the Fawnskin area.

The removal of native vegetation appears minimal and replacement vegetation would supplement the loss of natural vegetation. Utilities, parking and storage areas appear to be screened from view, to the maximum extent possible. Despite the necessary grading for construction of the local streets and custom-built homes, the site would maintain varying topography, which would maintain a mountain community setting.

Building and structure placement on the southern side of the Highway (lakefront properties), while appearing compatible with the visual setting on the north side of the Highway, results in obstructed views of the distant mountain ranges and immediate views of the Lake to the south. This is depicted in Exhibit 5.4-6, *View West from State Route 38*. As shown in Exhibit 5.4-6, upon entering the project area on State Route from the east, views of the Lake are obstructed.

In some cases, as shown in Exhibit 5.4-5, *View South from Proposed Realignment of State Route 38*, views of the Lake and distant mountains would be maintained. In Exhibit, 5.4-5, the existing view shows State Route 38, and is clearly evident that while traversing this section of the Highway, views of the Lake would be unobstructed. The location of the simulated view is from the north side of State Route 38, as realigned (refer to Exhibit 5.4-2, *View Map*). The simulated view shows that the realigned Highway would still provide views of the Lake, as the roadway would be located at a higher elevation compared to the existing alignment.

It is concluded that development on the north side of State Route 38 would not obstruct views of scenic vistas, nor would the construction of custom-built homes detract from the visual setting of the area. According to the provisions of the Scenic Resources Overlay District, the "Building and Placement" standard states that "the building and structure placement should be compatible with and should not detract from the visual setting or obstruct views." Since development on the south side of State Route 38 would disrupt Lake and distant mountain views to the south along State Route 38, the proposed project would not fulfill all of the Development Code standards such as building and structure placement not obstructing significant views, as outlined in the Scenic Resources Overlay District. Thus, significant and unavoidable impacts would occur as a result of the proposed project.

LONG-TERM LIGHT AND GLARE IMPACTS

5.4-4 *The proposed Moon Camp project would introduce additional light and glare on-site which may affect the surrounding residents. Analysis has concluded that potential impacts would be reduced to less than significant levels with implementation of the recommended mitigation measures.*

Long-term impacts are associated with the construction of new residences and street lighting, which may create nighttime light or daytime glare.

Night-time lighting impacts are significant when they interfere with or intrude into sensitive land use areas which include private residences and public access areas. Glare impacts can cause daytime interferences with activities at sensitive land use areas as defined above as well as public roadways where automobile drivers can be temporarily blinded by glare thus causing a safety concern. Residences to the east (along State Route 38) and west (along Oriole Lane) of the site would be partially shielded from new light sources by the existing Jeffrey Pine trees and associated vegetation. As indicated on Exhibit 5.4-3, *Plan View*, new residences located immediately south of Flicker Road would also be partially shielded from new sources of light by the existing Jeffrey pine trees. The *Plan View* presents an anticipated development scenario, thus, it is not representative of final development plans for the placement of new residences. The *Plan View* indicates that the new residences to the south of Flicker Road would likely be situated on the southernmost portions of the lots, thus, maximizing the distance to the existing residences located on Flicker Road. Implementation of the recommended mitigation measures would reduce potential impacts to less than significant levels.

Glare impacts are typically related to the use of modern, highly reflective surfaces such as gold, or silver glass, acrylic, and broad, flat surfaces that are painted with

highly reflective colors. A review of the visual simulations, renderings and the Site Plan indicates that the proposed residential subdivision would not cause significant glare impacts along State Route 38, Oriole Lane and Flicker Road. Although there are no proposed buildings or structures associated with the proposed project, the custom homes that would be built on the lots are not anticipated to incorporate highly reflective glass, or broad, flat surfaces. New residential development is anticipated to be consistent with existing residential structures in the local area and is subject to approval by the County of San Bernardino. The surrounding residences architectural theme consists of materials indicative of wood siding and traditional log homes. Future homes are anticipated to utilize similar architectural themes as seen in the existing Community of Fawnskin. Implementation of the recommended mitigation measures would reduce potential impacts to less than significant levels.

In addition, future residential development will be required to comply with the glare and outdoor lighting provision of the County of San Bernardino Development Code (i.e., Section 87.0921 et. seq.). The intention of this section is:

- To encourage effective, non-detrimental lighting;
- To maintain night time safety, utilizing security and productivity; and
- To encourage lighting practices and systems, which will minimize light pollution, glare and light trespass, conserve energy and resources and curtail the degradation of the night time visual environment.

CUMULATIVE

5.4-5 *Build-out of the Moon Camp development, together with cumulative projects, may alter the nature and appearance of the area and contribute to the loss of undeveloped areas. Analysis has concluded that no significant impacts beyond the analysis contained in the County of San Bernardino General Plan and General Plan EIR are anticipated.*

As development occurs throughout the Fawnskin area, residents and visitors in the area would notice the visual effects of development projects. However, the significance of these visual/aesthetic changes is difficult to determine, since aesthetic value is subjectively determined and potential impacts are site-specific. 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 areas. Security and street lighting would introduce light and glare potential to the area. Impacts are typically evaluated on a project-by-project basis. Cumulative impacts can be mitigated to less than significant levels with use of building materials that are consistent with the general character of the area, landscaping design, and proper lighting techniques to direct light on-site and away from adjacent properties.

MITIGATION MEASURES

The following mitigation measures directly correspond to the identified impact statements in the Impacts discussion.

SHORT-TERM AESTHETIC/LIGHT AND GLARE IMPACTS

- 5.4-1a 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.
- 5.4-1b All construction-related lighting associated with the construction of new roadways, the realignment of State Route 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 concomitant with Grading Permit applications for the subdivision of the lots.

LONG-TERM AESTHETIC IMPACTS

- 5.4-2a Roof pitches shall not exceed 9/12 and no higher than two-story for any portion of the structure footprint for lots 62-92.
- 5.4-2b All homes shall provide a two-car garage with automatic garage doors.
- 5.4-2c A view envelope for each property shall be established by creating a line starting at 6 feet at each side lot line and moving up at a 30 degree angle until both lines meet at the middle of the property. The area located under these lines is the view envelope. Structures shall not protrude outside the view envelope. The view envelope orients the building ridgeline parallel to the view corridors on narrower lots providing views for residents located behind the property.
- 5.4-2d 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, pale yellows, and shall be consistent with the mountain character of the area.
- 5.4-2e Outside parking/storage areas associated with the boat dock activities shall be completely 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.
- 5.4-2f 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 mature growth. The removal of existing vegetation shall not be required to create views.

- 5.4-2g 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 IMPACTS

- 5.4-3a Any entry sign for the development shall be a monument style sign compatible with the mountain character, preferably, rock or rock-appearance.
- 5.4-3b Prior to recordation of the tract map (and/or any ground disturbance, whichever occurs first), landscaping plans for lettered lots B and C shall be submitted to and approved by the San Bernardino County Planning Department.

LONG-TERM LIGHT AND GLARE IMPACTS

- 5.4-4a 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.
- 5.4-4b 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.
- 5.4-4c 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.
- 5.4-4d 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.
- 5.4-4e Mitigation Measures 5.4-4a through 5.4-4d shall be included within the Conditions, Covenants and Restrictions (CC&Rs) of the Home Owner's Association (HOA).
- 5.4-4f All outdoor light fixtures shall be cutoff luminaries and shall only use high- or low-pressure sodium lamps.

5.4-4g The Project Applicant/Developer shall install light colored, reflective roof products. Such roofs shall utilize light colored, reflective materials that meet the performance standards developed by the Energy Star Labeled Roof Program, as well as the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standards 90.1 and 90.2 on energy efficient buildings. This condition shall be verified by the County of San Bernardino Building and Safety Division prior to issuance of building permits.

CUMULATIVE

5.4-5 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Significant and unavoidable impacts related to Aesthetics/Light and Glare have been identified for viewshed alterations involving existing residents to the north, east and west of the project site. Additionally, significant and unavoidable impacts have been identified for views from State Route 38, a scenic highway, to the south and from the south shore of Big Bear Lake. If the County of San Bernardino approves the 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 Aesthetic/Light and Glare have been identified following implementation of mitigation measures and/or compliance with applicable standards, requirements and/or policies by the County of San Bernardino.

5.5 TRAFFIC AND CIRCULATION

This Section is based upon the project Traffic Analysis prepared by Kunzman Associates, September 2003 (refer to Appendix 15.3, *Traffic Data*.) RBF Consulting conducted a peer review of the Kunzman Associates Study to confirm accuracy. The evaluation considers impacts to local roadways, intersections, regional transportation facilities and ingress/egress locations on-site. Mitigation measures are recommended to reduce impacts to less than significant levels.

EXISTING CONDITIONS

STUDY AREA STREET SYSTEM

Exhibit 5.5-1, *Highway Designations*, shows the common name, as well as the Highway number for each roadway in the study area. Roadways that would be utilized by the development include North Shore Drive, Stanfield Cutoff and Big Bear Boulevard. In the vicinity of the project site, the following roadway conditions exist:

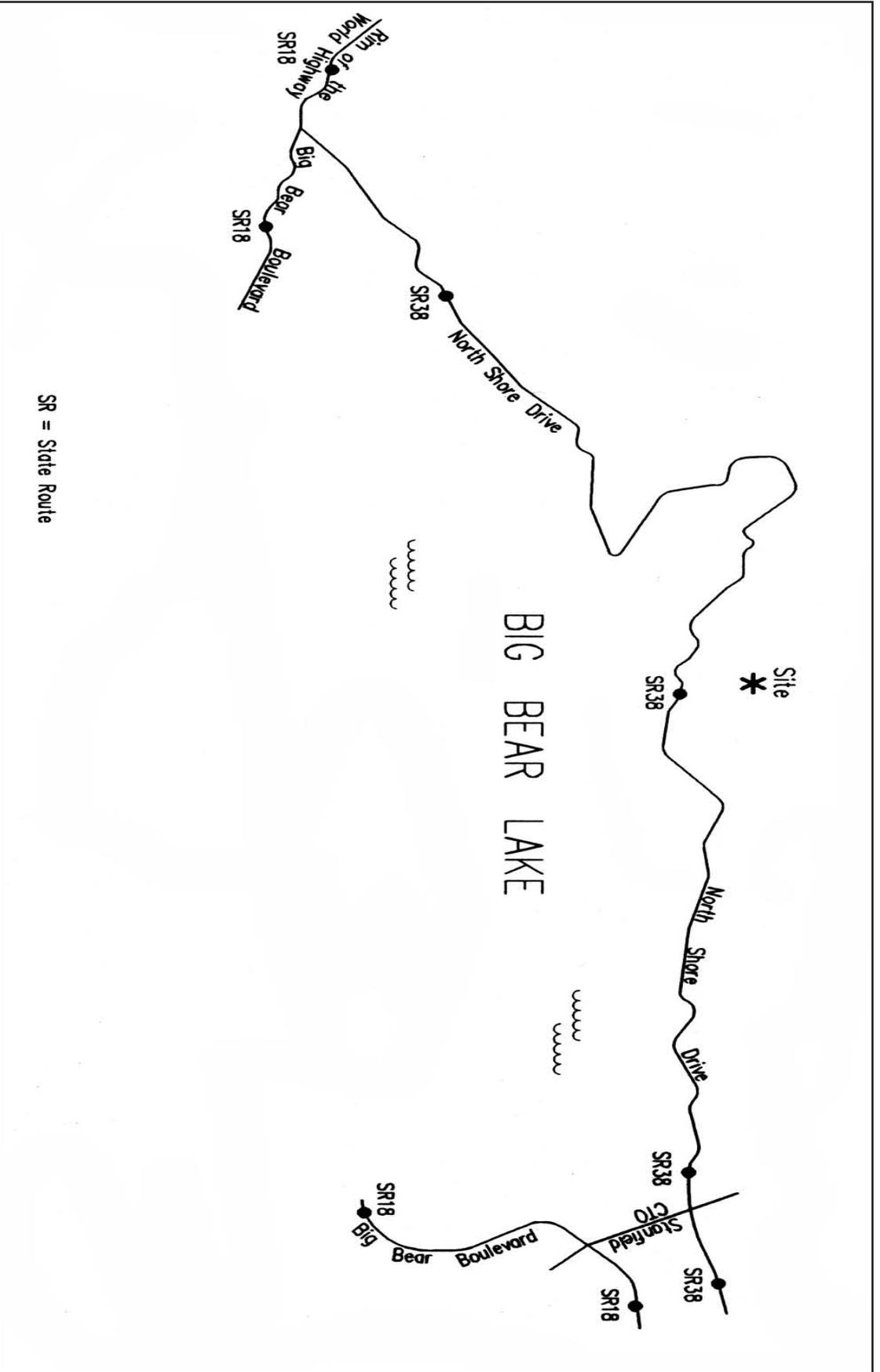
- North Shore Drive. This east-west two-lane roadway, also referred to as State Route 38, currently has a peak monthly volume of 4,750 vehicles per day. North Shore Drive is the only on-site improvement. The roadway has a shoulder of varying widths that allows for emergency parking. There are no designated bike lanes on North Shore Drive, and there are no bus turnouts.
- Stanfield Cutoff. This north-south two-lane road currently has a peak monthly volume of 5,625 vehicles per day.
- Big Bear Boulevard. This east-west road, also referred to as State Route 18, consists of four lanes west of Stanfield Cutoff, and two lanes east of Stanfield Cutoff. It has a peak monthly volume of 20,500 vehicles per day, west of Stanfield Cutoff.

EXISTING TRAVEL LANES AND INTERSECTION CONTROLS

Exhibit 5.5-2, *Existing Through Travel Lanes and Intersection Control*, identifies the existing roadway conditions for highways near the site, the number of through lanes for existing roadways, and the existing intersection controls.

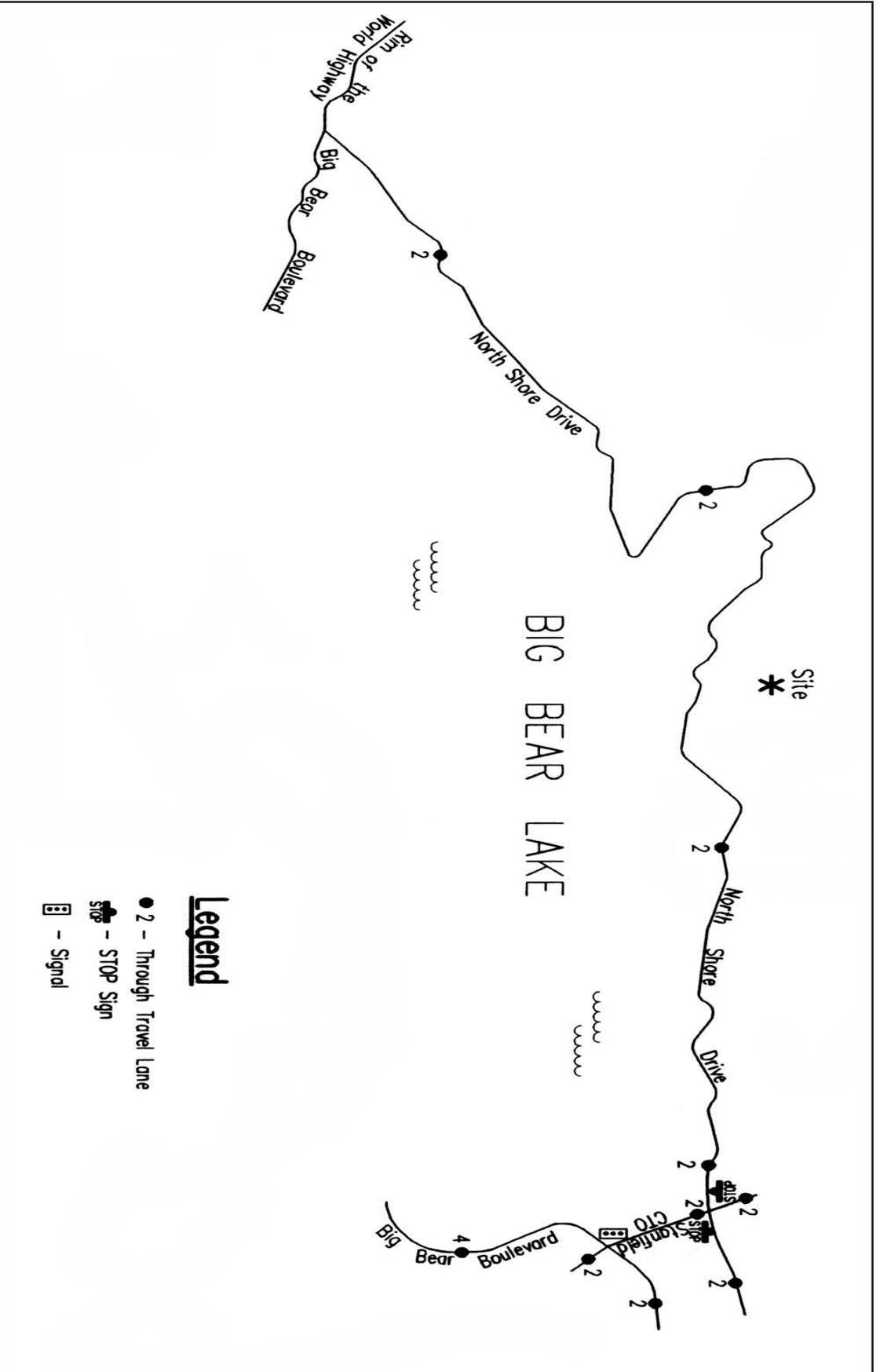
EXISTING DAILY TRAFFIC VOLUMES

Exhibit 5.5-3, *Existing Daily Traffic Volumes – Average Month*, and Exhibit 5.5-4, *Existing Daily Traffic Volumes – Peak Month*, depict the average and peak month daily two-way traffic volumes. Traffic volumes were obtained from the weekday peak hour intersection turning movement counts conducted by Kunzman Associates in March, 2001.



Source: Kunzman Associates, June 25, 2003.

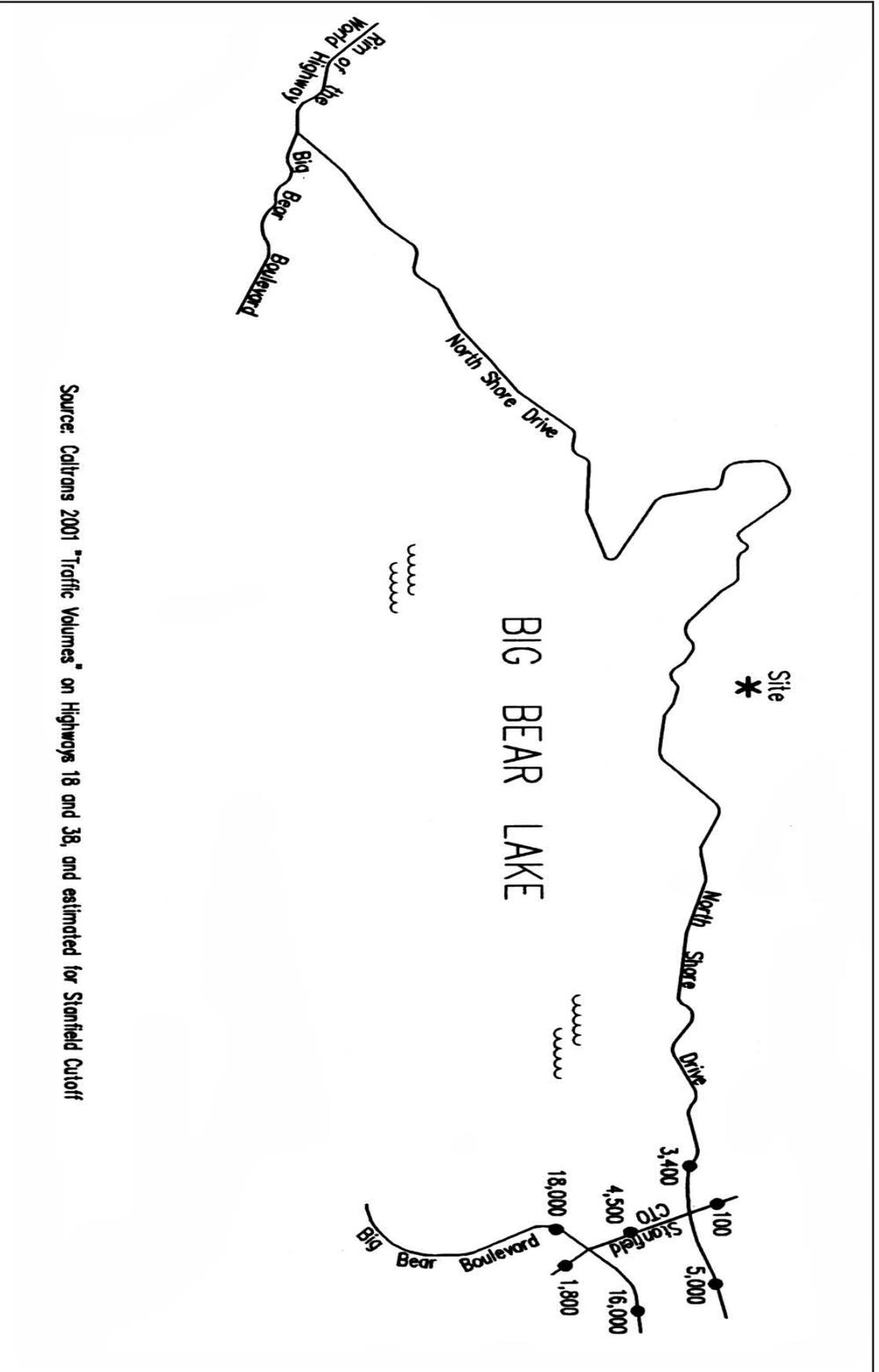




Source: Kunzman Associates, June 25, 2003.



Existing Through Travel Lanes and Intersection Control



Source: Caltrans 2001 "Traffic Volumes" on Highways 18 and 38, and estimated for Stanfield Cutoff

Source: Kunzman Associates, June 25, 2003.

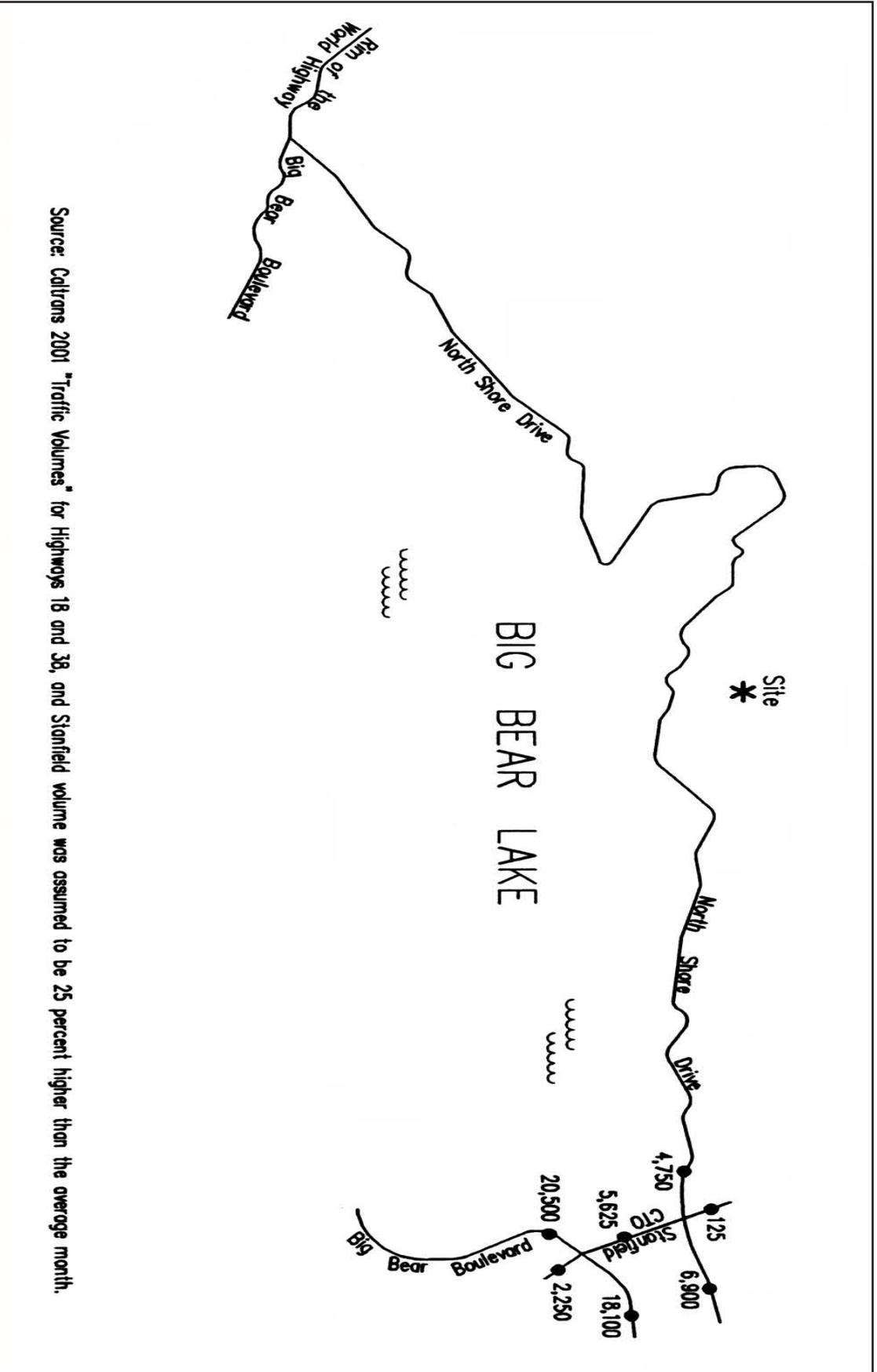


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Existing Daily Traffic Volumes - Average Month

MOON CAMP TT #16136
ENVIRONMENTAL IMPACT REPORT



Source: Caltrans 2001 "Traffic Volumes" for Highways 18 and 38, and Stanfield volume was assumed to be 25 percent higher than the overage month.

Source: Kunzman Associates, June 25, 2003.



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12/06 JN 10-101901

Existing Daily Traffic Volumes - Peak Month

MOON CAMP TT #16136
ENVIRONMENTAL IMPACT REPORT

Table 5.5-1, *Determining Annual Growth Rates and Peak Month Factors*, shows daily traffic volumes, as reported by Caltrans in traffic volumes for state highways in 1989 and 1999. From this data, it has been determined by Kunzman Associates that a reasonable factor to convert typical month volumes to peak month volumes is 1.25.

The County of San Bernardino recommends a growth rate of 1.0 percent per year for the Big Bear area based on a recent analysis by the County. Typically an annual growth rate approach is better than a cumulative projects approach because the cumulative projects approach typically leads to double counted trips thus there is a compounding of errors consideration. The double counting occurs for instance when homes are proposed and the cumulative projects list includes a retail commercial center. The trip added from the home that goes to the store is the same trip added a second time from the store to the home. The compounding of errors leads to erroneous results when for instance in the case of residential the density is over estimated, then the trip generation is overestimated (this is particularly problematic in Big Bear where most houses are not inhabited full time, and then the trip distribution is overestimated in that the local trips are under reported and the longer trips are over reported. The County of Los Angeles uses the compounded growth rate approach. Also, it should be noted that the County of Riverside formerly used the compounded growth rate approach, then switched to the cumulative projects approach, and is now reconsidering going back to the compounded growth rate approach.

Year 2001 traffic volume estimates were obtained by factoring the sum of the morning and evening peak hour volumes. A factor of 5.5 was used. According to the Kunzman Associates report, this method of estimating daily traffic volumes produces reasonable results. Refer to Appendix B of the *Traffic Analysis* report for more details.

EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES

Existing manual peak hour turning movement counts were conducted by Kunzman Associates in March 2001. Appendix C of the *Traffic Analysis* report contains plots of the peak hour intersection turning movement volumes. Additionally, the same plots show the peak hour leg approach volumes and two-way peak hour leg volumes.

There are two peak hours in a weekday. The morning peak hour is between 7:00 a.m. and 9:00 a.m., and the evening peak hour is between 4:00 p.m. and 6:00 p.m. The actual peak hour within the two-hour interval is the four consecutive 15-minute periods with the highest total volume when all movements are added together. Thus, the evening peak hour at one intersection may be 4:45 p.m. to 5:45 p.m., if those four consecutive 15-minute periods have the highest combined volume.

EXISTING INTERSECTION LANES

Appendix B of the *Traffic Analysis* shows the number of existing through and turning movement lanes and peak hour turning movement volumes for each intersection. The lanes are also listed in Tables 1A and 1B, *Summary of Intersection Delay for the Unsignalized Intersection of North Shore and Stanfield Cutoff*, and *Summary of*

Intersection Delay and Level of Service (LOS) (Assumes North Shore and Stanfield Cutoff are Signalized), respectively, of the Traffic Analysis report.

**Table 5.5-1
Determining Annual Growth Rates and Peak Month Factors**

Road Location (See Figure 3 for Location References)	Year 1991			Year 2001			Growth Ratio	
	Annual Daily Traffic Volume	Peak Month Daily Traffic Volume	Peak Month Divided by Annual Daily Traffic Volume	Annual Daily Traffic Volume	Peak Month Daily Traffic Volume	Peak Month Divided by Annual Daily Traffic Volume	2001 Annual Volume Divided by 1991 Annual Volume	Annual Growth Rate (Percent)
1. Rim of the World Highway (SR-18) west of North Shore Drive (SR-38)	5,200	6,000	1.15	6,100	7,100	1.16	1.173	1.73%
2. Big Bear Boulevard (SR-18) east of North Shore Drive (SR-38)	6,900	8,000	1.16	6,300	7,300	1.16	0.913	-0.87%
3. Big Bear Boulevard (SR-18) west of Stanfield Cutoff	16,000	19,100	1.19	18,000	20,500	1.14	1.125	1.25%
4. Big Bear Boulevard (SR-18) east of Stanfield Cutoff	13,000	15,300	1.18	16,000	18,100	1.13	1.231	2.31%
5. North Shore Drive (SR-38) north of Big Bear Boulevard (SR-18) and Dam	2,000	2,350	1.18	1,600	2,300	1.44	0.800	-2.00%
6. North Shore Drive (SR-38) west of Stanfield Cutoff (SR-18)	3,000	3,450	1.15	3,400	4,750	1.40	1.133	1.33%
7. North Shore Drive (SR-38) east of Stanfield Cutoff	3,300	3,750	1.14	5,000	6,900	1.38	1.515	5.15%
Average			1.16			1.26		
Value Which Will Be Used for Traffic Study			1.25			1.25		
Note: SR = State Route The peak month conditions are for a typical day in a peak month and do not necessarily include peak weekend conditions such as the Fourth of July.								

EXISTING INTERSECTION DELAY

The technique used to assess the operation of an intersection is known as the Intersection Delay Method. To calculate the Intersection Delay value the volume of traffic using the intersection is compared with the capacity of the intersection. The Intersection Delay value is usually expressed as the average seconds of delay per vehicle using the intersection.

The Intersection Delay for the existing traffic conditions have been calculated and are shown in Table 5.5-2, *Summary of Intersection Delay and Level of Service for Unsignalized Intersection of North Shore and Stanfield Cutoff* and Table 5.5-3, *Summary of Intersection Delay and Level of Service (LOS) for Signalized Intersection of Big Bear Boulevard and Stanfield Cutoff*. Existing Intersection Delay values are based upon manual peak hour turning movement counts, factored up to represent peak month counts.

Table 5.5-2
Summary of Intersection Delay and Level of Service
for the Unsignalized Intersection of Stanfield Cutoff and North Shore

Intersection	Land Use Scenario	Peak Hour	Lanes	Intersection Control	Two Way Stop Worst Level of Service (LOS)	
					Movement(s)	Level of Service
1. Stanfield Cutoff and North Shore – Average Month	Year 2001 Without Project	AM	Existing	2 Way Stop	All	A
1. Stanfield Cutoff and North Shore – Average Month		PM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Average Month		AM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Average Month		PM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Peak Month	Year 2001 Without Project	AM	Existing	2 Way Stop	All	A
1. Stanfield Cutoff and North Shore – Peak Month		PM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Peak Month		AM		2 Way Stop		B
1. Stanfield Cutoff and North Shore – Peak Month		PM		2 Way Stop		B
1. Stanfield Cutoff and North Shore – Average Month	Year 2006 Without Project	AM	Existing	2 Way Stop	All	A
1. Stanfield Cutoff and North Shore – Average Month		PM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Average Month		AM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Average Month		PM		2 Way Stop		A
1. Stanfield Cutoff and North Shore – Peak Month	Year 2006 Without Project	AM	Existing	2 Way Stop	SL	B
1. Stanfield Cutoff and North Shore – Peak Month		PM		2 Way Stop		B
1. Stanfield Cutoff and North Shore – Peak Month		AM		2 Way Stop		B
1. Stanfield Cutoff and North Shore – Peak Month		PM		2 Way Stop		B
Movement: NT = Northbound Through, NR = Northbound Right, NL = Northbound Left ST = Southbound Through, SR = Southbound Right, SL = Southbound Left ET = Eastbound Through, ER = Eastbound Right, EL = Eastbound Left WT = Westbound Through, WR = Westbound Right, WL = Westbound Left						

**Table 5.5-3
Summary of Signalized Intersection Delay and Level of Service (LOS)**

Intersection	Land Use Scenario	Peak Hour	Lanes												Inter-section Capacity Utilization (ICU) and LOS	Lanes				
			Northbound				Southbound				Eastbound						Westbound			
			Th	R	L	Li	Th	R	L	Li	Th	R	L	Li			Th	R	L	Li
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month Without Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	35.2 D+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month Without Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	38.6 D+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month With Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	36.5 D+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month With Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	39.9 D+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month Without Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	28.3 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month Without Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	26.8 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month With Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	29.2 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Average Month With Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	27.5 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month Without Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	49.3 D-	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month Without Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	64.3 E	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month With Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	51.7 D-	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month With Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	66.1 E	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month Without Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	31.7 C-	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month Without Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	30.2 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month With Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	32.7 C-	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2001 Peak Month With Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	31.0 C-	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month Without Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	37.0 D+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month Without Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	42.0 D	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month With Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	38.4 D+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month With Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	43.4 D	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month Without Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	28.8 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month Without Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	27.3 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month With Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	29.9 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Average Month With Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	28.1 C	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month Without Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	55.3 E+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month Without Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	73.6 E-	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month With Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	57.8 E+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month With Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	2	1	1	1	75.5 E-	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month Without Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	32.7 C-	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month Without Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	31.1 C-	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month With Project	AM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	33.8 C-	Widen
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2006 Peak Month With Project	PM	0.5	0.5	1	1	0	1	2	2	0	1	2	2	1	1	1	1	0.790 C-	Widen

Table continue on next page

NOTES
The Level of Services (LOS) for the Delay Method and Intersection Capacity Utilization Method differ because they are calculated entirely differently and LOS is defined differently. See Appendices for further discussion.

Table 5.5-3 - Continued
Summary of Signalized Intersection Delay and Level of Service (LOS)

Intersection	Land Use Scenario	Peak Hour	Lanes												Inter-section Capacity Utilization (ICU) and LOS	Lanes		
			Northbound			Southbound			Eastbound			Westbound						
			Th	Rt	Lt	Th	Rt	Lt	Th	Rt	L	Th	Rt	L				
1. Stanfield Cutoff (NS) and North Shore	2025 Average Month Without Project	AM	1	1	0	1	1	0	1	1	0	1	0	0	0	12.0 B+	0.456 A+	Existing
	2025 Average Month Without Project	PM	1	1	0	1	1	0	1	1	0	1	0	0	0	17.8 B-	0.359 A+	Existing
	2025 Average Month With Project	AM	1	1	0	1	1	0	1	1	0	1	0	0	0	12.2 B+	0.456 A+	Existing
	2025 Average Month With Project	PM	1	1	0	1	1	0	1	1	0	1	0	0	0	19.3 B-	0.359 A+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2025 Average Month Without Project	AM	0.5	0.5	1	1	0	1	1	1	2	1	1	1	1	46.4 D-	0.937 E	Existing
	2025 Average Month Without Project	PM	0.5	0.5	1	1	0	1	1	1	2	1	1	1	1	62.5 E+	1.060 F	Existing
	2025 Average Month With Project	AM	0.5	0.5	1	1	0	1	1	1	2	1	1	1	1	50.8 D-	0.946 E	Existing
	2025 Average Month With Project	PM	0.5	0.5	1	1	0	1	1	1	2	1	1	1	1	64.3 E	1.065 F	Existing
	2025 Average Month Without Project	AM	0.5	0.5	1	0	1	2	0	1	2	1	1	1	1	31.5 C-	0.726 C+	Widen
	2025 Average Month Without Project	PM	0.5	0.5	1	0	1	2	0	1	2	1	1	1	1	30.0 C	0.757 C	Widen
	2025 Average Month With Project	AM	0.5	0.5	1	0	1	2	0	1	2	1	1	1	1	32.6 C-	0.737 C	Widen
	2025 Average Month With Project	PM	0.5	0.5	1	0	1	2	0	1	2	1	1	1	1	30.7 C-	0.763 C	Widen
1. Stanfield Cutoff (NS) and North Shore	2025 Peak Month Without Project	AM	1	1	0	1	1	0	1	1	0	1	0	0	0	12.0 B+	0.456 A+	Existing
	2025 Peak Month Without Project	PM	1	1	0	1	1	0	1	1	0	1	0	0	0	17.8 B-	0.359 A+	Existing
	2025 Peak Month With Project	AM	1	1	0	1	1	0	1	1	0	1	0	0	0	12.2 B+	0.456 A+	Existing
	2025 Peak Month With Project	PM	1	1	0	1	1	0	1	1	0	1	0	0	0	19.3 B-	0.359 A+	Existing
2. Stanfield Cutoff (NS) and Big Bear Blvd. (EW)	2025 Peak Month Without Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	1	86.9 F+	1.110 F-	Existing
	2025 Peak Month Without Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	1	119.0 F-	1.250 F-	Existing
	2025 Peak Month With Project	AM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	1	90.4 F	1.122 F-	Existing
	2025 Peak Month With Project	PM	0.5	0.5	1	1	0	1	1	1	1	1	1	1	1	121.1 F-	1.255 F-	Existing
	2025 Peak Month Without Project	AM	0.5	0.5	1	0	1	2	0	1	2	0	1	1	1	37.9 D+	0.846 D	Widen
	2025 Peak Month Without Project	PM	0.5	0.5	1	0	1	2	0	1	2	0	1	1	1	36.1 D+	0.872 D	Widen
	2025 Peak Month With Project	AM	0.5	0.5	1	0	1	2	0	1	2	0	1	1	1	39.4 D+	0.860 D	Widen
	2025 Peak Month With Project	PM	0.5	0.5	1	0	1	2	0	1	2	0	1	1	1	37.1 D+	0.877 D-	Widen

NOTES
 The Level of Service (LOS) for the Delay Method and Intersection Capacity Utilization Method differ because they are calculated entirely differently and LOS is defined differently. See Appendices for further discussion.

Appendix B of the *Traffic Analysis* report contains the Intersection Delay calculations. An explanation of Intersection Delay and how it is calculated is also included in Appendix B.

PARKING

The portion of State Route 38 that traverses the project site contains a shoulder of varying widths, which allows for temporary and emergency parking.

BIKE ROUTES

The portion of State Route 38 that traverses the project site does not include any County designated bike routes.

TRANSIT

The portion of State Route 38 that traverses the project site does not include any public transit facilities (i.e., bus turnouts).

EXISTING LEVEL OF SERVICE

From the Intersection Delay analysis, the intersection Level of Service (LOS) can be determined. LOS is directly related to Intersection Delay. Table 5.5-4, *Level of Service Description For Delay Method (1997 Methodology)*, shows how LOS is related to Intersection Delay, and describes LOS. Existing intersections in the vicinity of the site currently operate a LOS D capacity or better based on delay. However, the intersection of Stanfield Cutoff and Big Bear Boulevard currently operates at an intersection capacity utilization (ICU) greater than 100 percent in the peak month weekday evening peak hour.

**Table 5.5-4
Level of Service Description for Delay Method (1997 Methodology)**

Level of Service	Description	Stopped Delay Per Vehicle (Seconds)
A	Level of Service 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 to 10.0
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	10.1 to 20.0
C	Level of Service generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.1 to 35.0
D	Level of Service 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.	35.1 to 55.0
E	Level of Service E is 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.	55.1 to 80.0
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival 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.	80.1 +
Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 1997, pages 9-6 to 9-7.		

IMPACTS

SIGNIFICANCE CRITERIA

The traffic issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act (CEQA) and the San Bernardino County Congestion Management Program (CMP). The County of San Bernardino is the lead agency responsible for preparation of the traffic impact analysis, in accordance with both CEQA and CMP authorizing legislation.

Environmental impact thresholds as indicated in Appendix G, *Initial Study Checklist*, of the CEQA Guidelines were also used as significance thresholds in this analysis. As such, the project would create a significant impact if it would cause one or more of the following to occur:

- 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) (refer to Impact Statements 5.5-1, 5.5-2 and 5.5-3);
- Exceed, either individually or cumulatively, a LOS standard established by the County CMP agency for designated roads or highways (refer to Impact Statements 5.5-1, 5.5-2 and 5.5-3);
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks (refer to Section 10.0, *Effects Found Not To Be Significant*);
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (refer to Impact Statement 5.5-4);
- Result in inadequate emergency access (refer to Impact Statement 5.5-4);
- Result in inadequate parking capacity (refer to Impact Statement 10.0, *Effects Found Not To Be Significant*); and/or
- Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) (refer to Section 10.0, *Effects Found Not To Be Significant*).

CONGESTION MANAGEMENT PROGRAM (CMP) METHODOLOGY

California legislation requires that a Traffic Impact Analysis (TIA) be prepared for new development. The TIA is prepared to monitor and fix traffic problems anticipated by new development.

The general approach for conducting a TIA is to count existing weekday peak hour traffic and determine the percent of roadway capacity currently used. The percentage growth in traffic is accounted for and added to existing traffic and the percent of roadway capacity used is again determined. Then, the project traffic is added and the percent of roadway capacity used is again determined. If the new project adds traffic to an overcrowded facility, then the new project has to mitigate the traffic impact so that the facility operates at a level which is no worse than before the project traffic was added.

In San Bernardino County, a project requires a TIA if it generates more than 250 new peak hour trips. The Moon Camp project would generate 93 new peak hour trips (approximately). Although this project does not generate 250 new peak hour trips, the County of San Bernardino has requested that the SANBAG TIA requirements be met, with one exception. That exception is that engineering judgment can be used for determining the project's peak hour traffic distribution rather than determining the traffic distribution using the East Valley Traffic Model.

PRESCRIBED METHODOLOGY FOR A TRAFFIC IMPACT ANALYSIS (TIA)

A TIA must include all monitored intersections to which the project adds traffic above a certain minimum amount. In San Bernardino County, the monitored intersections are all arterial-to-arterial intersections. The CMP requires that all arterial links and their CMP intersections be included in the analysis when the anticipated project volume equals or exceeds 80 two-way trips in one peak hour. For freeways, it is 100 two-way trips in the peak hour. Based on this requirement and the distribution of project-generated trips, the project-generated arterial link volumes are less than 80 trips on all roadway links and their intersections. Thus, the intersections of Stanfield Cutoff and North Shore Drive, and Stanfield Cutoff and Big Bear Boulevard are not CMP intersections.

If a project adds more traffic than the minimum threshold amount to an intersection, then that intersection has to be analyzed for deficiencies. If the intersection has to be analyzed for deficiencies, then mitigation is required if the existing traffic plus anticipated traffic growth plus project traffic causes the Intersection Delay to go above a certain point.

In San Bernardino County, mitigation is required if the intersection operates at worse than Level of Service C (i.e., Level of Service D), which corresponds to a maximum acceptable delay of 35 seconds for signalized intersections. The TIA guidelines require Level of Service E.

In San Bernardino County, impacted intersections are analyzed using the Delay Methodology and the ICU Methodology. Although the Delay Method is required per TIA guidelines, the ICU Method is also used per TIA requirements to assure that there are no operational problems. An intersection mitigation measure shall either fix the deficiency, or reduce both the delay and ICU so that they are below the level which occurs without the project.

Project traffic is generated using rates and procedures contained in the Institute of Transportation Engineers, *Trip Generation* manual. Project traffic distribution is provided by the reviewing agency or is agreed to in advance of the TIA being prepared. The TIA has to be prepared by a licensed Traffic Engineer.

The traffic analysis has been prepared in accordance with the TIA requirements except as noted. The TIA not only examined the CMP system of roads and intersections, but also other roads and intersections. The project generated traffic was added to intersections, and a full intersection analysis was conducted, even when the project added traffic failed to meet the minimum thresholds that require an intersection analysis.

The *Traffic Analysis* report prepared by Kunzman Associates includes the following: project generated traffic added to intersections and a full intersection analysis, even when the project added traffic failed to meet the minimum thresholds that require an intersection analysis. As stated in the Traffic Analysis report, the County of San Bernardino has requested that the following intersections be analyzed:

- Stanfield Cutoff and North Shore Drive
- Stanfield Cutoff and Big Bear Boulevard

Impacts to traffic and circulation are analyzed below according to topic. Mitigation measures at the end of this Section directly correspond with the identified impact.

Summary of Findings

- For existing traffic conditions, the intersection of Stanfield Cutoff and North Shore Drive operates at Level of Service A capacity based on delay. The intersection of Stanfield Cutoff and Big Bear Boulevard operates at Level of Service E based on Delay, which is unacceptable. The solution is to convert the eastbound right turn lane to an eastbound through lane through the intersection. This may involve widening of the intersection and may involve the taking of right of way.
- For existing plus project traffic conditions, the intersection of Stanfield Cutoff and North Shore Drive operates at Level of Service B capacity based on delay. The intersection of Stanfield Cutoff and Big Bear Boulevard with the recommended mitigation measure operates at Level of Service D based on Delay, which is acceptable for a State Highway. Although based on established threshold of significance criteria, the project has an insignificant traffic impact on Stanfield Cutoff and Big Bear Boulevard, it nevertheless contributes to the utilization deficiency at the weekday evening peak hour.
- After project completion and in the year 2006, the intersection of Stanfield Cutoff and North Shore Drive operates at Level of Service B capacity based on delay. The intersection of Stanfield Cutoff and Big Bear Boulevard with the recommended mitigation measure operates at Level of Service D based on Delay, which is acceptable for a State Highway.

- Although the project does not have a significant impact on the intersection of Stanfield Cutoff and North Shore Drive, this intersection will require a traffic signal by 2025 because of background traffic growth.
- Project-related traffic would not warrant the installation of a traffic signal at any location.

EXISTING CONDITIONS WITH PROJECT TRAFFIC ANALYSIS

5.5-1 *The intersection of Stanfield Cutoff and Big Bear Boulevard currently operates above 100 percent utilization in the peak month weekday evening peak hour. Although the Project does not generate significant traffic volumes, it would contribute to the intersection utilization at the weekday evening peak hour. Pro-rata share payment for intersection improvements to the intersection would reduce project affects to less than significant levels.*

PROJECT TRAFFIC

To estimate project-related traffic volumes at various points on the street network, a three-step process is utilized. First, the traffic that would be generated by the proposed development is determined. Second, the traffic volumes are geographically distributed to major attractions of trips, such as employment centers, commercial centers, recreational areas or residential areas. Finally, the trips are assigned to specific roadways and the project-related traffic volumes are determined on a route-by-route basis.

Traffic Generation

The traffic generated by the project is determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are expressed in terms of trip ends per person, trip ends per employee, trip ends per acre, trip ends per dwelling, or trip ends per thousand square feet of floor space. For instance, if a particular land use generates six outbound trips per acre in the morning peak hour, then six vehicles are expected to leave the site in the morning peak hour for each acre of development.

Significant research efforts have been made by the Institute of Transportation Engineers and others to establish the correlation between trips and land use. From this body of information, trip generation rates have been estimated by Kunzman Associates with reasonable accuracy for various land uses.

Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and our life styles remain similar to what we know today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the

proposed land uses. The trip generation rates are from Trip Generation, Sixth Edition, Institute of Transportation Engineers, 1997.

By multiplying the traffic generation rates by the land use quantities, traffic volumes are determined. Table 5.5-5, *Project Traffic Generation*, shows the traffic generation rates and the peak hour and daily traffic volumes.

**Table 5.5-5
Project Traffic Generation**

Descriptor	Trip Generation Rate	Trips Generated by 92 Dwellings
Units	Dwellings	Dwellings
Daily	9.57	880
Morning Peak Hour - In	0.19	17
Morning Peak Hour - Out	0.56	52
Total	0.75	69
Evening Peak Hour - In	0.65	60
Evening Peak Hour - Out	0.36	33
Total	1.01	93
Source: Trip Generation, 6th Edition, Institute of Transportation Engineers, 1997, Category 210.		

The project also includes 100 boat slips. The boat slips are to be used by residents who live there, and are not expected to generate additional external traffic.

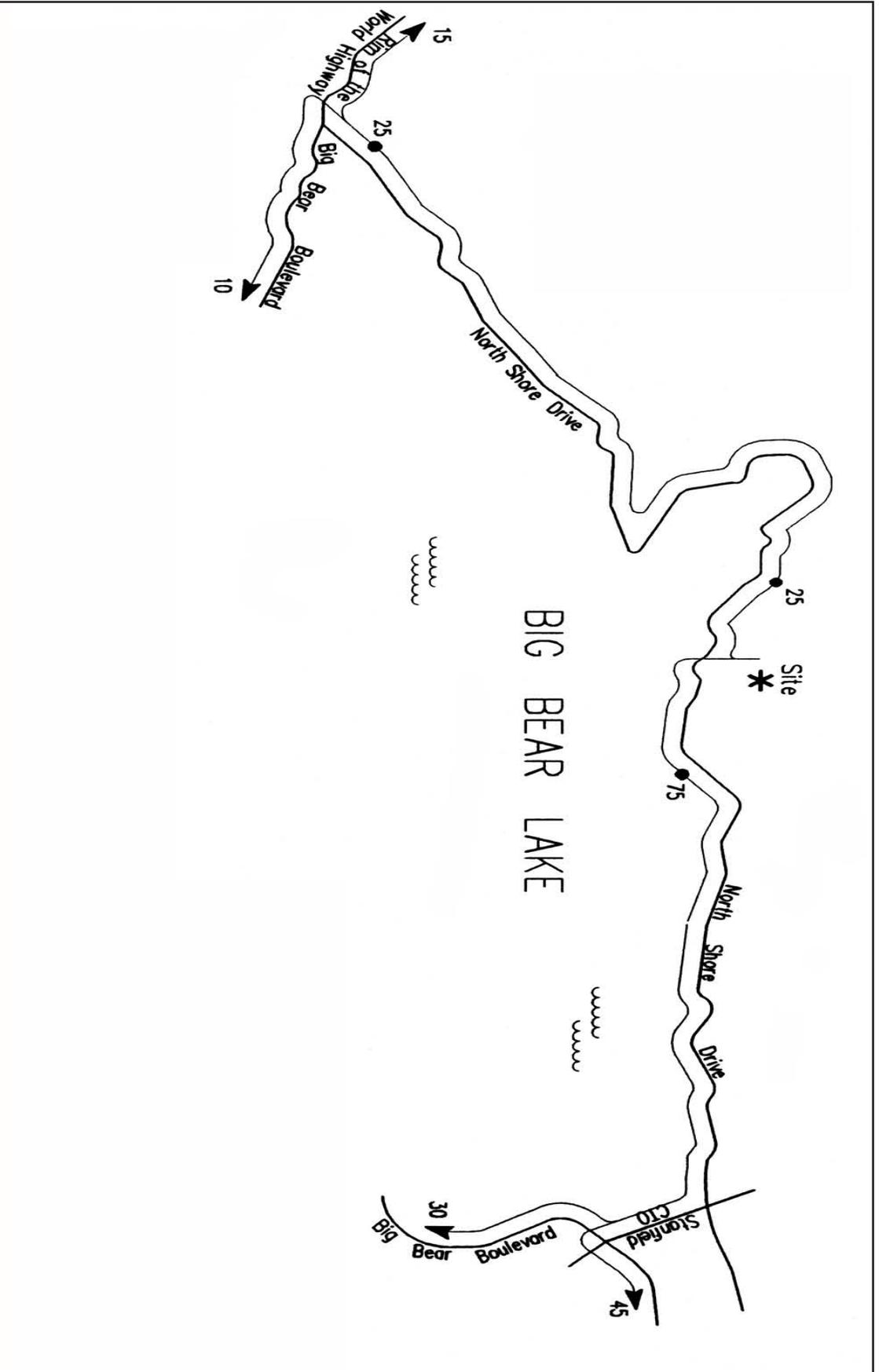
For the purposes of the traffic analysis, it is assumed that the homes are lived in year round by persons who commute to work. This is a maximum, or worst case, scenario. It is likely that some homes would be second homes and that those who do live there would tend to be retired, more than typically found in Southern California.

Traffic Distribution and Assignment

Traffic distribution is the determination of the directional orientation of traffic. It is based on the geographical location of employment centers, commercial centers, recreational areas, or residential area concentrations.

Traffic assignment is the determination of which specific route development traffic would use, once the generalized traffic distribution is determined. The basic factors affecting route selection are minimum time path and minimum distance path.

Exhibit 5.5-5, *Project Traffic Distribution (Weekday Peak Hours)*, contains the directional distribution and assignment of the project traffic for the proposed land uses. As shown on Exhibit 5.5-5, the majority of project traffic distribution (75%) would occur to the east of the project site, along State Route 38. All of the trips



Source: Kunzman Associates, June 25, 2003.



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Project Traffic Distribution (Weekday Peak Hours)

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generated on State Route 38, east of the project site, are distributed to Stanfield Cutoff, then to Big Bear Boulevard. Big Bear Boulevard, east of Stanfield Cutoff, would receive 45 percent of the project-generated traffic, while Big Bear Boulevard, west of Stanfield Cutoff, would receive 30 percent of the project-generated traffic. State Route 38, west of the project site, would receive 25 percent of the project-generated traffic. Traffic from State Route 38, west of the project site would distribute on to Rim of the World Highway (15 percent) and Big Bear Boulevard (10 percent).

Project-Related Traffic

Based on the identified traffic generation and distributions, project related daily traffic volumes are shown in Exhibit 5.5-6, *Project Generated Daily Traffic Volumes*. As shown on Exhibit 5.5-6, the majority of project-generated traffic (660 trips) would be distributed to the east of the project site, along State Route 38. All of the trips generated on State Route 38, east of the project site, are distributed to Stanfield Cutoff, then to Big Bear Boulevard. Big Bear Boulevard, east of the project site, would receive 396 trips from Stanfield Cutoff, while Big Bear Boulevard, west of Stanfield Cutoff, would receive 264 trips from Stanfield Cutoff. State Route 38, west of the project site, would receive 220 project-generated trips. Trips from State Route 38, west of the project site would be distributed to Rim of the World Highway (132 trips) and Big Bear Boulevard (88 trips).

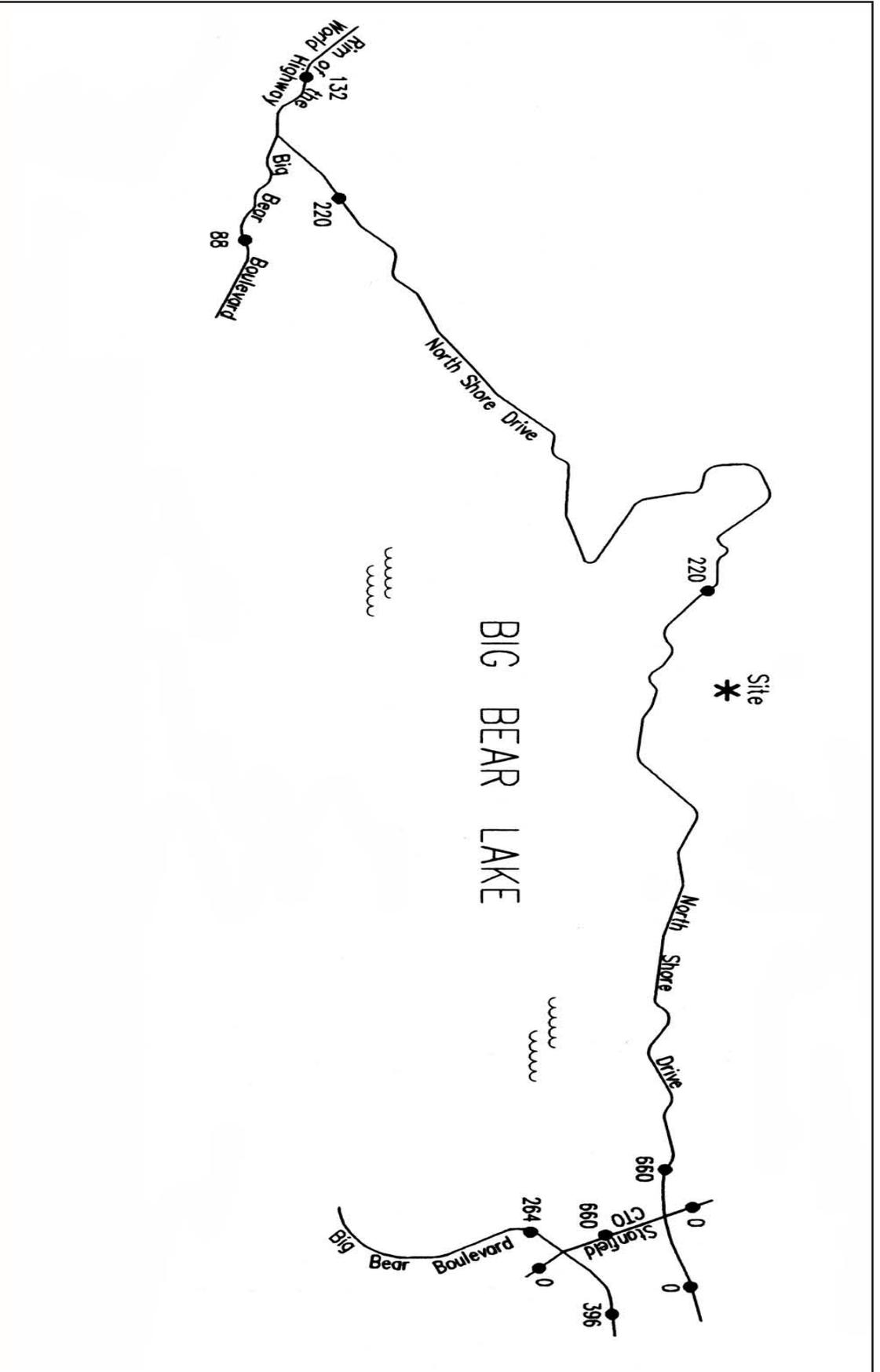
EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Once the project-related traffic is assigned to the existing street network and added to existing volumes, the traffic impact can be assessed. Exhibit 5.5-7, *Existing Plus Project Daily Traffic Volumes – Peak Month*, illustrates the existing plus project traffic conditions for the peak month. As shown on Exhibit 5.5-7, the traffic volume on State Route 38, east of the project site and west of Stanfield Cutoff, is 5,417. The traffic volume on Stanfield Cutoff is 6,292, which includes traffic distributed from State Route 38 and Big Bear Boulevard. The highest traffic volumes occur on Big Bear Boulevard, with volumes of 20,767 west of Stanfield Cutoff, and volumes of 18,500 east of Stanfield Cutoff. Traffic volumes along State Route 38 (east of Stanfield Cutoff) and Stanfield Cutoff (north of State Route 38 and south of Big Bear Boulevard) would not be impacted by project generated traffic (refer to Exhibit 5.5-6).

The *Traffic Analysis* report prepared by Kunzman Associates contains plots of the existing plus project peak hour intersection turning movement volumes and number of intersection through and turning movement lanes. Additionally, the same plots show the peak hour leg approach volumes and two-way peak hour leg volumes.

Traffic Signal Warrants

Traffic signal warrants have been adopted by the Federal Highway Administration and Caltrans. These warrants are based upon the eight highest hour volumes in a day. It is assumed by Caltrans that the eighth highest hour is 62.5 percent of the



Source: Kunzman Associates, June 25, 2003.

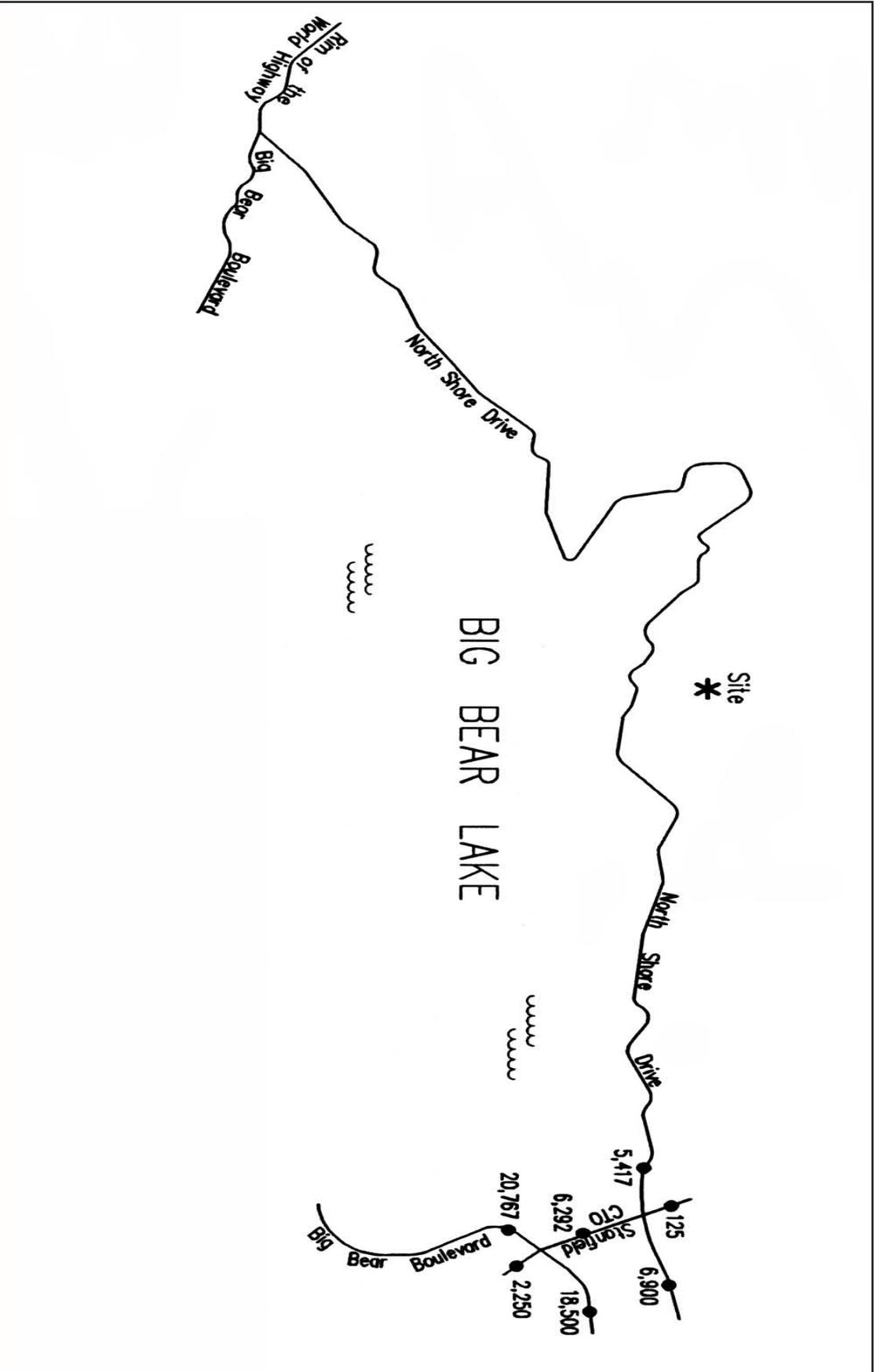


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Project Generated Daily Traffic Volumes

MOON CAMP TT #16136
ENVIRONMENTAL IMPACT REPORT



Source: Kunzman Associates, June 25, 2003.



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Existing Plus Project Daily Traffic Volumes - Peak Month

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ENVIRONMENTAL IMPACT REPORT

peak hour, and the peak hour is generally 10 percent of the daily traffic. Thus, the signal warrants can also be expressed in terms of daily traffic volumes. Rural traffic volume warrants are utilized when the 85th percentile speed of the major street traffic exceeds 40 miles per hour or when the intersection lies within the built up area of an isolated community having a population of less than 10,000. Table 5.5-6, *Traffic Signal Warrants (Based on Estimated Average Daily Traffic)*, shows the signal warrants in terms of daily traffic volumes.

When calculating signal volume warrants, the volumes of both the major and minor street must meet or exceed those listed in Table 5.5-6. Determining the major street daily signal warrant volume involves calculating the number of daily vehicles approaching the intersection on both major street legs; usually the daily approach volume is 50 percent of the street's daily two-way volume on each leg. Finding the minor street daily signal warrant volume involves calculating the number of daily vehicles approaching the intersection on only the highest volume leg; usually the daily approach volume is 50 percent of the street's two-way daily volume. If the minor street forms a tee intersection with the major street, then the minor street volume is the highest volume because there is no other volume.

A traffic signal would not be warranted at the intersection of Stanfield Cutoff and North Shore Drive based on rural warrants. Rural warrants are applicable for rural areas and urban roadways with speeds over 40 miles per hour.

Existing Plus Project Intersection Delay and Level of Service

The Intersection Delay for the existing plus project traffic conditions have been calculated and are shown in Table 5.5-3. The Kunzman traffic report contains the Intersection Delay calculations. From the Intersection Delay analysis, the intersection Level of Service (LOS) can be determined. Table 5.5-4 shows how LOS is related to Intersection Delay, and describes LOS.

From Table 5.5-2 and 5.5-3, it can be seen that all intersections in the vicinity of the site operate at a LOS D or better for existing plus project peak hour traffic conditions, based on Delay. However, it should be noted that the intersection of Stanfield Cutoff and Big Bear Boulevard currently operates at an intersection capacity utilization greater than 100 percent in the peak month weekday evening peak hour. The solution is to convert the eastbound right turn lane to an eastbound through lane through the intersection. Although the project itself does not have a significant impact on this intersection it does contribute to an existing deficiency at the intersection. Pro-rata share payment for improvements to the intersection would reduce project affects to less than significant. It therefore is not required to mitigate this deficiency.

The Kunzman Associates traffic study references the need for the eastbound right turn lane to be converted to a through lane, which may require widening and an additional take of right of way. The widening and additional right of way may be needed before or after the intersection, or both. Whether widening and a take of right of way is required depends on lane widths and taper lengths required by Caltrans.

Table 5.5-6
Traffic Signal Warrants
(Based on Estimated Average Daily Traffic)

Signal Warrant	Minimum Requirements Estimated Average Daily Traffic (EADT)																																	
Urban Rural Use Rural if critical speed equals or exceed 40 MPH																																		
1. Minimum Vehicular Satisfied _____ Not Satisfied _____	Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)																															
Number of lanes for moving traffic on each approach																																		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Major Street</td> <td style="width: 50%; border: none;">Minor Street</td> <td style="width: 10%; border: none;">Urban</td> <td style="width: 10%; border: none;">Rural</td> <td style="width: 10%; border: none;">Urban</td> <td style="width: 10%; border: none;">Rural</td> </tr> <tr> <td style="border: none;">1</td> <td style="border: none;">1</td> <td style="border: none;">8,000</td> <td style="border: none;">5,600 <<<</td> <td style="border: none;">2,400</td> <td style="border: none;">1,680 <<<</td> </tr> <tr> <td style="border: none;">2 or more</td> <td style="border: none;">2 or more</td> <td style="border: none;">9,600</td> <td style="border: none;">6,720</td> <td style="border: none;">2,400</td> <td style="border: none;">1,680</td> </tr> <tr> <td style="border: none;">2 or more</td> <td style="border: none;">2 or more</td> <td style="border: none;">9,600</td> <td style="border: none;">6,720</td> <td style="border: none;">3,200</td> <td style="border: none;">2,240</td> </tr> <tr> <td style="border: none;">1</td> <td style="border: none;">1</td> <td style="border: none;">8,000</td> <td style="border: none;">5,600</td> <td style="border: none;">3,200</td> <td style="border: none;">2,240</td> </tr> </table>	Major Street	Minor Street	Urban	Rural	Urban	Rural	1	1	8,000	5,600 <<<	2,400	1,680 <<<	2 or more	2 or more	9,600	6,720	2,400	1,680	2 or more	2 or more	9,600	6,720	3,200	2,240	1	1	8,000	5,600	3,200	2,240				
Major Street	Minor Street	Urban	Rural	Urban	Rural																													
1	1	8,000	5,600 <<<	2,400	1,680 <<<																													
2 or more	2 or more	9,600	6,720	2,400	1,680																													
2 or more	2 or more	9,600	6,720	3,200	2,240																													
1	1	8,000	5,600	3,200	2,240																													
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied _____	Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)																															
Number of lanes for moving traffic on each approach																																		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Major Street</td> <td style="width: 50%; border: none;">Minor Street</td> <td style="width: 10%; border: none;">Urban</td> <td style="width: 10%; border: none;">Rural</td> <td style="width: 10%; border: none;">Urban</td> <td style="width: 10%; border: none;">Rural</td> </tr> <tr> <td style="border: none;">1</td> <td style="border: none;">1</td> <td style="border: none;">12,000</td> <td style="border: none;">8,400 <<<</td> <td style="border: none;">1,200</td> <td style="border: none;">850 <<<</td> </tr> <tr> <td style="border: none;">2 or more</td> <td style="border: none;">2 or more</td> <td style="border: none;">14,400</td> <td style="border: none;">10,080</td> <td style="border: none;">1,200</td> <td style="border: none;">850</td> </tr> <tr> <td style="border: none;">2 or more</td> <td style="border: none;">2 or more</td> <td style="border: none;">14,400</td> <td style="border: none;">10,080</td> <td style="border: none;">1,600</td> <td style="border: none;">1,120</td> </tr> <tr> <td style="border: none;">1</td> <td style="border: none;">1</td> <td style="border: none;">12,000</td> <td style="border: none;">8,400</td> <td style="border: none;">1,600</td> <td style="border: none;">1,120</td> </tr> </table>	Major Street	Minor Street	Urban	Rural	Urban	Rural	1	1	12,000	8,400 <<<	1,200	850 <<<	2 or more	2 or more	14,400	10,080	1,200	850	2 or more	2 or more	14,400	10,080	1,600	1,120	1	1	12,000	8,400	1,600	1,120				
Major Street	Minor Street	Urban	Rural	Urban	Rural																													
1	1	12,000	8,400 <<<	1,200	850 <<<																													
2 or more	2 or more	14,400	10,080	1,200	850																													
2 or more	2 or more	14,400	10,080	1,600	1,120																													
1	1	12,000	8,400	1,600	1,120																													
3. Combination Satisfied _____ Not Satisfied _____ No one warrant satisfied but following warrants fulfilled 80% or more <table style="width: 100%; margin-top: 10px; border: none;"> <tr> <td style="width: 50%; text-align: center;">_____</td> <td style="width: 50%; text-align: center;">_____</td> </tr> <tr> <td style="width: 50%; text-align: center;">1</td> <td style="width: 50%; text-align: center;">2</td> </tr> </table>	_____	_____	1	2	2 Warrants		2 Warrants																											
_____	_____																																	
1	2																																	
NOTES: 1. Heavier left turn movement from the major street may be included with minor street volume if a separate signal phase is to be provided for the left-turn movement. 2. To be used only for new intersections or other locations where actual traffic volumes cannot be counted. <<<< These are the warrant volumes that apply to Stanfield Cutoff and North Shore Drive.																																		
Source: Caltrans, Traffic Manual, page 9-8.																																		

The available right-of-way in the mountains is restricted, the topography is difficult, and in many situations there are large pine trees in a location that may preclude the use of typical design criteria. There needs to be flexibility in design requirements in the mountains. Whatever design is accepted needs to meet minimum acceptable criteria which may be less than normal criteria.

The geometrics required is a Caltrans decision, and is subject to agreement by the County of San Bernardino.

YEAR 2006 TRAFFIC ANALYSIS

5.5-2 *Project implementation, with year 2006 traffic conditions, would result in an increase in traffic volumes. Analysis has concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff and Big Bear Boulevard to a less than significant level.*

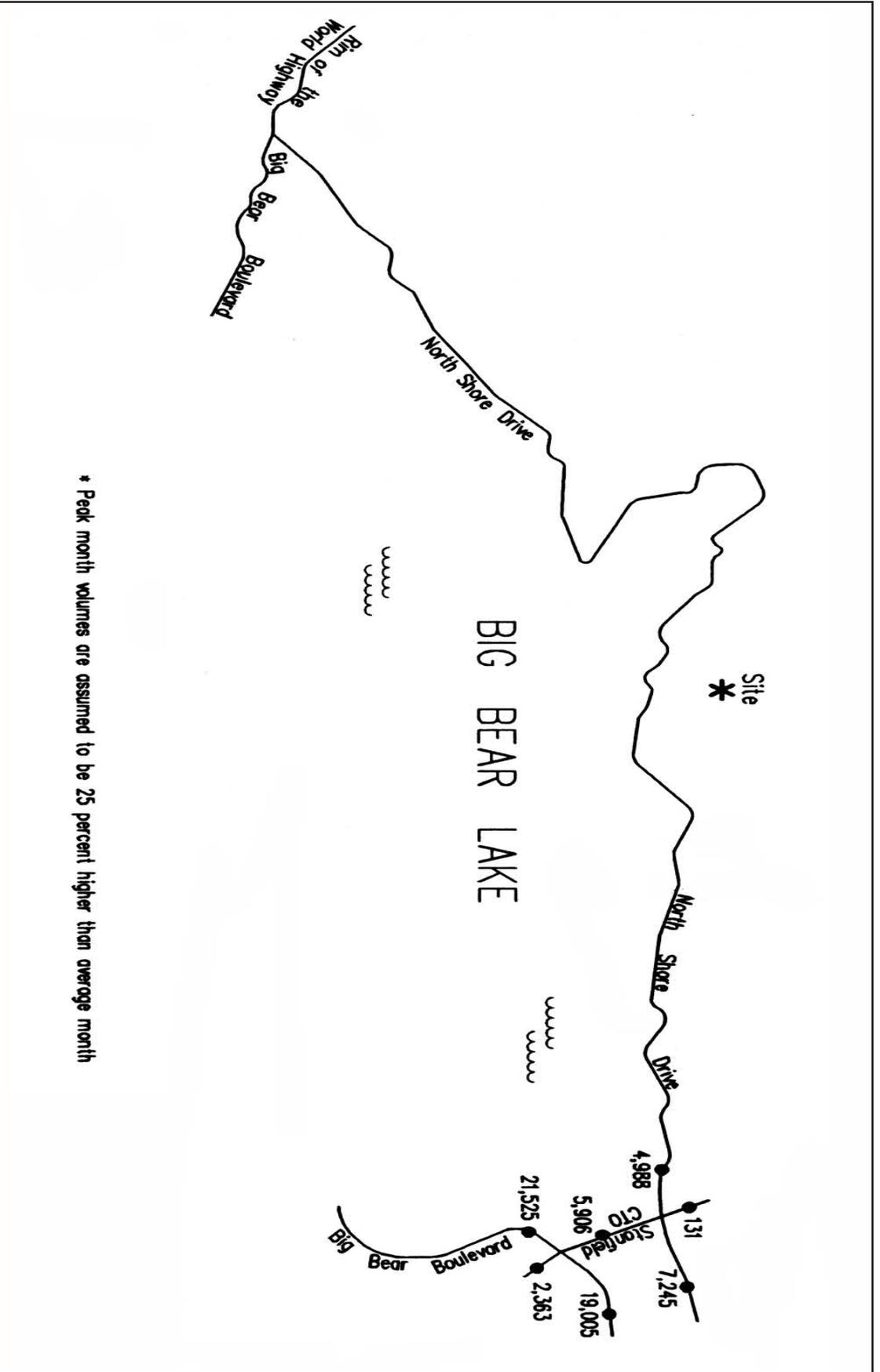
To assess future traffic conditions, project traffic is combined with existing traffic and traffic from other surrounding development. The *Traffic Analysis* report contains analysis on the “existing plus other development traffic conditions” in 2006 (refer to Section 7 of the *Traffic Analysis* report). Exhibit 5.5-8, *Year 2006 Daily Traffic Volumes - Peak Month*, illustrates traffic conditions including other anticipated development with the project. Table 5.5-7, *Daily Leg Volume Calculations*, shows the calculations of intersection leg daily traffic volumes. To account for growth which can be expected in the area, a growth rate of 1 percent per year compounded annually for five years is assumed. The total compounded growth over 5 years is 5 percent. The basis of this growth rate assumption is the County of San Bernardino.

As shown on Exhibit 5.5-8, the daily traffic volumes on State Route 38, east of the project site and west of Stanfield Cutoff, is 4,988. The volumes on Stanfield Cutoff are 5,906, which include traffic distributed from State Route 38 and Big Bear Boulevard. The highest traffic volumes are on Big Bear Boulevard, with volumes of 21,525 west of Stanfield Cutoff and volumes east of Stanfield Cutoff of 19,005.

The Kunzman traffic report contains plots of the cumulative conditions peak hour intersection turning movement volumes and number of intersection through and turning movement lanes. Additionally, the same plots show the peak hour leg approach volumes and two-way peak hour leg volumes.

Traffic Signal Warrants - Year 2006

Traffic signals would not be warranted at the intersection of Stanfield Cutoff and North Shore Drive based on Rural Warrants. Refer to discussion under “Traffic Signal Warrants” under Impact Statement 5.5-1 for the applicability of Rural Warrants.



* Peak month volumes are assumed to be 25 percent higher than average month

Source: Kunzman Associates, June 25, 2003.



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Year 2006 Daily Traffic Volumes - Peak Month

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**Table 5.5-7
Daily LEG Volume Calculations**

Intersection	Intersection Leg	Project Added Daily Leg Volume	Existing Year 2001		Year 2006		Year 2025	
			Existing Daily Volumes	With Project Volumes	Existing Plus Background Growth Daily Volumes	With Project Volumes	Existing Plus Background Growth Daily Volumes	With Project Volumes
1. Stanfield Cutoff (NS) and North Shore Drive (EW)	North	0	100	100	105	105	124	124
	South	667	4,500	5,167	4,725	5,392	5,580	6,247
	East	0	4,500	4,500	4,725	4,725	5,580	5,580
	West	667	2,100	2,767	2,205	2,872	2,604	3,271
Average Month								
2. Stanfield Cutoff (NS) and Big Bear Boulevard (EW)	North	667	4,500	5,167	4,725	5,392	5,580	6,247
	South	0	1,800	1,800	1,890	1,890	2,232	2,232
	East	400	13,800	14,200	14,490	14,890	17,112	17,512
	West	267	16,900	17,167	17,745	18,012	20,956	21,223
Average Month								
1. Stanfield Cutoff (NS) and North Shore Drive (EW)	North	0	125	125	131	131	155	155
	South	667	6,000	6,667	6,300	6,967	7,440	8,107
	East	0	6,000	6,000	6,300	6,300	7,440	7,440
	West	667	2,700	3,367	2,835	3,502	3,348	4,015
Peak Month								
2. Stanfield Cutoff (NS) and Big Bear Boulevard (EW)	North	667	6,000	6,667	6,300	6,967	7,440	8,107
	South	0	2,200	2,200	2,310	2,310	2,728	2,728
	East	400	17,300	17,700	18,165	18,565	21,452	21,852
	West	267	21,100	21,367	22,155	22,422	26,164	26,431
Peak Month								

NOTE: Background Growth Rate is assumed to be as follows in percent: 1.000

From Year 2001 to Year 2006 is 5 years. the calculated simple growth factor is : 1.050

From Year 2001 to Year 2025 is 24 years. The calculated simple growth factor is: 1.240

It should be noted that signals should be installed only when warranted and that installation of unwarranted signals can increase accident potential, energy consumption, and air pollutant emissions, while costing governmental jurisdictions approximately \$500 per month for maintenance and utilities.

Existing Plus Other Development Level of Service – Year 2006

From the Intersection Delay analysis, the intersection Level of Service (LOS) can be determined. LOS is directly related to Intersection Delay. Table 5.5-2 shows how LOS is related to Intersection Delay, and describes LOS.

From Table 5.5-1, it can be seen that all intersections in the vicinity of the site operate at a LOS E or better for existing plus other development peak hour traffic conditions based on delay. However, as previously noted, the intersection of Stanfield Cutoff and Big Bear Boulevard currently operates at an intersection capacity utilization greater than 100 percent in the peak month weekday evening peak hour. As stated under the existing plus project impact analysis, the solution is to convert the eastbound right turn lane to an eastbound through lane through the intersection.

Existing Plus Project Plus Other Development Traffic Conditions – Year 2006

Additional development is presently planned in the vicinity of the site. To assess future traffic conditions, project traffic is combined with existing traffic and traffic from other surrounding development. Exhibit 5.9-9, *Year 2006 Plus Project Daily Traffic Volumes – Peak Month*, illustrates traffic conditions including other planned development with the project.

As shown on Exhibit 5.5-9, *Year 2006 Plus Project Daily Traffic Volumes*, on State Route 38, east of the project site and west of Stanfield Cutoff, is 5655. The volumes on Stanfield Cutoff are 6573 which include traffic distributed from State Route 38 and Big Bear Boulevard. The highest traffic volumes are on Big Bear Boulevard with volumes of 21,792 west of Stanfield Cutoff and volumes east of Stanfield Cutoff of west of Stanfield Cutoff and volumes east of Stanfield Cutoff of 19,405.

Cumulative Conditions Level of Service – Year 2006

From the Intersection Delay analysis, the intersection Level of Service (LOS) can be determined. LOS is directly related to Intersection Delay. Table 5.5-4 shows how LOS is related to Intersection Delay, and describes LOS.

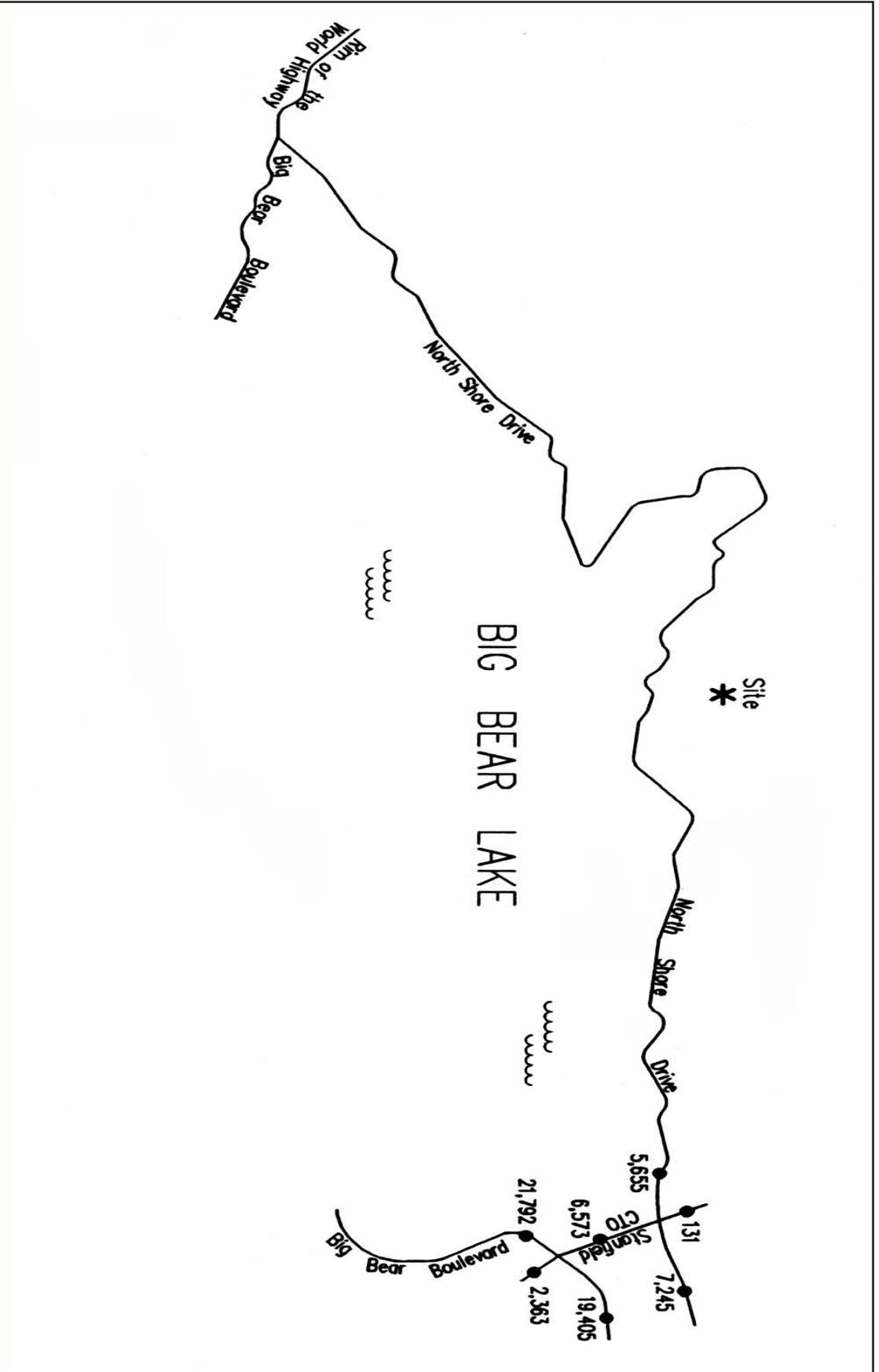
From Table 5.5-1, it can be seen that all intersections in the vicinity of the site operate at LOS F or better for cumulative peak hour traffic conditions based on delay. However, as noted, the intersection of Stanfield Cutoff and Big Bear Boulevard currently operates at an intersection capacity utilization greater than 100 percent in the peak month weekday evening peak hour. The solution is to convert the eastbound right turn lane to an eastbound through lane through the intersection.

YEAR 2025 TRAFFIC ANALYSIS

5.5-3 *Project implementation, with year 2025 traffic conditions, would result in an increase in traffic volumes. Analysis has concluded that implementation of recommended mitigation measures would reduce impacts to the intersection of Stanfield Cutoff/Big Bear Boulevard and Stanfield Cutoff/North Shore Drive to a less than significant level.*

To assess future traffic conditions, project traffic is combined with existing traffic and traffic from other surrounding development. Exhibit 5.5-10, *Year 2025 Plus Project Daily Traffic Volumes - Peak Month*, illustrates traffic conditions including other anticipated development with the project. Table 5.5-8 shows the calculations of intersection leg daily traffic volumes. To account for growth which can be expected in the area, a growth rate of one percent per year compounded annually for 24 years has been assumed. The total compounded growth over 24 years is 24 percent. The basis of this growth rate assumption can be found in Table 5.5-1. To note, the *Traffic Analysis* report contains analysis on the “existing plus other development traffic conditions” in 2025 (refer to Section 9 of the *Traffic Analysis* report).

As shown on Exhibit 5.5-10, the traffic volume on State Route 38, east of the project site and west of Stanfield Cutoff, is 5,890. The traffic volume on Stanfield Cutoff is 6,975, which includes traffic distributed from State Route 38 and Big Bear Boulevard.



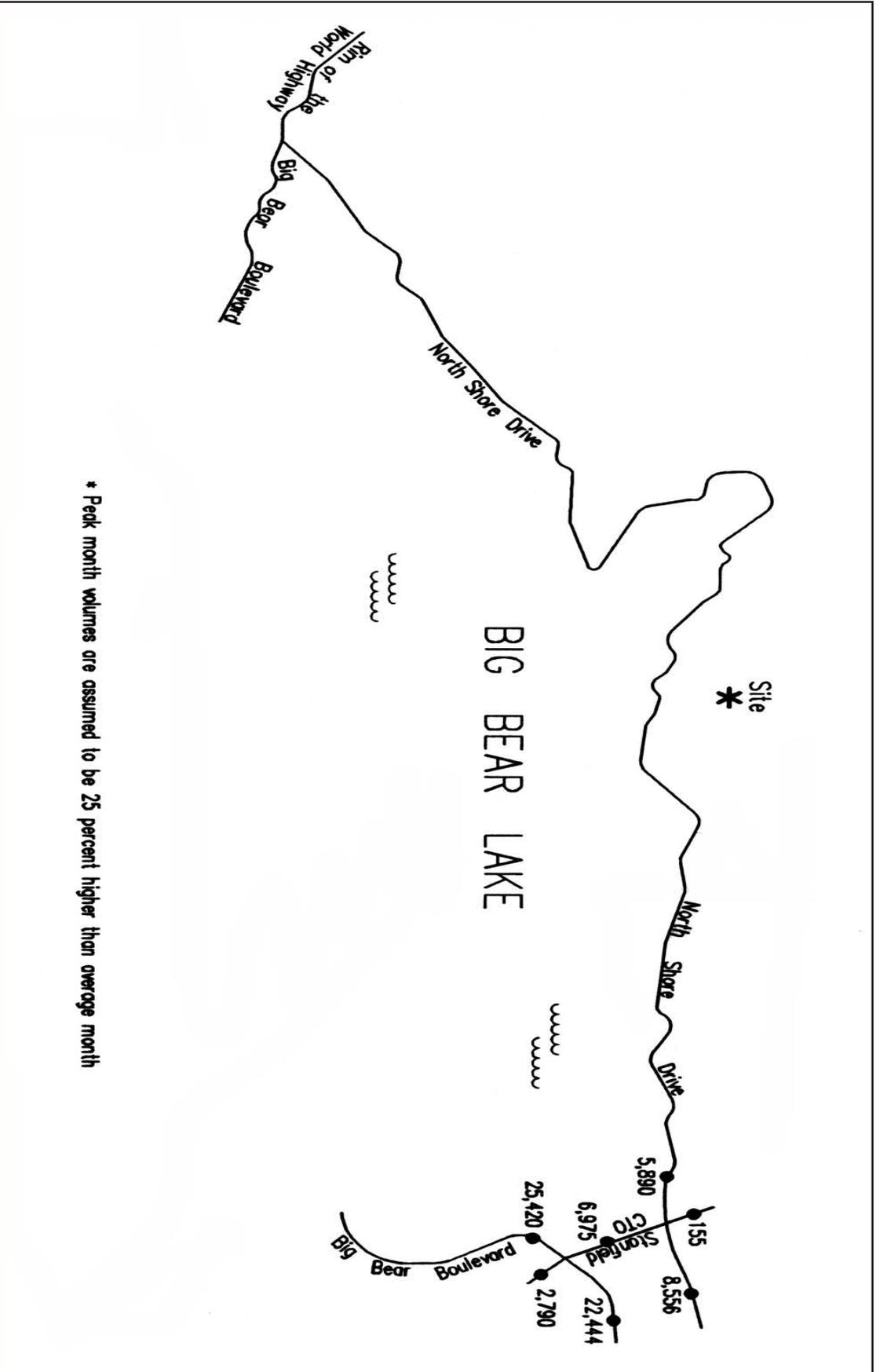
Source: Kunzman Associates, June 25, 2003.



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Year 2006 Plus Project Daily Traffic Volumes - Peak Month

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* Peak month volumes are assumed to be 25 percent higher than average month

Source: Kunzman Associates, June 25, 2003.



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Year 2025 Daily Traffic Volumes - Peak Month

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The highest traffic volumes are contained on Big Bear Boulevard, with a traffic volume of 25,420 west of Stanfield Cutoff, and a traffic volume of 22,444 east of Stanfield Cutoff.

The Kunzman traffic report contains plots of the cumulative conditions peak hour intersection turning movement volumes and number of intersection through and turning movement lanes. Additionally, the same plots show the peak hour leg approach volumes and two-way peak hour leg volumes.

Traffic Signal Warrants - Year 2025

Traffic signals would be required at the intersection of Stanfield Cutoff and North Shore Drive based on Rural Warrants. The applicability of Rural Warrants was previously discussed. Refer to discussion under “Traffic Signal Warrants” under Impact Statement 5.5-2 for the applicability of Urban Warrants.

Cumulative Conditions Intersection Delay and Level of Service - Year 2025

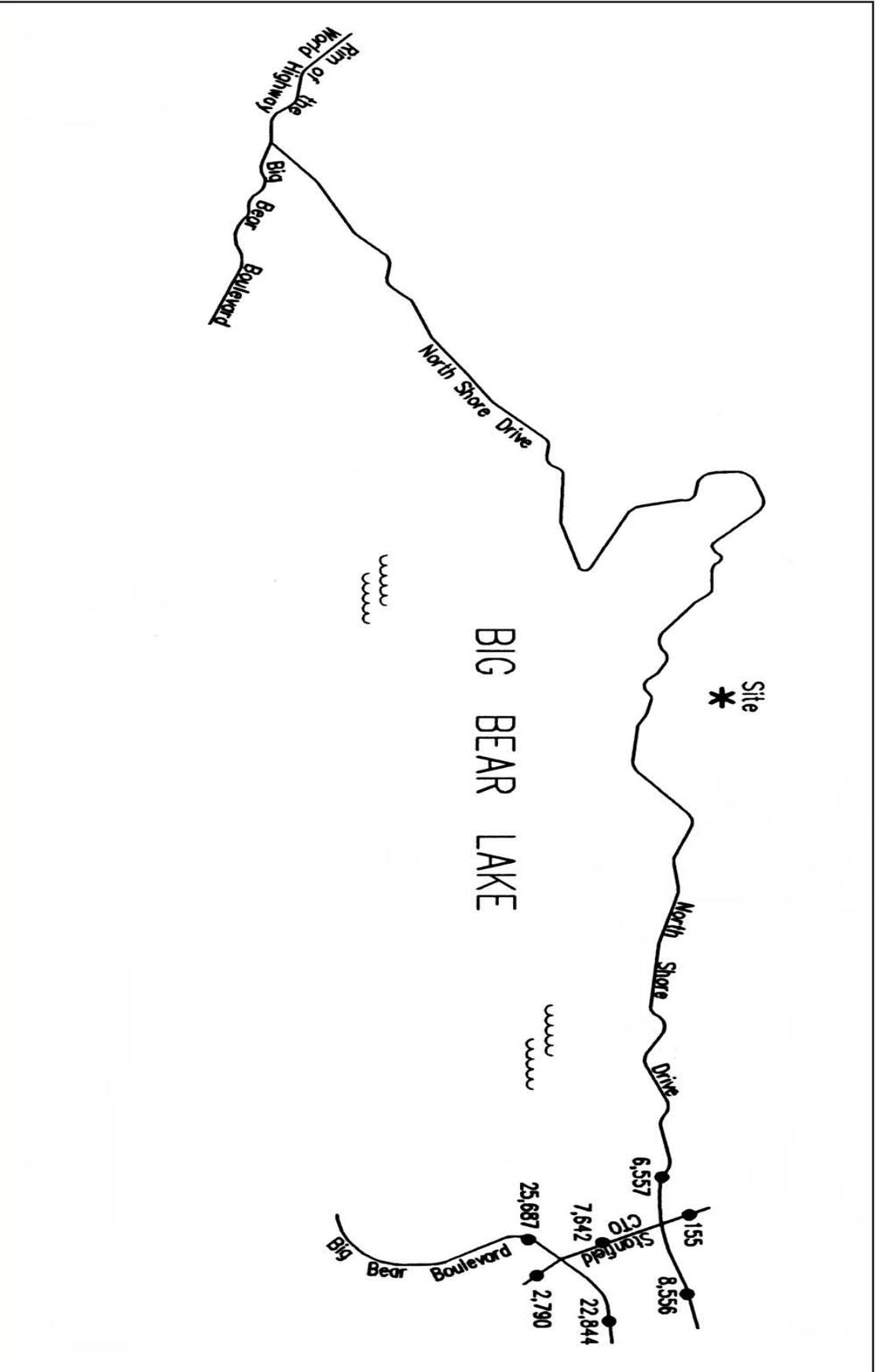
Table 5.5-3 shows the Intersection Delay for cumulative traffic conditions in 2025. Appendix B of the *Traffic Analysis* report contains the Intersection Delay calculations. From the Intersection Delay analysis, the intersection Level of Service (LOS) can be determined. Table 5.5-4 shows how LOS is related to Intersection Delay, and describes LOS. As shown in Table 5.5-3, the analysis for Year 2025 “Peak Month With Project” traffic conditions evaluates the intersection of Stanfield Cutoff/Big Bear Boulevard under four different scenarios. The four scenarios are as follows:

- AM Peak Hour - Existing Lane Configuration
- PM Peak Hour – Restriped Lane Configuration
- AM Peak Hour – Existing Lane Configuration
- PM Peak Hour – Restriped Lane Configuration

As shown in Table 5.5-2 and 5.5-3, the intersection of Stanfield Cutoff/Big Bear Boulevard would operate at a LOS E or better for existing plus other development peak hour traffic conditions based on delay. However, as previously noted, the intersection of Stanfield Cutoff and Big Bear Boulevard currently operates at an intersection capacity utilization greater than 100 percent in the peak month weekday evening peak hour. The solution is to convert the eastbound right turn lane to an eastbound through lane through the intersection.

Existing Plus Project Plus Other Development Traffic Conditions – Year 2005

Additional development is presently planned in the vicinity of the site. To assess future traffic conditions, project traffic is combined with existing traffic and traffic from other surrounding development. Exhibit 5.5-11, *Year 2025 Plus Project Daily Traffic Volumes – Peak Month*, illustrates traffic conditions including other planned development with the project.



Source: Kunzman Associates, June 25, 2003.



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Year 2025 Plus Project Daily Traffic Volumes - Peak Month

MOON CAMP TT #16136
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As shown on Exhibit 5.5-11, Year 2025 Plus Project Daily Traffic Volumes on State Route 38, east of the Project site and west of Stanfield Cutoff is 6,557. The volumes on Stanfield Cutoff are 7,642 which include traffic distributed from State Route 38 and Big Bear Boulevard with volumes of 25,687 west of Stanfield Cutoff and volumes east of Stanfield Cutoff of 22,844.

Appendix B contains the Intersection Delay calculations. An explanation of Intersection Delay and how it is calculated is also included in Appendix B.

Cumulative Conditions Levels of Service – 2025

From the Intersection Delay analysis, the intersection Level of Service (LOS) can be determined. LOS is directly related to Intersection Delay. Table 5.5-4 shows how LOS is related to Intersection Delay, and describes LOS.

From Table 5.5-3, it can be seen that the intersection of Stanfield Cutoff and Big Bear Boulevard operates at LOS F, with or without the project, without mitigation measures, whether using the Delay method or the ICU method. To accommodate year 2006 traffic, it is recommended that the eastbound right turn lane be converted to an eastbound through lane through the intersection. This mitigation measure also solves the 2025 traffic conditions.

The project does not have a significant impact on this intersection based on the thresholds of significance described. It therefore is not required to help mitigate this deficiency.

Traffic Signal Warrants – Year 2025

Traffic signals will be warranted with or without the project at the intersection of Stanfield Cutoff and North Shore Drive based on Rural Warrants. The applicability of Rural Warrants was previously discussed.

Pro Rata Share of Off-Site Improvement Costs

Although the project does not significantly impact the intersection of Stanfield Cutoff and North Shore Drive, nor the intersection of Stanfield Cutoff and Big Bear Boulevard per the thresholds discussed, the County of San Bernardino has requested that a pro-rata share of the cost of offsite mitigation measures be calculated.

Specifically, for Stanfield Cutoff and North Shore Drive, the traffic signal is estimated by the County to cost \$250,000. The sum of the peak month leg volumes today is 17,400. The sum of the leg volumes in 2025 without the project is 21,576. The project adds 1220 vehicles per day to the intersection leg volumes. The project's pro rata share is calculated as follows: $1220 / (21,576 + 1220 - 17,400)$, or 22.61 percent of \$250,000. The project's pro-rata share of the off-site improvement cost is \$56,523.

Specifically, for Stanfield Cutoff and Big Bear Boulevard, the eastbound right turn lane needs to be converted to an eastbound through lane. This will involve adding pavement on the north side of the west leg of the intersection. It is estimated the

amount of pavement needed is 12 feet wide by 300 feet long, plus a 600 foot 50 to 1 transition from the 12 feet added width back to zero feet added. This will involve 7,200 square feet of pavement at an estimated cost of \$10 per square foot, or \$72,000. The \$10.00 per square foot is equivalent to \$1.27 million for one lane mile in each direction. The sum of the peak month leg volumes today is 46,475. The sum of the leg volumes in 2025 without the project is 57,629. The project adds 1220 vehicles per day to the intersection leg volumes. The project's pro rata share is calculated as follows: $1220/(57,629+1220-46,475)$, or 9.86 percent of \$180,000. The project's pro-rata share of the offsite improvement cost is \$17,748.

SAFETY HAZARDS AND EMERGENCY ACCESS

5.5-4 *Project implementation may increase hazards to vehicles, pedestrians and bicyclists due to the proposed project. Analysis has concluded that with implementation of the recommended mitigation measures, impacts would be less than significant.*

The project would have access from State Route 38, which is the primary roadway serving the north shore area. The project includes the realignment of this Highway. The realignment would occur in two phases, with construction of the new alignment completed before the existing alignment is demolished in order to eliminate the potential for hampering emergency response activity or evacuation plans. The project would include two interior roads, accessible from State Route 38. Per the analysis contained in the *Traffic Analysis* report, the following conclusions have been made regarding internal circulation and potential safety hazards:

- Site Access. To assure smooth traffic operations for vehicles entering and exiting the site, a 150 foot left turn pocket on is recommended on North Shore Drive at each project access location. The County of San Bernardino has suggested that it should be a continuous left turn pocket across the frontage of the property. Because it is a State Highway, Caltrans would need to decide which they prefer.

A STOP sign should be installed to control outbound traffic on all site access roadways to North Shore Drive. With more than one driveway, good emergency access is assured because there are two ways of reaching any point within the site. Maintain a high level of service along arterials by restricting parking and controlling roadway access.

Landscape plantings and signs should be limited to 36 inches in height within 25 feet of project driveways to assure good visibility.

As is the case for any roadway design, the County should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

- Internal Roadway Sizing. To identify future internal circulation needs to the project, future traffic volumes for internal roadways of the project have been determined. The maximum volume is approximately 400 vehicles per day, for which is a two-lane road is satisfactory.

- Internal Circulation. The traffic circulation internal to the proposed project has been reviewed from a traffic engineering viewpoint, and the findings are as follows:
 - Cul-de-sac Lengths: None of the cul-de-sacs have excessive length, which is important for emergency equipment access.
 - Four-Legged Intersections: On arterials, four legged intersections are desirable to reduce turning movements, and expedite traffic movement. On local streets, four legged intersections are undesirable. The proposed project has no four legged intersections on local streets.
 - Distance Between Intersections: It is desirable to place intersections at least two hundred feet apart. All intersections are at least 200 feet apart.
 - Grades: All grades are 10 percent or less, which is satisfactory.
 - Intersection Angle: Intersections at other than 90 degrees are undesirable. All intersecting streets are perpendicular to one another.
 - Visibility: All intersections are designed to afford adequate visibility.

It is concluded that the internal circulation is satisfactory in all aspects.

The *Traffic Analysis* report recommends mitigation measures to assure satisfactory traffic operations and good visibility. Implementation of the recommended mitigation measures would reduce potentially significant impacts to less than significant levels.

MITIGATION MEASURES

This section directly corresponds to the identified Impact Statements in the impacts subsection.

EXISTING CONDITIONS WITH PROJECT TRAFFIC ANALYSIS

- 5.5-1 For existing traffic conditions, the intersection of Stanfield Cutoff and Big Bear Boulevard currently requires the eastbound right turn lane to be converted to an eastbound through lane, through the intersection. The eastbound right turn lane is restricted to an eastbound through lane, and involves roadway widening. The project's pro rata share of these off-site road improvements is estimated to be \$17,748.

YEAR 2006 TRAFFIC ANALYSIS

- 5.5-2 Refer to Mitigation Measure 5.5-1. No additional mitigation measures are recommended.

YEAR 2025 TRAFFIC ANALYSIS

- 5.5-3 For future traffic conditions, the intersection of Stanfield Cutoff and North Shore Drive shall require a traffic signal. The project's pro rata share of the signal is \$56,523.

SAFETY HAZARDS AND EMERGENCY ACCESS

- 5.5-4a Parking shall be restricted on State Route 38.
- 5.5-4b A 150-foot eastbound left turn pocket shall be striped for traffic on North Shore Drive turning left into the project entry locations.
- 5.5-4c For future traffic conditions, intersection geometrics as recommended in Table 1b of the Kunzman Associates June 2003 *Traffic Analysis* report, shall be implemented.
- 5.5-4d All streets internal to the project shall be constructed to full ultimate cross-sections. ~~as adjacent development occurs.~~
- 5.5-4e A STOP sign shall be installed to control outbound traffic on all site access roadways onto North Shore Drive.
- 5.5-4f The County of San Bernardino shall periodically review traffic operations in the vicinity of the site once the project is constructed in order to assure that the traffic operations are satisfactory.
- 5.5-4g Landscape plantings and signs shall be limited to 36 inches in height within 25 feet of project driveways to assure good visibility.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Following implementation of recommended mitigation measures, Traffic and Circulation impacts would be reduced to a less than significant level.

5.6 AIR QUALITY

This Section evaluates air quality impacts associated with short construction and long-term buildout of the Moon Camp Project. Information in this Section is based primarily on the *CEQA Air Quality Handbook*, prepared by the South Coast Air Quality Management District (SCAQMD), April 1993 (as revised through November 1993); Air Quality Data (SCAQMD 1999 through 2003); the *Final Air Quality Management Plan*, prepared by the South Coast Air Quality Management District (August 2003); and the *Fawnskin 92-Dwellings Traffic Analysis*, prepared by Kunzman Associates, September 2003.

EXISTING CONDITIONS

SOUTH COAST AIR BASIN

The South Coast Air Basin (Basin), in which the Community of Fawnskin is located, is characterized as having a “Mediterranean” climate (a semi-arid environment with mild winters, warm summers and moderate rainfall). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Geronio Pass area in Riverside County. Its terrain and geographical location determine the distinctive climate of the Basin, as the Basin is a coastal plain with connecting broad valleys and low hills.

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area’s natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin.

CLIMATE

The climate in the basin is characterized by moderate temperatures and comfortable humidities with precipitation 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. However, with a less pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100 degrees in recent years. January is usually the coldest month at all locations while July and August are usually the hottest months of the year. Although the Basin has a semi-arid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off-shore winds, the ocean effect is dominant. Periods with heavy fog are frequent; and low stratus

clouds, occasionally referred to as “high fog” are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation is typically 9 to 14 inches annually in the Basin and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

More specifically, the Community of Fawnskin enjoys an Alpine climate. The community is located in an area that intercepts water-laden clouds which can result in rainfall and/or snow of up to 35 to 45 inches. Precipitation at Big Bear Lake’s National Weather Service station from 1960 to 1995 averaged about 18 inches for each six-month period from October to March. The area 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 32.4°F. The warmest month is July with a mean monthly temperature of 63.8°F.

SUNLIGHT

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain original, or “primary” pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form “secondary” pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant 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.

TEMPERATURE INVERSIONS

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air would be mixed and dispersed into the upper atmosphere. However, the Southern California region frequently experiences temperature inversions in which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in the southland. The cool, damp and hazy sea air capped by coastal clouds is heavier than the warm, clear air that acts as a lid through which the marine layer cannot rise. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone observed during summer months in the Basin. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing

them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the Community of Fawnskin is located offers approximately 300 days/year of clear skies and sunshine, 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, furnaces and other sources.

AMBIENT AIR QUALITY STANDARDS

National air quality policies are regulated through the Federal Clean Air Act (FCAA) of 1970 and its 1977 and 1990 amendments. Pursuant to the CAA, the United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six air pollutants: carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀) and lead (Pb). These pollutants are referred to as criteria pollutants because numerical criteria have been established for each pollutant, which define acceptable levels of exposure. The EPA has revised the NAAQS several times since their original implementation and will continue to do so as the health effects of exposure to air pollution are better understood. The federal 1-hour ozone standard will remain in effect until the EPA formally implements the 8-hour standard.

Under the 1977 amendments to the FCAA, states with air quality that did not achieve the NAAQS were required to develop and maintain State Implementation Plans (SIPs). These plans constitute a federally enforceable definition of the states approach (or "plan") and schedule for the attainment of the NAAQS. Air quality management areas were designated as "attainment," "non-attainment" or "unclassified" for individual pollutants depending on whether or not they achieve the applicable NAAQS and CAAQS for each pollutant. In addition, California can designate areas as transitional. It is important to note that because the NAAQS and CAAQS differ in many cases, it is possible for an area to be designated attainment by the EPA (meets NAAQS) and non-attainment by the California Air Resources Board (CARB) (does not meet CAAQS) for the same pollutant.

Areas that were designated as non-attainment in the past, but have since achieved the NAAQS, are further classified as attainment-maintenance. The maintenance classification remains in effect for 20 years from the date that the area is determined by the EPA to meet the NAAQS. There are numerous classifications of the non-attainment designation, depending on the severity of non-attainment. For example, the O₃ non-attainment designation has seven subclasses: transitional, marginal, moderate, serious, severe-15, severe-17, and extreme. Areas that lack monitoring data are designated as unclassified areas. Unclassified areas are treated as attainment areas for regulatory purposes.

ATTAINMENT STATUS

LOCAL AMBIENT AIR QUALITY

The SCAQMD operates several air quality monitoring stations within the Basin. The following air quality information briefly describes the various types of pollutants that are found within the South Coast Air Basin. Additionally, Table 5.6-2, *Air Pollution Sources, Effects and Standards*, provides information on the primary health related effects of the criteria pollutants.

Carbon Monoxide (CO)

CO is an odorless, colorless toxic gas that is formed by the incomplete combustion of fuels. Motor vehicles are by far the largest source of CO in the Basin. At high concentrations, CO can reduce the oxygen-carrying capacity of the blood and cause headaches, dizziness, unconsciousness, and even death. CO also aggravates cardiovascular disease. For CO, the subject portion of the Basin is designated as an attainment area for State standards, however, as a non-attainment area for Federal standards.

Ozone (O₃)

Ground-level ozone, often referred to as smog, is not emitted directly, but is formed in the atmosphere through complex chemical reactions between NO_x and reactive organic gases (ROG) in the presence of sunlight. The principal sources of NO_x and ROG, often termed ozone precursors, are combustion processes (including motor vehicle engines) and evaporation of solvents, paints and fuels. Motor vehicles are the single largest source of O₃ precursor emissions in the SCAQMD. Exposure to O₃ can cause eye irritation, aggravate respiratory diseases and damage lung tissue, as well as damage vegetation and reduce visibility. The entire Basin is designated as a non-attainment area for State and Federal O₃ standards.

Oxides of Nitrogen (NO_x or Nitrogen Dioxide (NO₂))

NO₂, often used interchangeably with NO_x, is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO₂ occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations) in the vicinity. The entire Basin is designated as an attainment area for State and Federal NO₂ standards.

Oxides of Sulfur (SO_x or Sulfur Dioxide (SO₂))

Sulfur Dioxide (SO₂) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Lead is a metal that is a natural constituent of air, water and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Sulfur dioxide is often used interchangeably with sulfur oxides (SO_x) and lead (Pb). Sulfur dioxide levels in all areas of the Basin do not exceed Federal or State standards. The Basin is designated as attainment for both State and Federal SO₂ standards. Since

ambient concentrations of lead have decreased in the Basin, the SCAQMD no longer monitors the presence of lead in ambient air.

Table 5.6-2
Air Pollution Sources, Effects and Standards

Air Pollutant	State Standard	Federal Primary Standard	Sources	Primary Effects
Ozone (O ₃)	0.09 ppm, 1-hour average	0.08 ppm, 8-hour average	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases, irritation of eyes, impairment of cardiopulmonary function, plant leaf injury
Carbon Monoxide (CO)	9.0 ppm, 8-hour average 20 ppm, 1-hour average	9.5 ppm, 8-hour average 35 ppm, 1-hour average	Incomplete combustion of fuels and other carbon-containing substances such as motor vehicle exhaust, natural events, such as decomposition of organic matter	Reduced tolerance for exercise, impairment of mental function, impairment of fetal development, death at high levels of exposure, aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO ₂)	0.25 ppm, 1-hour average	0.0534 ppm, annual avg.	Motor vehicle exhaust, high-temperature stationary combustion, atmospheric reactions	Aggravation of respiratory illness, reduced visibility, reduced plant growth, formation of acid rain
Sulfur Dioxide (SO ₂)	0.25 ppm, 1-hr. avg. 0.04 ppm, 24-hr. avg. with ozone > = 0.10 ppm, 1 hr. avg. or TSP > = 100 µg/m ³ , 24-hr. avg.	0.03 ppm, annual arithmetic mean 0.14 ppm, 24-hour average	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, industrial processes	Aggravation of respiratory diseases (asthma, emphysema), reduced lung function, irritation of eyes, reduced visibility, plant injury, deterioration of metals, textiles, leather finishes, coatings, etc.
Fine Particulate Matter (PM ₁₀)	20 µg/m ³ , annual geometric mean > 50 µg/m ³ , 24-hr. avg.	PM ₁₀ : 50 µg/m ³ , annual arithmetic mean 150 µg/m ³ , 24-hr. avg.	Stationary combustion of solid fuels, construction activities, industrial processes, industrial chemical reactions	Reduced lung function, aggravation of the effects of gaseous pollutants, aggravation of respiratory and cardio-respiratory diseases, increased coughing and chest discomfort, soiling, reduced visibility
	PM _{2.5} : 12 µg/m ³ , annual geometric mean 65 µg/m ³ , 24-hr. avg.	PM _{2.5} : 15 µg/m ³ , annual geometric mean 65 µg/m ³ , 24-hr. avg.		
Lead	1.5 µg/m ³ , 30-day average	1.5 µg/m ³ , calendar quarter	Contaminated soil	Increased body burden, impairment of blood formation and nerve conduction
Visibility Reducing Particles	Reduces visual range to less than 10 miles at relative humidity less than 70%, 8-hour avg (9am - 5pm).			Visibility impairment on days when relative humidity is less than 70 percent
Source: CEQA Air Quality Handbook, South Coast Air Quality Management District, 1993, and updated with current Federal ozone and PM _{2.5} standards.				

Particulate Matter (PM₁₀)

PM₁₀ refers to suspended particulate matter which is smaller than 10 microns or ten one-millionths of a meter. PM₁₀ arises from sources such as road dust, diesel soot, combustion products, construction operations and dust storms. PM₁₀ scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003 the CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25). The Federal 24-hour standard of 150 µg/m³ was retained.

Fine Particulate Matter (PM_{2.5})

Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and Federal PM_{2.5} standards have been created. Particulate matter impacts primarily affect infants, children, the elderly and those with pre-existing cardiopulmonary disease. In 1997, the EPA announced new PM_{2.5} standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA's new standards. The Federal Standard is 65 µg/m³ over an average of 24 hours.

On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by

CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.² Based upon a desire to set clean air goals throughout the State, the CARB created a new annual average standard for PM_{2.5} at 12 µg/m³. Currently, the CARB has issued a staff report, which recommends that the South Coast Air Basin be designated as non-attainment for State and Federal PM_{2.5} standards³.

Volatile Organic Compounds (VOCs or Reactive Organic Gasses (ROG))

Hydrocarbon compounds are any compounds containing various combinations of hydrogen and carbon atoms that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor and some examples include gasoline, alcohol and the solvents used in paints. There are no specific State or Federal VOC thresholds as they are regulated by individual air districts as O₃ precursors.

² California Environmental Protection Agency, Air Resources Board, *Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates*, May 3, 2002.

³ Ibid, page 4.8-3.

Visibility

Visibility can be defined as the distance that atmospheric conditions permit a person to see at any given time. Technically, visibility is defined as the farthest distance an observer can distinguish a large black object against the horizon. Reduced visibility causes aesthetic impairment of surroundings and also interferes with aircraft operations. Visibility may be impaired by natural or man-made sources, including natural aerosols such as precipitation, fog, soil particles, volcanic emissions, vegetation, sea spray and organic decomposition products; and man-made sources such as sulfates and nitrates. The greatest contribution to visibility reduction in the Basin is from light scattering by "fine particle" aerosols with the size range of 0.1 to 2 microns (a micron is one-millionth of a meter). Based on review of available technical data provided by CARB, visibility was not measured at SCAQMD Monitoring Stations between 1999 and 2003.

Total Suspended Particulates (TSP)

Total Suspended Particulates (TSP) is the name given to the solid matter suspended in the atmosphere. Approximately 9.5 percent of TSP is generated by stationary sources. This complicated mixture of natural and man-made materials includes soils particles, biological materials, sulfates, nitrates, organic (or carbon-containing compounds) and lead. A high volume sampler is used to determine TSP concentration by passing a measured column of air through a glass fiber filter. The filter then is weighed to determine the concentration of TSP, after which it is analyzed for lead, sulfate, and nitrate by an SCAQMD laboratory. TSP tends to be at higher concentrations in the day and has an unclear seasonal pattern. High dust levels result from strong winds and loose, arid soil. Larger dust particles pose a less serious health threat than small particles produced by fossil fuel combustion. TSP monitoring was discontinued in 1991.

Lead (Pb)

In the Basin, atmospheric lead is generated almost entirely by the combustion of leaded gasoline and contributes less than one percent of the material collected as TSP in 1982. Atmospheric lead concentrations have been reduced substantially in recent years due to the lowering of average lead content in gasoline. Exceedances of the State air quality standard for lead (monthly average concentration of 1.50 ug/m³) now are confined to the densely populated portions of San Bernardino County where vehicle traffic is greatest.

REGULATORY FRAMEWORK

FEDERAL CLEAN AIR ACT

The FCAA (1977 amendments) 42 USC 7401 *et. seq.*) state that the federal government is prohibited from engaging in, supporting, providing financial assistance for, licensing, permitting or approving any activity that does not conform to an applicable SIP. Federal actions relating to transportation plans, programs and projects developed, funded, or approved under 23 USC of the Federal Transit Act

(40 USC 1601 *et. seq.*) are covered under separate regulations for transportation conformity.

In the 1990 FCAA amendments (FCAAA), the EPA included provisions requiring federal agencies to ensure that actions undertaken in non-attainment or attainment-maintenance areas are consistent with applicable SIPs. The process of determining whether or not a Federal action is consistent with an applicable SIP is called conformity.

The EPA General Conformity Rule applies only to federal actions that result in emissions of “non-attainment or maintenance pollutants”, or their precursors, in federally designated non-attainment or maintenance areas. The EPA General Conformity Rule establishes a process to demonstrate that federal actions would be consistent with applicable SIPs and would not cause or contribute to new violations of the NAAQS, increase the frequency or severity of existing violations of the NAAQS, or delay the timely attainment of the NAAQS. The emissions thresholds that trigger requirements of the conformity rule for federal actions emitting nonattainment or maintenance pollutants, or their precursors, are called *de minimus* levels. The general conformity *de minimus* thresholds are defined in 40 CFR 93.153(b). The federal General Conformity Rule does not apply to federal actions in areas designated as non-attainment of only the CAAQS.

CALIFORNIA CLEAN AIR ACT

CARB administers the air quality policy in California. The CAAQS were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 4.8-1, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. The CCAA, which was approved in 1988, requires that each local air district prepare and maintain an air quality management plan (AQMP) to achieve compliance with CAAQS. These AQMP’s also serve as the basis for preparation of the SIP for the State of California.

CARB establishes policy and statewide standards and administers the State’s mobile source emissions control program. In addition CARB oversees air quality programs established by State statute, such as Assembly Bill (AB) 2588, the Air Toxics “Hot Spots” Information and Assessment Act of 1987.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

The SCAQMD is one out of 35 air quality management districts that have prepared Air Quality Management Plans (AQMPs) to accomplish the five percent annual reduction goal. The most recent AQMP was adopted in 2003. To accomplish its task, the AQMP relies on a multi-level partnership of governmental agencies at the federal, state, regional and local level.

The 2003 AQMP relies on a multi-level partnership of governmental agencies at the federal, state, regional and local level. These agencies (EPA, CARB, local governments, Southern California Association of Governments (SCAG) and the

SCAQMD are the primary agencies that implement the AQMP programs. The 2003 AQMP proposes policies and measures to achieve federal and state standards for improved air quality in the SCAB and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under SCAQMD jurisdiction.

The 2003 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 2003 AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 Amendments to the Ozone State Implementation Plan (SIP) for the SCAB for the attainment of the federal ozone air quality standard. However, the 2003 AQMP points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/99 Plan) to offset increased emission estimates from mobile sources and meet all federal criteria pollutant standards within the time frames allowed under the Federal Clean Air Act (FCAA).

SCAG is responsible under the FCAA for determining conformity of projects, plans and programs with the SCAQMD AQMP. As indicated in the *AQMD Air Quality Analysis Guidance Handbook*, there are two main indicators of consistency:

- Whether the project would 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
- Whether the project would exceed the AQMP's assumptions for 2020 or increments based on the year of project build-out and phase.

TOXIC AIR CONTAMINANTS (TACS)

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern in Southern California. There are hundreds of different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. Health effects of TACs include cancer, birth defects, neurological damage, and death.

California regulates toxic air contaminants through its air toxics program, mandated in Chapter 3.5 (Toxic Air Contaminants) of the Health and Safety Code (H&SC Section 39660 et. seq.) and Part 6 (Air Toxics "Hot Spots" Information and Assessment) (H&SC Section 44300 et. seq.).

The CARB, working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), identifies toxic air contaminants. Air toxic control measures may then be adopted to reduce ambient concentrations of the identified toxic air

contaminant below a specific threshold based on its effects on health, or to the lowest concentration achievable through use of best available control technology for toxics (T-BACT). The program is administered by the CARB. Air quality control agencies, including the SCAQMD, must incorporate air toxic control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by the CARB.

The Air Toxics “Hot Spots” Information and Assessment Act, codified in the Health and Safety Code, required operators of specified facilities in the District to submit to the SCAQMD comprehensive emissions inventory plans and reports by specified dates (H&SC Section 39660 et. seq. and Section 44300 et. seq.). The SCAQMD reviews the reports and then places the facilities into high, intermediate, and low priority categories, based on the potency, toxicity, quantity, and volume of hazardous emissions, and on the proximity of potential sensitive receptors to the facility. Facilities designated as high priority (Category A) must prepare a health risk assessment. Those found to pose a significant risk are required to notify the surrounding population. The emissions inventory data are to be updated every two years.

Diesel exhaust is a growing concern in the Basin area and throughout California. The CARB in 1998 identified diesel engine particulate matter as a TAC. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of these toxic compounds adhere to the particles, and because diesel particles are very small, they penetrate deeply into the lungs. Diesel engine particulate matter has been identified as a human carcinogen. Mobile sources (including trucks, buses, automobiles, trains, ships and farm equipment) are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections.

Prior to the listing of diesel exhaust as a TAC, California had already adopted various regulations that would reduce diesel emissions. These regulations include new standards for diesel fuel, emission standards for new diesel trucks, buses, autos, and utility equipment, and inspection and maintenance requirements for health duty vehicles. Following the listing of diesel engine particulate matter as a TAC, the CARB is currently evaluating what additional regulatory action is needed to reduce public exposure. The CARB does not plan on banning diesel fuel or engines. The CARB may consider additional requirements for diesel fuel and engines, however, as well as other measures to reduce public exposure.

SENSITIVE RECEPTORS

Certain land uses are particularly sensitive to air emissions, including schools, hospitals, rest homes, long-term medical and mental care facilities and parks and recreation areas.

Existing sensitive receptors within the vicinity of the project site include residential uses to the east along Highway 38, to the west along Oriole Lane and to the north along Flicker Road. Other sensitive receptors include the following:

Schools

- North Shore Elementary School (765 N. Stanfield Cutoff)
- Big Bear Middle School (41275 Big Bear Boulevard)

Library

- Big Bear Lake Branch Library (41930 Garstin Drive)

Hospitals

- Big Bear Valley Community Hospital (41870 Garstin Road)

EMISSIONS ESTIMATION PROCEDURE

Emissions are estimated using the Urban Emissions (URBEMIS) 2002 Model developed and tested by CARB and approved for use by the SCAQMD. The URBEMIS2002 model is an emissions estimation tool for land use and development projects. The model has been modified and enhanced to estimate construction and area source emissions for various air districts in California. Specific emission factors for each air basin, including the Basin, have been incorporated into the model that account for compliance with air basin specific requirements. Various default parameters specific to each region have been verified and approved by local regulatory agencies and are also included into the model. Additionally, the model includes the ability to selectively identify and account for various mitigation measures.

The SCAQMD, along with other air pollution agencies in California, is actively involved in maintaining and updating the model. The URBEMIS2002 model includes the following updates compared to URBEMIS2001: on-road mobile source emission factors from CARB's EMFAC2002 model have been incorporated into the URBEMIS model to calculate on-road source emissions for both construction and operation; emission factors for off-road mobile sources derived from CARB's off-road model have been incorporated into URBEMIS to estimate emissions from off-road construction equipment; the construction module has been substantially revised to correct problems identified in URBEMIS2001 and provide flexibility by allowing the user to allocate construction emissions by construction phase.

IMPACTS

SIGNIFICANCE CRITERIA

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant impact on the environment. An Environmental Impact Report (EIR) is required to focus on these effects and offer mitigation measures to reduce or avoid any significant impacts that are identified. The criteria, or standards, used to determine the significance of impacts may vary depending on the nature of the project. Air quality impacts resulting from the implementation of the proposed project could be considered significant if they cause any of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact Statement 5.6-3);

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (refer to Impact Statements 5.6-1 and 5.6-2);
- 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) (refer to Impact Statement 5.6-4);
- Exposes sensitive receptors to substantial pollutant concentrations (refer to Impact Statement 5.6-2); and/or
- Create objectionable odors affecting a substantial number of people (refer to Section 10.0, *Effects Found Not To Be Significant*).

The SCAQMD *CEQA Air Quality Handbook* establishes thresholds for pollutant emissions generated both during and following construction. Buildout of the proposed project would be required to implement control measures during construction activities in order to reduce the amount of emissions to below the significance thresholds, when possible. SCAQMD construction and operation thresholds are indicated in Table 5.6-3, *SCAQMD Thresholds of Significant Contribution to Regional Air Pollution*. As previously stated, the Basin is designated non-attainment for State standards for O₃ and PM₁₀ and for CO under Federal standards. Any increase in these pollutants would create a significant and unavoidable air quality impact.⁴

Table 5.6-3
SCAQMD Thresholds of Significant Contribution to Regional Air Pollution

Pollutant	Threshold of Significant Effect	
	Construction Emissions	Operational Emissions
Reactive Organic Gases (ROG)	75 lbs/day	55 lbs/day
Oxides of Nitrogen (NO _x)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Particulate Matter (PM ₁₀)	150 lbs/day	150 lbs/day
Source: <i>CEQA Air Quality Handbook</i> , South Coast Air Quality Management District, 1997.		

SHORT-TERM AIR QUALITY IMPACTS

5.6-1 *Significant short-term air quality impacts would occur during site preparation and project construction. These impacts are considered significant before and after mitigation for ROG and NO_x emissions from construction equipment exhaust. Impacts would be less than significant*

⁴ The SCAQMD is in the process of revising the *CEQA Air Quality Handbook*. Three chapters have been revised to date including Chapters 2 - Improving Air Quality, 3 – Basin Air Quality Information, and 4 – Early Consultation and Sensitive Receptor Siting Criteria.

for other pollutants. (Mitigation in this instance refers to applicable County Development Code Sections and SCAQMD Rules.)

Short-term air quality impacts would occur during grading and construction operations associated with implementation of the proposed project. The short-term air quality analysis considers cumulative construction emissions combined with the proposed project. The temporary impacts include:

- Particulate (fugitive dust) emissions from clearing and grading activities on-site;
- Exhaust emissions and potential odors from the construction equipment used on-site as well as the vehicles used to transport materials to and from the site;
- Off-site air pollutant emissions at the power plant serving the site, while temporary power lines are needed to operate construction equipment and provide lighting; and
- Exhaust emissions from the motor vehicles of the construction crew.

The above described power plant and vehicle emissions are generated during construction activities. Project-related power plant and motor vehicle emissions are further analyzed in the long-term impacts portion of this Section. Potential odors generated during construction operations are temporary in nature and are not considered to be an impact (refer to Section 10.0, *Effects Found Not To Be Significant*).

It should be noted that emissions produced during grading and construction activities are “short-term” in nature as they endure only for the duration of construction.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM₁₀) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project vicinity. Fugitive dust emissions are associated with land clearing, ground excavation, cut and fill operations, and truck travel on unpaved roadways. Dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions.

Fugitive dust from grading and construction is expected to be short-term and would cease following project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health. Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM₁₀ (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. As previously discussed, PM₁₀ poses a serious health hazard; alone or in combination with other pollutants. The URBEMIS2002 computer model (adapted from the

URBEMIS7G model by the SCAQMD) calculates PM₁₀ fugitive dust as part of the site grading emissions (refer to Table 5.6-4, below). Even with implementation of standard construction practices regarding dust control techniques (i.e., daily watering), limitations on construction hours, and adherence to SCAQMD Rule 403 (requires watering for inactive and perimeter areas, track out requirements, etc.), impacts from PM₁₀ fugitive dust would be less than significant.

**Table 5.6-4
Construction Emissions**

Emissions Source	Pollutant (pounds/day) ¹			
	ROG	NOx	CO	PM ₁₀
Unmitigated Emissions ²	400.3	162.5	192.6	52.1
SCAQMD Threshold	75	100	550	150
Is Threshold Exceeded Before Mitigation?	Yes	Yes	No	No
Mitigated Emissions ⁴	400.3	162.5	192.6	20.4
Is Threshold Exceeded After Mitigation?	Yes	Yes	No	No

ROG = reactive organic gases NOx = nitrogen oxides CO = carbon monoxide PM₁₀ = fine particulate matter

NOTES:
¹ Emissions calculated using the URBEMIS2002 Computer Model as recommended by the SCAQMD and project specific construction data provided by the project applicant.
² Calculations include emissions from numerous sources including: site grading, construction worker trips, stationary equipment, diesel and gas mobile equipment, and asphalt off-gassing using a maximum amount of grading per day of 2.5 acres and 260 working days per year. For future lot development, air quality modeling assumes a conservative scenario that roadway surfaces will be graded, and that rough grading will occur for the proposed pad foundations. Results are based on the maximum amount of site grading, construction and asphalt activity that would occur in one day. Due to the uncertainty of future pad foundations and the relatively small amounts of pollutants generated, fine grading has not been included in this analysis.
³ Refer to Appendix 15.4, *Air Quality Data*, for assumptions used in this analysis, including quantified emissions reduction by mitigation measures. Emissions would exceed the SCAQMD quarterly construction emissions for NOx and ROG.
⁴ The reduction/credits for construction emission mitigations are based on mitigations included in the URBEMIS2002 computer model and as typically required by the SCAQMD. The mitigations include the following: proper maintenance of mobile and other construction equipment and speed limitation on unpaved roads to 15 miles per hour.

**Construction Equipment and Worker Vehicle Exhaust
(Significant after mitigation for NO_x emissions)**

Exhaust emissions from construction activities include emissions associated with the transport of equipment, worker trips, emissions produced on-site as the equipment is used, and emissions from trucks to/from the site. Emitted pollutants would include CO, ROG, NO_x, and PM₁₀.

Table 5.6-4, *Construction Emissions*, presents exhaust emission factors for typical diesel-powered heavy equipment. Refer to Appendix 15.4, *Air Quality Data*, for a listing of mobile and stationary construction equipment included in these calculations. Computer model results are also included in Appendix 15.4. The maximum area estimated to be disturbed per day would total 2.5 acres. The modeling input assumes that a maximum amount of grading took place five days per week throughout the year (260 days). These assumptions are based upon a worst case scenario, based upon the rugged site conditions.

As indicated in Table 5.6-4, emissions associated with construction equipment within the project area are anticipated to exceed SCAQMD construction thresholds for NO_x and ROG. Feasible mitigation measures are not available to reduce the significance of short-term construction NO_x and ROG emissions to less than significant levels.

As such, short-term air emissions for this pollutant would be considered significant and unavoidable.

LONG-TERM OPERATIONAL IMPACTS

5.6-2 *The project 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 SCAQMD thresholds for ROG, CO and PM₁₀. These exceedances are considered significant and cannot be mitigated to a less than significant level.*

The calculations for the following analysis are based upon the Traffic Study (refer to Section 5.5, *Traffic and Circulation*). Buildout of Moon Camp would occur incrementally over time beginning with the realignment/construction of North Shore Drive. The County of San Bernardino on a project-by-project basis would evaluate the exact details of each individual lot construction. However, for the purposes of this air quality emissions analysis, it was assumed that all of the residential lots would be built in one phase.

Long-term air quality impacts would consist of mobile source emissions generated from project-related traffic and from stationary source emissions generated directly from the natural gas consumed and indirectly from the power plant providing electricity to the project site. Emissions associated with each of these sources are discussed and calculated below.

Mobile Source Emissions Only: Regional Impacts

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_x, SO_x, and PM₁₀ are all pollutants of regional concern. (NO_x and ROG react with sunlight to form O₃ or photochemical smog, and SO_x and PM₁₀ are readily transported by wind currents). However, CO tends to be a localized pollutant, dispersing rapidly at the source. Long-term impacts to regional air quality levels are analyzed below.

As previously discussed, the Basin is a non-attainment area for Federal and State air quality standards for O₃ and PM₁₀ and for CO (Federal standard only). Nitrogen oxides and ROG are regulated O₃ precursors. (A precursor is defined as a directly emitted air contaminant that, when released into the atmosphere, forms or causes to be formed or contributes to the formation of a secondary air contaminant for which an ambient air quality standard has been adopted). Project-generated vehicle emissions have been estimated using the URBEMIS2002 computer model (published by the SCAQMD and based on the URBEMIS7G model). This model predicts ROG, CO, NO_x, and PM₁₀ emissions from motor vehicle traffic associated with new or modified land uses (refer to Appendix 15.4, *Air Quality Data*, for model input values used for this project with the model output). Project trip generation rates were based on the Project Traffic Study (refer to Section 5.5, *Traffic and Circulation*,

and Appendix 15.3, *Traffic Data*). Table 5.6-5, *Long-Term Project Emissions*, presents anticipated regional mobile emissions.

Area Source Emissions

The proposed project would generate electrical demand and heating demands resulting in natural gas and wood burning combustion. Electrical demand would result in electrical generation emissions from local power plants. As shown in Table 5.6-5, *Long-Term Project Emissions*, stationary source emissions generated directly from the natural gas consumed and wood burning, and indirectly from the power plant providing electricity to the project site would exceed SCAQMD thresholds with operation (ROG, CO and PM₁₀).

Residential Wood Burning Fireplaces

All burning creates harmful by-products of combustion, resulting in air pollution. Materials on the low end of the energy scale such as wood and charcoal create the most pollution. Sources on the high end of the energy scale or ladder, such as natural gas and propane burn very cleanly resulting in very little air pollution. The basic constituents of wood smoke pollutants are:⁵

- Particulates.⁶ PM₁₀, PM_{2.5}, and Nanoparticulate particulates are tiny particles suspended in the air that are too small to be filtered out, and thus become embedded deep within the lungs. The most injurious are particles classified as PM₁₀, 10 microns in diameter or less. Wood smoke PM₁₀ contains creosote, soot, and ash. Most smoke particles average less than one micron (one millionth of a meter), allowing them to remain airborne for 3 weeks. The particles are efficient vehicles for transporting toxic gases, bacteria and viruses deep into the lungs where they pass into the blood stream. Inhalation of PM₁₀ causes coughing, irritation and permanent scarring and damage to the lungs resulting in decreased lung function and increases in respiratory illness. These effects become significant at averages less than 40 micrograms per cubic meter. Smoke from just one fireplace burning has been found to cause particulate levels to exceed 200 $\mu\text{g}/\text{m}^3$ in the outdoor air surrounding the neighboring property.
- Carcinogens. Polycyclic Aromatic Hydrocarbons (PAH): Residential wood burning is the source of 50 percent of airborne Polynuclear Organic Material (POM) in the U.S. POMs contain a group of compounds known as PAHs which include many Class A carcinogens. The U.S. EPA estimates the cancer risk from wood smoke is twelve times greater than that from equal amounts of tobacco smoke. Wood burning also creates dioxins (refer to Footnote 5).

⁵ A Summary of the Emissions Characterization and Noncancer Respiratory Effects of Wood Smoke, 1993 EPA Report, EPA-453/R-93-036.

⁶ Particulate pollution in the past decade has been measured as PM₁₀, that is particulate matter 10 microns in diameter or less, which is talcum powder size. Recently the focus has shifted to smaller diameter particles, PM_{2.5}, which denotes all particles 2.5 microns and smaller (bacteria sized). These small sizes are thought to be more injurious because they are deeply respirable, becoming lodged in the farthest recesses of the lungs. Smoke from wood combustion is almost entirely in this range.

- Dioxin. Carbon Monoxide: An odorless gas resulting from all burning but produced in large amounts when burning takes place with reduced oxygen, such as in wood stoves. Even small amounts in the air reduce the body's ability to transport oxygen, constrict muscles and blood vessels, stress the heart, and result in feeling cold, fatigued and nauseated. High CO levels are found indoors where wood is burned.
- Respiratory Irritants and Toxins. There are over 100 different chemicals and compound groups in emissions from burning wood. In addition to those noted above there are chemicals known to be toxic such as formaldehyde, propionaldehyde, acetaldehyde, isobutyraldehyde, phenol, cresols. Nitrogen dioxide released from burning wood impairs the respiratory system and reduces its ability to fight infection. This combines with the organic compounds to form ozone which makes breathing difficult. High levels of Volatile Organic Compounds are found in the emissions of lawn equipment, charcoal grills and many personal care and cleaning products.

The project proposes 92 single-family residential lots, which are assumed for the purposes of this analysis to have wood burning fireplaces. The URBEMIS2002 computer model generates worst-case particulate quantities based upon 8 hours of use per day during the winter months. Additionally, URBEMIS2002 predicts wood burning quantities for Carbon Monoxide (CO) and Reactive Organic Gases (ROG). However, these pollutants can be reduced through the installation of an Environmental Protection Agency (EPA) certified fireplace. If properly operated, the cleaner EPA certified fireplaces built after 1992 can decrease the level of polluting emissions by up to 85 percent and create the same amount of heat during the winter using 30 percent less wood. Additionally, the installation of a ceramic coating on the honeycomb inside a catalytic combustor has been proven to help the gases and particles in smoke burn faster and at lower temperatures. Alternatively, the installation of a natural gas burning fireplace with ceramic logs eliminates particulate emissions.

Recreational Boating Activities

Lot "C" is a gated entrance to the project, including a proposed boat dock, consisting of 100 boat slips, which would be available for use by residents of the tract and accessible by Lot "C". The types of vessels, which would be docked at the boat slips, would be comprised of outboard and personal watercraft. These boat engines, which have typically used simple two-stroke technology, contribute about 12 percent of hydrocarbon (HC) emissions from mobile sources. Emission standards for outboard and personal watercraft engines call for manufacturers to meet increasingly stringent HC levels over a nine-year phase-in period starting in 1998. By 2006 all manufacturers will produce engines with 75 percent lower HC emissions. The gradually decreasing emission standard allows manufacturers to determine the best approach for achieving the targeted reductions over time by allowing them to phase in the types of control technologies in the most sensible way, while minimizing the cost impact to the consumer.⁷ With the Environmental Protection Agency's new regulation over outboard and personal watercraft (EPA420-F-96-012), marine

⁷ United States Environmental Protection Agency, *Reducing Air Pollution from Nonroad Engines*, Office of Transportation and Air Quality, November 2000.

engines will be over 75 percent cleaner in 2006, as compared to marine engine technology in 1998. Since the reduction of HC emissions depends on sales of these newer technology engines, the EPA expects to achieve this reduction in HC emissions from marine engines by the year 2025. EPA expects a 50 percent reduction to occur by the year 2020.⁸

**Total Project Operational Emissions: Area and Mobile Sources
(Significant for ROG, CO and PM₁₀ emissions)**

As shown in Table 5.6-5, the mobile source and area emissions associated with the proposed project would generate pollutant emissions in excess of SCAQMD thresholds. Thus, implementation of the proposed project would create a significant and unavoidable individual project impact from ROG, CO and PM₁₀ emissions. The ROG emissions are primarily from the combustion of wood in the fireplaces. As the proposed project would exceed established ROG, CO and PM₁₀ thresholds, the project would create a significant and unavoidable impact to regional levels of these pollutants.

**Table 5.6-5
Long-Term Project Emissions¹**

Project	Pollutant (Pounds/Day)			
	ROG	NO _x	CO	PM ₁₀
(unmitigated)				
• Area Source Emissions ²	1,035.1	14.5	1,137.3	155.8
• Vehicle Emissions	10.1	17.4	127.8	14.3
Total Unmitigated Emissions	1,045.2	31.9	1,265.1	170.1
SCAQMD Threshold	55	55	550	150
Is Threshold Exceeded? (Significant Impact?)	Yes	No	Yes	Yes
ROG = reactive organic gases NO _x = nitrogen oxides CO = carbon monoxide PM ₁₀ = fine particulate matter				
NOTES: 1 – Based on URBEMIS2002 modeling results, worst-case seasonal emissions for area and mobile emissions, and trip rate data provided in the project Traffic Study. 2 – Operational scenario assumes 25 percent utilization of outdoor wood burning stoves and 100% utilization of fireplaces.				

Localized CO Emissions

The SCAQMD recommends performing a carbon monoxide hotspots analysis when a project increases the intersection capacity utilization (ICU) by 0.02 (2 percent) for any intersection with a Level of Service (LOS) rating of D or worse. Carbon monoxide is the pollutant of major concern along roadways since the most notable source of carbon monoxide is vehicles. For this reason carbon monoxide concentrations are usually indicative of the local air quality generated by the roadway network, and are used as an indicator of its impacts upon local air quality. CO is an odorless, colorless toxic gas that is formed by the incomplete combustion of fuels

⁸ National Management Measures Guidance to Control Nonpoint Source Pollution from Marinas and Recreational Boating, United States Environmental Protection Agency, November 2001.

that at high concentrations can lead to a localized plumes commonly referred to as “Carbon Monoxide Hotspots”. A screening level analysis was performed per SCAQMD protocol for Year 2006 and Year 2025 peak month conditions for the following intersections:

- Stanfield Cutoff/Big Bear Boulevard
- Stanfield Cutoff/North Shore Drive

In order to simulate a worst-case conservative scenario, the intersections were screened in existing configuration without improvements. The carbon monoxide screening utilized the intersection analysis as contained within the Project traffic report. Based upon the Traffic Report, the project would generate 880 daily trips, 69 of which would occur during the morning peak hour and 93 of which would occur during the evening peak hour. As illustrated in Table 5.6-6 – *Carbon Monoxide Screening Analysis*, the maximum intersection delay increase due to the Project is 1.5 percent at Stanfield Cutoff and Big Bear Boulevard. Therefore, there would be a less than significant impact in regards to Carbon Monoxide Hotspots.

**Table 5.6-6
Carbon Monoxide Screening Analysis**

Intersection	Scenario					
	Year 2006 No Project ICU (LOS)	Year 2006 With Project ICU (LOS)	Intersection Delay Increase	Year 2025 No Project ICU (LOS)	Year 2025 With Project ICU (LOS)	Intersection Delay Increase
Stanfield Cutoff/Big Bear Blvd.						
AM Peak Hour	0.861 (D)	0.876 (D-)	0.015 (1.5%)	0.827 (D+)	0.839 (D)	0.012 (1.2%)
PM Peak Hour	1.097 (F-)	1.102 (F-)	0.005 (0.5%)	1.250 (F-)	1.255 (D+)	0.005 (0.5%)
Stanfield Cutoff/North Shore Dr.						
AM Peak Hour	- (B)	- (B)	-	- (A+)	- (A+)	-
PM Peak Hour	- (B)	- (B)	-	- (A+)	- (A+)	-
ICU = Intersection Capacity Utilization LOS = Level of Service Notes: 1 – ICU and LOS derived from the Project Traffic Report Dated September 2003. 2 – Values reflect existing unimproved roadway conditions for peak month traffic data.						

CONSISTENCY WITH AIR QUALITY MANAGEMENT PLAN

5.6-3 *The project would not conflict with the Air Quality Management Plan (AQMP). Analysis has concluded that the proposed project is consistent with the AQMP criteria.*

As noted under the Significance Criteria discussion, a potentially significant impact to air quality would occur if the project would conflict with or obstruct the implementation of the applicable air quality plan. Although the project would represent an incremental negative impact to air quality in the Basin, of primary concern is that project-related impacts have been properly anticipated in the regional

air quality planning process and reduced whenever feasible. Therefore, it is necessary to assess the project's consistency with the AQMP.

According to the SCAQMD *CEQA Air Quality Handbook*, the purpose of the consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus if it would interfere with the region's ability to comply with federal and State air quality standards. If the project is inconsistent, local governments need to consider project modifications or inclusion of mitigation to eliminate the inconsistency. It is important to note that even if a project is found consistent it could still have a significant impact on air quality under CEQA. Consistency with the AQMP means that a project is consistent with the goals, objectives, and assumptions in the respective plan to achieve the federal and State air quality standards.

As indicated in SCAQMD's *CEQA Air Quality Handbook*, there are two main indicators of consistency:

- Whether the project would 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
- Whether the project would exceed the AQMP's assumptions for 2010 or increments based on the year of project build-out and phase.

Since the project would only create an additional 880 trips, the AQMP's assumptions would not be exceeded. Additionally, the Applicant will pay its fair share contribution to implement necessary improvements to improve the level of service. Therefore, the project would be considered consistent with the AQMP in this regard.

The project would result in an increase in the severity of existing air quality violations. The Basin is presently in non-attainment for O₃ and PM₁₀ air quality standards (both State and Federal standards) and CO (Federal standards). As indicated in Table 5.6-5, the mobile source and area emissions associated with the proposed project would generate pollutant emissions in excess of SCAQMD thresholds. This increase in the severity of the existing violations would make the proposed development inconsistent with one of the two indicators of consistency. Project implementation would result in a significant unavoidable impact with respect to consistency with the AQMP.

CUMULATIVE

5.6-4 *Cumulative impacts to regional air quality resulting from development of the proposed Project would be less than significant.*

The annual short-term and long-term emissions associated with the proposed Project and cumulative projects indicated in Section 4.0, *Basis for Cumulative Analysis*, would be dependent on the internal phasing. Adherence to SCAQMD rules and regulations would help to alleviate potential impacts related to cumulative conditions. However, the build-out, sale and occupancy of the proposed residences would be

controlled by market demand. The primary post-construction air quality impacts from the development of the Project would result from operational emissions from area and mobile sources. A comparison of the projected emissions for the Basin in the 2003 AQMP and the emission estimates from development of the Project help determine the extent of the air quality impacts that the Project would have on the environment and surrounding air quality. Projected Basin emission estimates have been determined based on the 2003 AQMP estimates for years 2000, 2006 and 2010. Projected emissions for each pollutant were extrapolated from the 2003 AQMP based on the trend of each pollutant from 2000 to 2010. Table 5.6-7, *Projected Emission Estimates for Basin from the 2003 AQMP Compared to Project Emissions*, lists the percent comparison of the Project estimates with the projected Basin estimates. From the emissions presented, it is evident that emissions from the Project are less than 0.01 percent of the total projected Basin emissions. Therefore buildout of Moon Camp would have a less than significant impact on the overall air quality within the Basin.

Table 5.6-7
Projected Emission Estimates for Basin
from the 2003 AQMP Compared to Project Emissions

Pollutant	Year 2020 Emissions Estimates (lbs/day)		
	Projected AQMP Emissions	Moon Camp	Percent Change
ROG	1,182,000	1,045.2	0.088
NO _x	839,000	31.9	0.004
CO	3,490,000	1,265.1	0.036
PM ₁₀	992,000	170.1	0.017

NOTE: Year 2020 AQMP emissions are linearly extrapolated based on 2000 to 2010 emission trends in the 2003 AQMP.

MITIGATION MEASURES

The following mitigation measures directly correspond to the identified impact statements provided in the impacts Subsection for the proposed project:

SHORT-TERM AIR QUALITY IMPACTS

- 5.6-1 In accordance with the County Development Code and SCAQMD Rules, the Project Applicant shall incorporate the following measures during the construction phase of the Project to the satisfaction of the SCAQMD and County of San Bernardino. Compliance with this measure is subject to periodic field inspections by the SCAQMD and County of San Bernardino.

Grading:

Apply non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded for ten days or more);

- Replace ground cover in disturbed areas as quickly as possible;
- Enclose, cover, water two times daily or apply non-toxic soil binders in accordance to manufacturer's specifications to exposed piles (i.e., gravel, sand, dirt) with 5% or greater silt content;
- Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph; and
- All trucks hauling dirt, sand, soil, or other loose materials shall be covered and shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer).

Paved Roads:

- Sweep streets at the end of the day if visible soil material is carried onto adjacent public paved roads.

LONG-TERM OPERATIONAL IMPACTS

- 5.6-2 To the extent feasible, the project shall incorporate the installation of EPA-certified wood burning stoves or fireplaces. If this is not feasible, then the installation of a ceramic coating on the honeycomb inside a catalytic combustor shall be investigated as a feasible alternative. Alternatively, the use of natural gas fireplaces may be used as a feasible alternative.

CONSISTENCY WITH AIR QUALITY MANAGEMENT PLAN

- 5.6-3 No mitigation measures are recommended.

CUMULATIVE

- 5.6-4 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The following air quality impacts would remain significant and unavoidable following mitigation:

- ROG and NO_x from construction activities;
- Project Operations: Exceedance of State and/or Federal emission levels (ROG, CO and PM₁₀) from project operations; and

- Project implementation would result in a significant unavoidable impact with respect to consistency with the AQMP.

If the County of San Bernardino approves the 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.

5.7 NOISE

The purpose of this Section is to analyze Project-related noise source impacts on-site and to surrounding land uses. Mitigation measures are also recommended to minimize the noise impacts of the 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 and traffic information contained in the *Traffic Analysis* report (refer to Section 5.5, *Traffic and Circulation*, and Appendix 15.3, *Traffic Data*). Noise impacts to biological resources are addressed in Section 5.8, *Biological Resources*. Refer to Appendix 15.5, *Noise Data*, for additional information.

EXISTING CONDITIONS

DEFINITIONS

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In general, a 1 dBA change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3 dBA change in sound pressure level is considered a “just detectable” difference in most situations. A 5 dBA change is readily noticeable and a 10 dBA change is considered a doubling (or halving) of the subjective loudness. It should be noted that, generally speaking, a 3 dBA increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume; or by about a 7 mile per hour (mph) increase or decrease in speed.

In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud; 20 dBA higher four times as loud; and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are shown in Table 5.7-1, *Sound Levels and Human Response*. There are three general methods used to measure sound over a period of time: the Community Noise Equivalent Level (CNEL), the equivalent energy level (Leq), and the Day/Night Average Sound Level (Ldn), as defined below.

**Table 5.7-1
Sound Levels and Human Response**

Noise Source	dBA Noise Level	Response
	150	
Carrier Jet Operation	140	Harmfully Loud
	130	Pain Threshold
Jet Takeoff (200 ft.) Discotheque	120	
Unmuffled Motorcycle Auto Horn (3 ft.) Rock'n Roll Band Riveting Machine	110	Maximum Vocal Effort Physical Discomfort
Loud Power Mower Jet Takeoff (2000 ft.) Garbage Truck	100	Very Annoying Hearing Damage (Steady 8-Hour Exposure)
Heavy Truck (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: Outdoor Noise in the Metropolitan Environment, Melville C. Branch and R. Dale Beland, 1970 (p. 2).

CNEL. The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as Leq's, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dBA for the evening (7 p.m. to 10 p.m.), and +10 dBA for the night (10 p.m. to 7 a.m.). CNEL may be indicated by "dBA CNEL" or just "CNEL."

Leq. The Leq is the sound level containing the same total energy over a given sample time period. The Leq can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. Leq is typically computed over 1, 8 and 24-hour sample periods.

Ldn. Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the Leq. The Ldn is calculated by averaging the Leqs for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10 p.m. to 7 a.m.), by a 10 dBA to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L90, L50, L10, etc.). L50 equals the level exceeded 50 percent of the time.

HUMAN RESPONSES TO SOUND

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise will generally increase with the environmental sound level. However, many factors will also influence people's response to noise. These factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, will all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "highly annoyed" to "not annoyed".

LAWS, ORDINANCES, REGULATIONS AND STANDARDS

This section describes the laws, ordinances, regulations and standards that are applicable to mixed land use developments and the proposed Project. Regulatory requirements related to environmental noise are typically promulgated at the local level. However, federal and state agencies provide standards and guidelines to the local jurisdictions.

STATE OF CALIFORNIA GUIDELINES

California Environmental Quality Act. CEQA was enacted in 1970 and requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a potentially significant impact if the project exposes people to noise levels in excess of standards established in the local general plan or noise ordinance. Additionally, under CEQA, a project has a potentially significant impact if the project creates a substantial increase in the ambient noise levels in the project vicinity above levels existing without the project. If a project has a potentially significant impact, mitigation measures must be considered. If mitigation measures to reduce the impact to less than significant are not feasible due to economic, social, environmental, legal, or other conditions, the most feasible mitigation measures must be considered.

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 as shown in Table 5.7-2, *Land Use Compatibility for Community Noise Environments*. 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.

COUNTY OF SAN BERNARDINO NOISE STANDARDS

According to the San Bernardino County General Plan, areas within San Bernardino County will 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 the Tables 5.7-3, *Interior/Exterior Noise Level Standards – Mobile Noise Sources*, and Table 5-7-4, *Hourly Noise Level Performance Standards – Locally Regulated Sources*.¹

LOCATION OF SENSITIVE RECEPTORS

Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours.

Existing sensitive receptors within the vicinity of the project site include residential uses to the east along Highway 38, to the west along Oriole Lane and to the north along Flicker Road. Other sensitive receptors include the following:

¹ Source: San Bernardino County General Plan, Section II Planning Issues, Man-Made Hazards – Noise, page II-B1-7.

Schools

- North Shore Elementary School (765 N. Stanfield Cutoff)
- Big Bear Middle School (41275 Big Bear Boulevard)

Library

- Big Bear Lake Branch Library (41930 Garstin Drive)

Hospitals

- Big Bear Valley Community Hospital (41870 Garstin Road)

Table 5.7-2
Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure			
	Ldn or CNEL, dBA			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 - 85
Transient Lodging - Motel, Hotels	50 - 65	60 - 70	70 - 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 - 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA

Source: General Plan Guidelines, Office of Planning and Research, California, November 1998, page 187.

Notes:

NORMALLY ACCEPTABLE - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE - New Construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE - New construction or development should generally not be undertaken.

NA: Not Applicable

**Table 5.7-3
Interior/Exterior Noise Level Standards – Mobile Noise Sources**

Land Use		Ldn (or CNEL), dB	
Categories	Uses	Interior*	Exterior**
Residential	Single and multi-family, duplex, mobile homes	45	60***
Commercial	Hotel, motel, transient lodging	45	60***
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institution/Public	Hospital, nursing home, school classroom, church library	45	65
Open Space	Park	N/A	65
* Indoor Environment excluding: bathrooms, kitchen, toilets, closets and corridors			
** Outdoor environment limited to: Private yard of single family dwellings Multi-family private patios or balconies Mobile home parks Hospital/office building patios Park scenic areas School playgrounds Hotel and motel recreation areas			
*** An exterior noise level up to 65 dB (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 (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 General Plan, Section II – Planning Issues, Man-Made Hazards – Noise, Figure II-8. pg II-B1-6.			

**Table 5.7-4
Hourly Noise Level Performance Standards – Locally-Regulated Sources***

Land Use Category	7:00 a.m.– 10:00 PM		10:00 p.m. – 7:00 AM	
	Leq	Lmax	Leq	Lmax
Residential or other noise-sensitive receivers	55 dBA	75 dBA	45 dBA	65 dBA
* Noise sources which 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.				
Source: San Bernardino County General Plan, Section II – Planning Issues, Man-Made Hazards – Noise, Figure II-9. pg II-B1-7.				

Churches²

- Seventh Day Adventist (340 E. North Shore Drive)
- St. Joseph's Catholic Church of Big Bear (42242 North Shore Drive)
- Church of Jesus Christ of Latter-Day Saints (400 E. North Shore Drive)
- St. Columba's Episcopal Church (42324 North Shore Drive)
- Shepherd in the Pines Lutheran Church (42450 North Shore Drive)
- Center for Creative Living (816 W. Big Bear Boulevard)
- First Baptist Church of Big Bear Valley (41960 Big Bear Boulevard)
- Church of Christ (41035 Big Bear Boulevard)
- Bear Valley Community Church (40946 Big Bear Boulevard)
- Assembly of God (41965 Garstin Road)
- Big Bear Believer's Chapel (42180 Moonridge Road)
- First Church of Christ Scientist (547 Cottage Lane)
- Big Bear Foursquare Church (101 E. Mojave)
- Big Bear Christian Center (800 Greenspot)
- Jehovah's Witnesses (255 Catalina Street)
- United Methodist Church (1001 Holden Avenue)
- Calvary Chapel of Big Bear (713 Stocker Road)
- Presbyterian Church (575 Prairie Lane)

Parks and Recreational Areas

- Grout Bay Park (located at southwestern corner of Grout Bay);
- Grout Bay Recreation Area (located west of Grout Bay);
- Dana Point Park (located at northern side of Grout Bay);
- Serrano Campgrounds (located southwest of the intersection of Holcomb Valley Road and Highway 38);
- Meadows Edge Park (Located to the east of Bluebird Lane and adjacent to the northern side of Big Bear Lake);
- San Bernardino National Forest Lands (refer to Section 5.8, *Biological Resources*); and
- Big Bear Lake (also refer to Section 5.8, *Biological Resources*).

EXISTING NOISE ENVIRONMENTS

COMPUTER MODELING

The existing and future roadway noise levels within the vicinity of the proposed Project were projected using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108) together with several roadway and 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. The model does not account for ambient noise levels (i.e., noise from adjacent land uses) or topographical differences between the roadway and

² Source: Big Bear Chamber of Commerce website. July 2002. <http://www.bigbearchamber.com/church.htm>

adjacent land uses. Noise projections are based on modeled vehicular traffic as derived from the Project Traffic Study.

A 35 to 45 mile per hour (mph) average vehicle speed was assumed for existing conditions (varies depending on roadway) based on empirical observations and posted maximum speeds along the adjacent roadways. ADT estimates were obtained from the Project traffic report (refer to Appendix 15.3, *Traffic Data*).

EXISTING NOISE LEVELS

Table 5.7-5, *Existing Traffic Noise Levels*, indicates the location of the 60, 65, and 70 CNEL noise contours associated with vehicular traffic along local roadways as modeled with the aforementioned FHWA computer model. Traffic noise along three major roadways was modeled to estimate existing noise levels from mobile traffic. These roadways include North Shore Drive, Stanfield Cutoff, and Big Bear Boulevard, as described in Table 5.7-5.

Table 5.7-5
Existing Traffic Noise Levels
(Based on Peak Month Traffic Volumes)

Roadway Segment	Average Daily Traffic	dBA @ 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 <i>Traffic Analysis</i> report (refer to Appendix 15.3, <i>Traffic Data</i>).					
Note:					
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., constitute a periodic noise around the perimeter of Big Bear Lake. According to the Big Bear Municipal Water District, during the 1999 boating season, the average daily use of boats on the Lake was approximately 199 (refer to Section 5.2, *Recreation*).

Per the requirements of the Big Bear Municipal Water District, lake activities and boating operations must comply with the following general regulations:

- Speed Limit. 35 MPH maximum; 10 MPH from sunset to 7:00 AM; 5 MPH between buoys indicating same and the shoreline; 3 MPH in Papoose Bay, Canvasback Cove and Mallard Lagoon.
- Mufflers. No boat shall operate with excessive noise, per the requirements of Harbor and Navigation Code 654.
- Launching. Boats requiring trailers may be launched only from designated launch ramps. All other boats may be carried and launched at designated recreational or public access points around the Lake after obtaining a permit.
- Mooring. Mooring or tying to navigational markers is prohibited. Overnight mooring or beaching of boats along the shoreline is prohibited.
- Water-skiing. Hours of water-skiing are between 7:00 a.m. and sunset.

Harbor and Navigational Code 654 states that:

“Muffler requirements: The exhaust of every internal combustion engine used on any motorboat shall be effectively muffled at all times to prevent any excessive or unusual noise and as may be necessary to comply with the provisions of Section 654.05.

The provisions of this section shall not apply to motorboats competing under a local public entity or United States Coast Guard permit in a regatta, in a boat race, while on trial runs, or while on official trials for speed records during the time and in the designated area authorized by the permit. In addition, this section shall not apply to motorboats preparing for a race or regatta if authorized by a permit issued by the local entity having jurisdiction over the area where the preparations will occur.”

Harbor and Navigational Code 654.05 states that:

“Motorboat noise: No person shall operate any motorboat in or upon the inland waters of this state in such a manner as to exceed the following noise levels:

- (a) For engines manufactured before January 1, 1976, a noise level of 86 dBA measured at a distance of 50 feet from the motorboat.*
- (b) For engines manufactured on or after January 1, 1976, and before January 1, 1978, a noise level of 84 dBA measured at a distance of 50 feet from the motorboat.*
- (c) For engines manufactured on or after January 1, 1978, a noise level of 82 dBA measured at a distance of 50 feet from the motorboat.*
- (d) Testing procedures employed to determine such noise levels shall be in accordance with the exterior noise level measurement procedure for pleasure motorboats recommended by the society of Automotive*

Engineers in its recommended practice designated SAEJ34. The department may, by regulation, amend such testing procedures when deemed necessary to adjust to advances in technology.

The provisions of this section shall not apply to motorboats competing under a local public entity or United States Coast Guard permit in a regatta, in a boat race, while on trial runs, or while on official trials for speed records during the time and in the designated area authorized by the permit. In addition, addition, this section shall not apply to motorboats preparing for a race or regatta if authorized by a permit issued by the local entity having jurisdiction over the area where the preparations will occur.”

IMPACTS

SIGNIFICANCE CRITERIA

Appendix G, Initial Study Checklist, of the CEQA Guidelines contains analysis guidelines related to the assessment of noise impacts. These guidelines have been utilized as thresholds of significance for this analysis. As stated in Appendix G, a project may create a significant environmental impact if one or more of the following occurs:

- 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 (refer to Impact Statements 5.7-1 to 5.7-5);
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels (refer to Impact Statements 5.7-1);
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (refer to Impact Statements 5.7-2, 5.7-3, and 5.7-4);
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (refer to Impact Statements 5.7-1, 5.7-3, and 5.7-4);
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two 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 (refer to Section 10.0, *Effects Found Not To Be Significant*); and
- 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 (refer to Section 10.0, *Effects Found Not To Be Significant*).

Based on these standards, the effects of the proposed project have been categorized as either a “less than significant impact” or a “potentially significant impact.” Mitigation measures are recommended for potentially significant impacts. If

a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact. The standards used to evaluate the significance of impacts are often qualitative rather than quantitative because appropriate quantitative standards are either not available for many types of impacts or are not applicable for some types of projects.

SIGNIFICANCE OF CHANGES IN AMBIENT NOISE LEVELS

A project is considered to have a significant noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receptors. In addition to being concerned about the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing noise environment. If the existing noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, an impact may occur. Lacking adopted standards for evaluating such impacts, general considerations for community noise environments are that a change of over 5 dBA is readily noticeable and, therefore, is considered a significant impact (refer to Table 5.7-6, *Significance of Changes in Cumulative Noise Exposure*).³ Changes from 3 to 5 dBA may be noticed by some individuals and are, therefore considered an adverse environmental impact, since under these conditions sporadic complaints may occur. Changes in community noise levels of less than 3 dBA are normally not noticeable and are therefore considered less than significant.⁴ Adverse impacts would result if increases in noise levels are audible (increases equal to, or greater than 3 dBA), although the noise level may not exceed the significant impact criteria specified above.

**Table 5.7-6
Significance of Changes in Cumulative Noise Exposure**

Ambient Noise Level Without Project (Ldn or CNEL)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
< 60 dBA	+ 5.0 dBA or more
60-65 dBA	+3.0 dBA or more
> 65 dBA	+1.0 dBA or more
Sources: FICON, FHWA, and Caltrans as applied by Brown-Buntin Associates, Inc., 1997.	

Potential impacts are grouped below according to topic. The numbered mitigation measures at the end of this Section directly correspond with the numbered impact statements.

³ *Assessment of Noise with Respect to Community Response*, ISDR 1996, International Standardization, Switzerland.

⁴ *Fundamentals and Abatement of Highway Traffic Noise*, Bolt, Beranek and Newman, 1973.

SHORT-TERM CONSTRUCTION NOISE AND VIBRATION IMPACTS

5.7-1 *Grading and construction within the Project area would result in temporary noise and/or vibration impacts to nearby noise sensitive receptors. Analysis has concluded that construction noise and vibration impacts would be less than significant following compliance with the County requirements.*

Construction activities are generally of relatively short duration, lasting from a few days to a period of months. Groundborne vibration, groundborne noise, and other types of construction related noise impacts would typically occur during the initial site preparation, which can create the highest levels of groundborne vibration and noise. Generally, site preparation has the shortest duration of all construction phases. Activities that occur during this phase include earthmoving, removal of existing roadways and compacting of soils. High groundborne noise levels, ground vibration and other miscellaneous noise levels can be created during this phase due to the operation of heavy-duty trucks, backhoes, and front-end loaders.

Noise levels typically range from 73 to 96 dBA at 50 feet from individual pieces of equipment.⁵ The figures indicated in Table 5.7-7, *Typical Construction Equipment Noise Levels*, below, represents the “worst-case” day in which all equipment used during a given phase is operating. Because all equipment would not be operating on most days during construction, actual noise levels would, on many days, be lower than presented in Table 5.7-7.

**Table 5.7-7
Typical Construction Equipment Noise Levels**

Type of Equipment	Maximum Level, dB (50 feet; thence)
Scrapers	88
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

In addition to construction noise from the project site, the construction periods would also cause traffic noise along access routes to the site due to movement of equipment and workers on the site. The primary heavy equipment construction tools/vehicles are expected to be moved on to the site once during the initial grading/construction period 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.

As stated in Table 5.7-3, the maximum permitted noise exposure to residential uses from mobile noise sources is 60 dB (Ldn or CNEL). However, an exterior noise level

⁵ United States EPA, 1971.

up to 65 dB (or CNEL) would be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of best available noise reduction technology and interior noise exposure does not exceed 45 dB (or CNEL) with windows and doors closed. According to Table 5.7-4, the maximum permitted noise exposure to residential uses from “locally-regulated sources” is 55 dBA Leq or 75 dBA Lmax from 7:00 a.m. to 10:00 p.m., and 45 dBA Leq or 65 dBA Lmax 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.

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/vibration 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 the noise-related policies in the County General Plan, and due to the relatively short period of construction, noise and 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.

LONG-TERM NOISE IMPACTS

5.7-2 *Implementation of the Moon Camp Project would generate additional vehicular travel on the surrounding roadway network, thereby resulting in noise level increases. Analysis has concluded that long-term noise impacts would be less than significant for all analyzed roadway segments in Year 2006 and Year 2025 traffic scenarios. No mitigation measures are recommended.*

Project implementation would result in additional traffic on adjacent roadways, thereby increasing vehicular generated noise in the vicinity of existing and proposed residential uses. As discussed in Section 5.3, *Traffic and Circulation*, traffic conditions were analyzed utilizing existing, Year 2006 and Year 2025 traffic volumes. For purposes of analyzing noise impacts associated with project-related traffic volumes, this section compares the following scenarios: 1) Existing Plus Other Development Traffic Conditions (Year 2006) versus Existing Plus Project Plus Other Development Traffic Conditions (Year 2006) and; 2) Existing Plus Other Development Traffic Conditions (Year 2025) versus Existing Plus Project Plus Other Development Traffic Conditions (Year 2025). Thus, in accordance with the project traffic study, with and without the proposed project scenarios were modeled for Year 2006 and Year 2025 traffic conditions.

According to the *Traffic Analysis* report, twenty-five percent (25%) 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)
- Big Bear Boulevard: East of North Shore Drive
(Existing ADT = 7,300)

Assuming a worst-case scenario of 220 trips (25 percent of 880 trips) along North Shore Drive, north of Big Bear Boulevard and Dam, under existing conditions, the vehicular noise level along this roadway segment would increase by 0.42 dBA. Thus, noise impacts along this roadway segment would be less than significant based on the significance criteria as stated within Table 5.7-6.

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 fifteen percent (15%) and ten percent (10%) of the 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 project generated traffic would be less than 0.42 dBA. Thus, according to the significance criteria as stated within Table 5.7-6, noise impacts along these roadway segments would be less than significant under existing and future traffic scenarios.

YEAR 2006 TRAFFIC CONDITIONS

Noise levels within the vicinity of the proposed project area were modeled for with and without project scenarios for 2006 traffic conditions to determine the location and extent of future vehicular generated noise conditions. Table 5.7-8, *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 5.7-8, under the “2006 Without 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).

As stated in Table 5.7-8, under the “2006 With 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 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 5.7-8 also compares noise levels under the “2006 Without Project” scenario with the “2006 With Project” scenario. Based on the information cited in Table 5.7-8, 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 as stated within Table 5.7-6, *Significance of Changes in Cumulative Noise Exposure*.

Table 5.7-8
Exterior Noise Exposure Adjacent to Nearby Roadways, 2006
(Based on Peak Month Traffic Volumes)

2006 Without Project						2006 With Project					Difference in dBA @100 Feet from Roadway
Roadway Segment	Average Daily Traffic	dBA @ 100 Feet from Roadway Centerline ¹	Distance from Roadway Centerline to: (Feet)			Average Daily Traffic	dBA @ 100 feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			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
Traffic data obtained from the <i>Traffic Analysis</i> report (refer to Appendix 15.3, <i>Traffic Data</i>). 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.											

In summary, based on the significance criteria established in Table 5.7-6, the proposed Moon Camp Project would not create significant vehicular related noise impacts along the analyzed roadway segments based on 2006 traffic conditions.

YEAR 2025 TRAFFIC CONDITIONS

Noise levels within the vicinity of the proposed project area were modeled for with and without project scenarios for 2025 traffic conditions to determine the location and extent of future vehicular generated noise conditions. Table 5.7-9, *Exterior Noise Exposure Adjacent to Nearby Roadways, 2025*, 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 5.7-9, under the “2025 Without 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 stated in Table 5.7-9, under the “2025 With 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 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 5.7-9
Exterior Noise Exposure Adjacent to Nearby Roadways, 2025
(Based on Peak Month Traffic Volumes)

2025 Without Project						2025 With Project					Difference in dBA @100 Feet from Roadway
Roadway Segment	Average Daily Traffic	dBA @ 100 Feet from Roadway Centerline ¹	Distance from Roadway Centerline to: (Feet)			Average Daily Traffic	dBA @ 100 feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			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
Traffic data obtained from the <i>Traffic Analysis</i> report (refer to Appendix 15.3, <i>Traffic Data</i>).											
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.											

Table 5.7-9 also compares noise levels under the “2025 Without Project” scenario with the “2025 With Project” scenario. Based on the information cited in Table 5.7-9, 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 as stated within Table 5.7-6, *Significance of Changes in Cumulative Noise Exposure*.

In summary, based on the significance criteria established in Table 5.7-6, the proposed Moon Camp Project would not create significant vehicular related noise impacts along the analyzed roadway segments based on 2025 traffic conditions.

STATIONARY NOISE

5.7-3 *Implementation of the Moon Camp project would result in on-site noise associated with residential and parking lot activities and boat loading/unloading activities at the marina. Analysis has 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.

Project implementation would result in stationary noise source impacts on-site.⁶ These sources would include the typical residential noise sources and marina activities, including the adjacent parking lot. The potential impact from these sources were analyzed in terms of their proximity to the nearest off-site sensitive receptors.

Residential Areas

Development of the residential lots adjacent to residences located to the north (along Flicker Road), west (along Oriole Lane) and east (along North Shore Drive) would create new stationary noise typical of any residential development. Noise that is typical of residential areas includes such things as 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 produce noise levels greater than 60dBA. Noise from residential stationary sources would primarily occur during the “daytime” hours of 7:00 a.m. to 10:00 p.m. Furthermore, the residence would be required to comply with the noise standards set forth in the County General Plan. It is stated in the County’s General Plan 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 5.7-4). Thus, noise impacts from the residential uses are anticipated to be less than significant in this regard.

Marina Facilities

The project proposes to construct a marina on Big Bear Lake and an associated parking lot at the southwest corner of the site. Surface parking lots generate instantaneous maximum sound levels from tire squeals, trash pick-up, delivery trucks, lot sweeping, door slamming, back-up alarms, and engine start-ups (refer to Table 5.7-10, *Maximum Noise Levels Generated by Parking Lots*). 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 roads and typical community noise sources. Since the nearest existing residential areas are located some 500 feet 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 project site would be below both the daytime and nighttime noise standards at the nearest existing residential uses. Thus, impacts are considered to be less than significant in this regard.

⁶ Stationary noise levels diminish at the rate of 6 dBA per doubling of distance, in comparison to mobile noise sources that diminish at the rate of 4.5 dBA per doubling.

**Table 5.7-10
Maximum Noise Levels Generated by Parking Lots**

Event	Maximum Noise Level (dBA AT 50 FEET)
Door Slam	60 to 70
Engine Start-Up	60 to 70
Car Pass-by	55 to 70
Source: Mestre Greve Associates.	

WATERCRAFT NOISE

5.7-4 *Implementation of the Moon Camp project would result in increased watercraft activities on Big Bear Lake. Analysis has 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.*

The Moon Camp Project proposes to construct approximately 100 boat docks (dependent upon demand) on the southwest corner of the project site, located on the north shore of Big Bear Lake. As stated in Section 5.2, *Recreation*, the 100 dock slips, if multiplied by the weekend use factor of 9 percent, would add approximately 9 boats per day to the daily average number of boats using the lake.

All 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 project would add approximately 9 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, including Harbor and Navigational Code 654 (refer to page 5.7-11), 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.

CUMULATIVE

5.7-5 *Implementation of the Moon Camp Project, combined with cumulative projects, would increase the ambient noise levels in the site vicinity. Impact analysis and mitigation of impacts are determined on a project-by-project basis.*

Implementation of the proposed project, combined with development of cumulative projects, would increase ambient noise levels in the site vicinity. This increase would be due to both vehicular traffic noise along local roadways and stationary noise

sources associated with development. 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. As previously stated above, the proposed project, as well as cumulative development projects, would be individually required to reduce noise impacts to below County noise standards and demonstrate adherence to Development Code and General Plan requirements.

MITIGATION MEASURES

This section directly corresponds to the identified Impact Statements in the impacts subsection.

SHORT-TERM CONSTRUCTION NOISE AND VIBRATION IMPACTS

- 5.7-1a Construction activities shall be limited to the hours of 7:00 a.m. ~~and to~~ 7:00 p.m. Monday to Saturday and prohibited on Sundays and Federal Holidays.
- 5.7-1b All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the County Engineer.
- 5.7-1c Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receptors, to the satisfaction of the County Engineer.
- 5.7-1d Stockpiling and staging areas shall be located as far as practical from noise sensitive receptors during construction activities, to the satisfaction of the County Engineer.

LONG-TERM NOISE IMPACTS

- 5.7-2 No mitigation measures are recommended.

STATIONARY NOISE

- 5.7-3 No mitigation measures are recommended.

WATERCRAFT

- 5.7-4 No mitigation measures are recommended.

CUMULATIVE

- 5.7-5 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

No unavoidable significant impacts related to noise have been identified following implementation of recommended mitigation measures and compliance with applicable requirements set forth by the County of San Bernardino and the Big Bear Municipal Water District.

5.8 BIOLOGICAL RESOURCES

The purpose of this Section is to identify existing biological resources on-site and in the vicinity, analyze potential Project-related impacts to these resources (including sensitive species) and recommend mitigation measures to reduce the significance of impacts that are identified. This Section describes the biological character of the site in terms of plants, wildlife, and wildlife habitats and analyzes the biological significance of the site in view of federal, state and local laws and policies. Information in this Section is based on the *Biological Resources Assessment* and Focused Surveys conducted by BonTerra Consulting (July 2003). The Biological Technical Report was prepared in accordance with accepted scientific and technical standards that are consistent with the requirements of the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). This Section is also based on the Delineation of Jurisdictional Waters conducted by RBF Consulting (March 2002). Information is included in Appendix 15.6, *Biological Resources Information*.

EXISTING CONDITIONS

SURVEY METHODOLOGIES

This section describes the methodologies used to conduct the biological field surveys for the proposed Project. The results of these survey efforts are discussed in the *Existing Biological Resources* Section.

VEGETATION MAPPING AND GENERAL PLANT SURVEYS

A general reconnaissance field survey was conducted in December, 2001 to evaluate the potential of the Project site to support special status plants and animals and determine the need for further focused biological surveys. Additional field survey were conducted in May and June, 2002 to identify the vegetation types and plant species present on the Project site. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for later identification. Plants were identified using taxonomic keys in Hickman, Munz, and Abrams. Taxonomy follows Hickman for scientific and common names. Plant community classifications follow Holland.

GENERAL WILDLIFE SURVEYS

Wildlife species observed during the general reconnaissance field survey were recorded in field notes. The Project site was also evaluated for its potential to support special status wildlife species that are known or are expected to occur in the region. Additionally, all wildlife species observed during focused surveys were recorded in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and logs. Birds were identified by visual and auditory recognition. Mammals were identified by visual recognition and by identifying diagnostic sign, including scat, footprints, scratch-outs, burrows, and trails. Taxonomy and nomenclature for wildlife generally follow American

Ornithologist's Union (AOU) for birds and Laudenslayer et al. for all other terrestrial vertebrates.

FOCUSED SURVEYS

Special Status Plant Species. Special status plant surveys were conducted in the spring and summer of 2002. All areas of the Project site containing native habitats potentially suitable for special status species were sampled using meandering transects. For a detailed discussion of survey methods refer to Appendix 15.6, *Biological Resources Information*.

Rubber Boa. Focused surveys for the rubber boa (*Charina bottae*) were conducted in the spring and summer of 2002. The survey effort consisted of three-drift fence and pitfall trapping periods, and five visual encounter surveys. For a detailed discussion of survey methods refer to Appendix 15.6, *Biological Resources Information*.

Southwestern Willow Flycatcher. Five focused surveys for the southwestern willow flycatcher (*Empidonax trailii*) were conducted during the spring and summer of 2002 per the guidelines of the U.S. Fish and Wildlife Service (USFWS). For a detailed discussion of survey methods refer to Appendix 15.6, *Biological Resources Information*.

California Spotted Owl. Focused surveys for the California spotted owl (*Strix occidentalis*) were conducted from April through June 2002. Six nighttime surveys and one roost location survey were performed on the Project site. Adjacent areas in the vicinity of the Project site were also surveyed to determine if off-site individuals or pairs were foraging on the Project site. For a detailed discussion of survey methods refer to Appendix 15.6, *Biological Resources Information*.

Bald Eagle. Focused surveys for the bald eagle (*Haliaeetus leucocephalus*) were conducted in February 2002. Four surveys were conducted to identify which trees on the Project site were used most frequently by the bald eagle for perching and/or roosting. In addition, a records search was conducted to characterize historic bald eagle wintering activity and tree use on the Project site and in the vicinity of Big Bear Lake. For a detailed discussion of survey methods refer to Appendix 15.6, *Biological Resources Information*.

Tree Surveys. A Forester Report was prepared in July 2001 to provide information on timber stand composition, condition, site quality, soil classification and characteristics, and impact of construction and development on the Project site. The report also provides guidelines for the protection of trees and prevention of insect infestation during the construction process. A complete copy of the report is included in Appendix 15.6, *Biological Resources Information*.

EXISTING BIOLOGICAL RESOURCES

This section describes the biological resources that either occur or potentially occur within the Project site or in the immediate vicinity. Vegetation types, wildlife populations and movement patterns, special status vegetation types, and special

status plant and wildlife species either known or potentially occurring are discussed below.

VEGETATION TYPES

Four vegetation types occur within the Project site. Exhibit 5.8-1, *Biological Resources*, illustrates their distribution and Table 5.8-1, *Existing Vegetation Types on the Project Site*, summarizes the extent of vegetation types present within the Project site. Each of the vegetation types observed during field surveys are described below.

**Table 5.8-1
Existing Vegetation Types on the Project Site**

Vegetation Type	Acreage
Jeffrey Pine Forest	54.91
Pebble Plain	0.69
Lake Shoreline	4.14
Developed	2.82
Total	62.56

Jeffrey Pine Forest. Jeffrey pine forest occurs on 54.91 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 integerrimus*), 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.

Portions of the Jeffrey pine forest on the Project site provide suitable habitat for listed Threatened and Endangered plant species. In particular, approximately 17.38 acres containing few trees and fairly open canopy where Wright’s matting buckwheat (*Eriogonum wrightii* ssp. *subscaposum*) occurs are suitable habitat for the federally-listed Threatened ash-gray Indian paintbrush, CNPS 1B listed Parish’s rock-cress (*Arabis parishii*), and CNPS 1B listed silver-haired ivesia. For this reason, open Jeffrey pine forest is shown as a separate vegetation type on Exhibit 5.8-1. Additionally, areas within the Jeffrey pine forest where herbaceous cover is dominated by Wright’s matting buckwheat are identified on Exhibit 5.8-1.

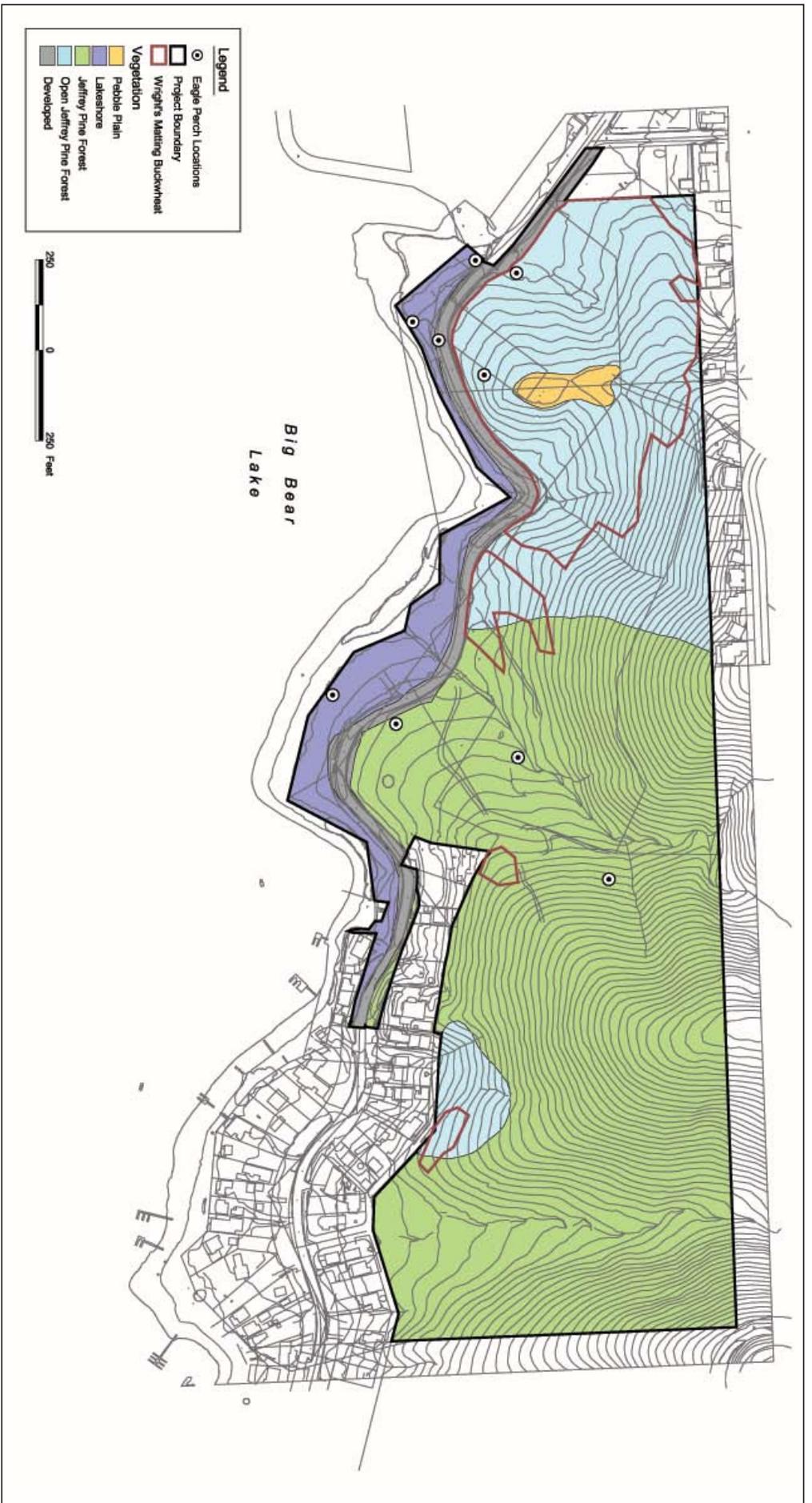
Within the Jeffrey pine forest onsite, tree resources consist of unevenly aged, pine stands composed of approximately 85 percent Jeffrey pine, eight percent western juniper, six percent singleleaf pinyon pine, and less than 1 percent of scattered white fir and black oak. Site quality has been rated medium Class 4 according to the criteria in the Forester's Handbook. The medium Class 4 rating describes the site as having 40 to 59 percent tree cover (medium cover) with small trees of conifer crown diameter 12 to 24 feet, and trunk diameter at breast height (dbh) of 11 to 24 inches. A total of 2,772 trees six inches in diameter or larger was calculated from aerial photographs. These trees grow on soils classified as 2/3 Morical-Hecker in the southern portion and 1/3 Pacifico-Wapi in the northern portion. Morical-Hecker soils are very deep with an effective rooting depth of 40 inches, and have high moisture retention capability, moderate erosion hazard, and a good timber productivity rating. Pacifico-Wapi soils are shallow, with a 10-20 inch effective root depth, low moisture holding capacity, high erosion hazard, and a poor capacity for tree seedling survival and growth without supplemental irrigation.

The overall condition of trees on the property is classified as fair. Scattered groups of large Jeffrey pine and juniper are host to moderate amounts of dwarf mistletoe (*Phorodendron* sp.) and several saplings and small pole pines under these trees have become heavily infested. Although a large number of dead trees were observed on the site, only one tree was observed to have been recently killed by bark beetles. Given the current drought situation and beetle population, there is a high potential for additional tree mortality from insect attack.

Pebble Plain. Pebble plain occurs on 0.69 acre of the Project site north of State Route 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.

Portions of the pebble plain habitat on the Project site have been subjected to disturbance by off-road vehicles. The Pebble Plain Habitat Management Guide and Action Plan was developed by the San Bernardino National Forest to provide management direction for long-term conservation of pebble plains and the rare plants associated with them. Closure of unauthorized vehicle routes through pebble plain habitat, signage, increased patrol, habitat acquisition, removal of non-native grasses, and public education are actions being taken to protect and enhance the habitat.

Lake Shoreline. Approximately 4.14 acres of the southern boundary of the Project site is formed by the shore of Big Bear Lake. Plant species along the shore itself consisted 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*)



Source: Borterra Consulting, July 2003.

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also occur in this vegetation type. Small patches of meadow transitioning into upland grassland occur along the lakeshore south of State Route 38. The extent of the meadows could not be determined or mapped in 2002 due to dry conditions. The lake was well below its maximum level in 2001 to 2002 due to acute drought conditions. Vegetation is patchy above the high-water level where small areas of Jeffrey pine forest are interspersed among open meadows and grasslands and scattered patches of arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*).

Developed. Developed areas occur on 2.82 acres along the shoreline of the 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 State Route 38 and existing turnouts are included in this vegetation type.

Jurisdictional Waters. A Delineation of Jurisdictional Waters was prepared in order to delineate U.S. Army Corps of Engineers' and California Department of Fish and Game's (CDFG) jurisdictional authority for unnamed drainages located within the Project site.

Prior to visiting the site, RBF conducted a review of USGS topographic maps (Quadrangle *Fawnskin, California*, dated 1996) and aerial photographs to identify areas that *may* fall under an agency's jurisdiction. Corps jurisdictional wetlands are delineated using the methods outlined in the Corps of Engineers *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 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, California Department of Fish and Game (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.~~ 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 June 28, 2004) is 6,727.8-feet above mean sea level (msl). The high water mark is reported to be 6,743.2 feet above msl.

There are three key agencies that regulate activities within inland streams, wetlands and riparian areas in California. The U.S. Army Corps of Engineers (Corps) Regulatory Program regulates activities pursuant to Section 404 of the Federal Clean Water Act, and Section 10 of the Rivers and Harbors Act. The California Department of Fish and Game (CDFG) regulates activities under the Fish and Game Code

Section 1600-1616, and the Regional Water Quality Control Board (RWQCB) under Section 401 of the Federal Clean Water Act and the California Porter-Cologne Act.

Waters of the U.S. (Wetland) Determination. The Corps and the EPA jointly define wetlands as: *Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (33 CFR Section 328.3(b)).

In order to be considered a wetland, an area must exhibit all three of the wetland parameters (i.e., vegetation, soil, and hydrology) per the evaluation criteria in the Wetland Delineation Manual. Based on the results of the field investigations, it was determined that all three parameters were not present within the drainages (hydric soils nor riparian vegetation were present). As a result, RBF identified no Corps wetlands on the Project site.

Waters of the U.S. (Non-Wetland) Determination. The unnamed drainages within the Project site exhibited evidence of flow (i.e., sediment/silt deposition) sufficient to document the OHWM (i.e., channel bed and bank lines), thus meeting the criteria for jurisdictional waters. Refer to Exhibit 5.8-2, *Jurisdictional Map*, for an illustration of jurisdictional boundaries.

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

California Department of Fish and Game (1602) Jurisdiction. Based on the results of the field observations and data collection, 0.15-acre of CDFG jurisdictional streambed waters was/were identified within the Project site. As with the Corps, Big Bear Lake would be considered jurisdictional by the CDFG, including the approximate 4.14-acre lake shoreline.

WILDLIFE INVENTORY

WILDLIFE

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. Terrestrial species may or may not require standing water for reproduction. 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.

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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, which 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 (*Sceloperus 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 winter 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. For example, the Anna's hummingbird (*Calypte anna*), which was observed on the Project site, is expected to occur during the breeding season (i.e., spring and summer) and will then migrate south for the winter.

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

- wild turkey (*Meleagris gallopavo*)
- band-tailed pigeon (*Columba fasciata*), great-horned owl (*Bubo virginianus*)
- 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*)
- red-breasted nuthatch (*Sitta canadensis*)
- white-breasted nuthatch (*Sitta carolinensis*)
- 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*)

Other resident species expected to occur on the Project site include the following:

- pied-billed grebe (*Podilymbus podiceps*)
- great blue heron (*Ardea herodias*)
- mallard (*Anas platyrhynchos*)
- gadwall (*anas strepera*)
- ruddy duck (*Oxyura jamaicensis*)
- red shouldered hawk (*Buteo lineatus*)
- red-tailed hawk (*Buteo jamaicensis*)
- American kestrel (*Falco sparverius*)
- American coot (*Fulica americana*)
- killdeer (*Charadrius vociferus*)
- rock dove (*Columba livia*)
- mourning dove (*Zenaida macroura*)
- pygmy nuthatch (*Sitta pygmaea*)
- brown creeper (*Certhia americana*)
- Bewick's wren (*Thryomanes bewickii*)
- American robin (*Turdus migratorius*)
- pine siskin (*Carduelis pinus*)

Montane conifer habitats in the San Bernardino Mountains typically experience mild, warm summer months. Given the mild climate and abundance of nesting habitat, several bird species are expected to occur on the Project site during the breeding season. Common breeding bird species observed on the Project site during surveys include Ana's hummingbird and western wood-peewee (*Contopus sordidulus*). Other common breeding species expected to occur on the Project site include the spotted sandpiper (*Actitis macularia*), violet green swallow (*Tachycineta thalassina*), and yellow-rumped warbler (*Dendroica coronata*).

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. 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*)
- house mouse (*Mus musculus*)

Easily detectable mammals that are expected to occur on the site include the following:

- Virginia opossum (*Didelphis virginiana*)
- porcupine (*Erethizon dorsatum*)
- long-tailed weasel (*Mustela frenata*)
- striped skunk (*Mephitis mephitis*)
- raccoon (*Procyon lotor*)
- mule deer (*Odocoileus hemionus*)
- bobcat (*Felis rufus*)

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*).

Bats occur throughout most of southern California and may use any portion of the Project site as foraging habitat. Most of the bats that could potentially occur onsite are inactive during the winter and either hibernate or migrate, depending on the species. 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.

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 State Route 38. The importance of this travel route may be diminished by the vehicle traffic hazard associated with crossing State Route 38 as well as the availability of similar habitat immediately adjacent to the east of the Project site.

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 California Native Plant Society (CNPS). In general, the principal reason an individual taxon (i.e., species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size, geographic range, and/or distribution resulting in most cases from habitat loss. Table 5.8-2, *Special Status Plant Species*, and Table 5.8-3, *Special Status Wildlife Species*, provide a summary of special status plant and wildlife species known to occur in the Project region including information on the status, potential for occurrence, and definitions for the various status designations. In addition, special status biological resources include vegetation types and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. Federal, state, and local government conservation programs have defined these resources. Sources used to determine the special status of biological resources are as follows:

- Plants – *Electronic Inventory of Rare and Endangered Vascular Plants of California*. (California Native Plant Society [CNPS] [2000]). California Natural Diversity Database (CNDDDB) *List of Special Plants* (CDFG [1998]). Various Federal Register notices from the USFWS regarding listing status of plant species.
- Wildlife – California Wildlife Habitat Relationships Database System (CDFG 1991); CNDDDB (CDFG 2000), Various Federal Register notices from the USFWS regarding listing status of wildlife species.
- Habitats – CNDDDB (CDFG 2000).

**Table 5.8-2
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	—	—	4	Low; marginally suitable habitat
<i>Allium parishii</i> Parish's onion	—	—	4	Low; above known elevation range
<i>Antennaria marginata</i> White-margined everlasting	—	—	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	—	—	1B	None; far below known elevation range
<i>Arabis dispar</i> Pinyon rock-cress	—	—	2	None; outside known geographic range (only occurs on desert-facing slopes)
<i>Arabis parishii</i> Parish's rock-cress	—	—	1B	Observed
<i>Arabis shockleyi</i> Shockley's rock-cress	—	—	2	None; outside known geographic range (only local occurrences on desert-facing slopes)
<i>Arenaria lanuginosa</i> ssp. <i>saxosa</i> Rock sandwort	—	—	2	Moderate; marginally suitable habitat
<i>Arenaria ursina</i> Big Bear Valley sandwort	FT	—	1B	High; suitable habitat
<i>Astragalus albens</i> Cushenbury milk-vetch	FE	—	1B	None; no suitable habitat (carbonate soils)
<i>Astragalus bicristatus</i> Crested milk-vetch	—	—	4	High; suitable habitat
<i>Astragalus lentiginosus</i> var. <i>sierrae</i> Big Bear Valley milk-vetch	—	—	1B	High; suitable habitat
<i>Astragalus leucolobus</i> Big Bear Valley woollypod	—	—	1B	Observed
<i>Atriplex parishii</i> Parish's smallscale	—	—	1B	None; no suitable habitat (alkali sink)
<i>Berberis fremontii</i> Fremont's barberry	—	—	3	None; no suitable habitat (presumed extinct in Cushenbury area)
<i>Botrychium crenulatum</i> Scalloped moonwort	—	—	2	None; no suitable habitat (marshes, bogs)
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa lily	—	—	1B	Moderate; marginally suitable habitat
<i>Calochortus plummerae</i> Plummer's mariposa lily	—	—	1B	None; above known elevation range
<i>Castilleja cinerea</i> Ash-gray Indian paintbrush	FT	—	1B	Observed
<i>Castilleja lasiorhyncha</i> San Bernardino Mountain owl's clover	—	—	1B	High; suitable habitat
<i>Dryopteris filix-mas</i> Male fern	—	—	2	Low; local rarity; outside known range

Table 5.8-2 – Continued
Special Status Plant Species Potentially Occurring Within the Project Region

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

Table 5.8-2 – Continued
Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
<i>Lewisia brachycalyx</i> Short-sepaled lewisia	—	—	2	Moderate; limited suitable habitat
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> Ocellated Humboldt lily	—	—	4	None; above known elevation range
<i>Lilium parryi</i> Lemon lily	—	—	1B	Low; limited suitable habitat
<i>Linanthus killipii</i> Baldwin Lake linanthus	—	—	1B	High; suitable habitat
<i>Malaxis monophyllos</i> ssp. <i>brachypoda</i> Adder's mouth	—	—	2	None; below known elevation range
<i>Mimulus exiguus</i> San Bernardino Mountain monkeyflower	—	—	1B	High; suitable habitat
<i>Mimulus purpureus</i> var. <i>purpureus</i> Purple monkeyflower	—	—	2	High; suitable habitat
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	—	—	1B	None; outside known geographic range
<i>Navarretia peninsularis</i> Baja navarretia	—	—	1B	Low; limited suitable habitat
<i>Oxytheca caryophylloides</i> Chickweed oxytheca	—	—	4	High; suitable habitat
<i>Oxytheca parishii</i> var. <i>cienegensis</i> Cienega seca oxytheca	—	—	1B	None; outside known geographic range
<i>Oxytheca parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	FE	—	1B	None; no suitable habitat (carbonate soils)
<i>Oxytropis oreophila</i> Mountain oxytrope	—	—	2	None; below known elevation range
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	—	—	2	High; suitable habitat
<i>Phacelia exilis</i> Transverse Range phacelia	—	—	4	High; suitable habitat
<i>Phacelia mohavensis</i> Mojave phacelia	—	—	4	High; suitable habitat
<i>Phlox dolichantha</i> Bear Valley phlox	—	—	1B	High; suitable habitat
<i>Poa atropurpurea</i> San Bernardino bluegrass	FE	—	1B	High; suitable habitat
<i>Poliomintha incana</i> Frosted mint	—	—	1A	None; no suitable habitat (dunes and sandy flats), above known elevation range
<i>Polystichum kruckebergii</i> Kruckeberg's sword fern	—	—	4	None; limited suitable habitat, outside known geographic distribution
<i>Populus angustifolia</i> Narrow-leaved cottonwood	—	—	2	None; outside known geographic range

Table 5.8-2 – Continued
Special Status Plant Species Potentially Occurring Within the Project Region

Species	Status ¹			Likelihood for Occurrence
	USFWS	CDFG	CNPS	
<i>Pyrocoma uniflora</i> ssp. <i>gossypina</i> Bear Valley pyrocoma	—	—	1B	High; suitable habitat
<i>Rupertia rigida</i> Parish's rupertia	—	—	4	High; suitable habitat
<i>Scutellaria bolanderi</i> ssp. <i>austromntanum</i> Southern mountain skullcap	—	—	1B	None, outside known geographic range, above known elevation range
<i>Sedum niveum</i> Davidson's stonecrop	—	—	4	None; no suitable habitat (rock ledges and cliffs)
<i>Selaginella asprella</i> Bluish spike-moss	—	—	4	Low; limited suitable habitat
<i>Senecio bernardinus</i> San Bernardino butterweed	—	—	1B	Low; limited suitable habitat
<i>Senecio ionophyllus</i> Tehachapi ragwort	—	—	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	—	—	2	High; suitable habitat
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	—	—	4	High; suitable habitat
<i>Streptanthus campestris</i> Southern jewelflower	—	—	1B	High; suitable habitat
<i>Swertia neglecta</i> Pine green-gentian	—	—	4	High; suitable habitat
<i>Taraxacum californicum</i> California dandelion	FE	—	1B	Low to moderate (see text); suitable habitat
<i>Thelypodium stenopetalum</i> Slender-petaled thelypodium	FE	—	1B	None; no suitable habitat (alkaline meadows)
<i>Trichostema micranthum</i> Small-flowered bluecurls	—	—	4	High; suitable habitat
<i>Viola pinetorum</i> ssp. <i>grisea</i> Grey-leaved violet	—	—	1B	Low; outside known geographic range
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				
CNPS				
1A Plants Presumed Extinct in California				
1B Plants Rare, Threatened, or Endangered in California and Elsewhere				
2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere				
3 Plants About Which We Need More Information- A Review List				
4 Plants of Limited Distribution - A Watch List				

**Table 5.8-3
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	—	Low; above known elevation range, limited suitable habitat
Amphibians			
<i>Ensatina escholtzii croceater</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
<i>Charina bottae umbricata</i> Southern rubber boa	SOC	ST	Low; limited suitable habitat
<i>Cnemidophorus tigris multiscutatus</i> Coastal western whiptail	SOC	—	Moderate; suitable habitat
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	SOC	—	None; above known elevation range, no suitable habitat
<i>Diadophis punctatus modestus</i> San Bernardino ringneck snake	SOC	—	Low; limited suitable habitat
<i>Lampropeltis zonata parvirubra</i> San Bernardino Mountain kingsnake	SOC	—	Moderate; marginally suitable habitat
<i>Lichanura trivirgata roseofusca</i> Coastal rosy boa	SOC	—	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	—	Observed

Table 5.8-3 – Continued
Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status ¹		Likelihood for Occurrence
	USFWS	CDFG	
<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	—	SSC	None; no suitable habitat
Birds			
<i>Accipiter cooperii</i> Cooper's hawk	—	SSC	Nesting: Moderate Foraging: High
<i>Accipiter gentilis</i> Northern goshawk	SOC	SSC	Nesting: None Foraging: Moderate
<i>Accipiter striatus</i> Sharp-shinned hawk	—	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	—	SSC	Nesting: None Foraging: High
<i>Asio otus</i> Long-eared owl	—	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	—	SSC	Nesting: None Foraging: Low
<i>Cypseloides niger</i> Black swift	—	SSC	Nesting: None Foraging: Moderate
<i>Dendroica petechia</i> Yellow warbler	—	SSC	Nesting: None Foraging: Moderate
<i>Elanus leucereus</i> White-tailed kite	—	FP	Nesting: Low Foraging: Low
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	FE	SE	Nesting: Low Foraging: Moderate; rare migrant
<i>Eremophila alpestris actia</i> California horned lark	—	SSC	Nesting: None Foraging: None; above known elevation range

Table 5.8-3 – Continued
Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status ¹		Likelihood for Occurrence
	USFWS	CDFG	
<i>Falco columbaris</i> Merlin	—	SSC	Nesting: None Foraging: Low
<i>Falco mexicanus</i> Prairie falcon	—	SSC	Nesting: None Foraging: Low
<i>Falco peregrinus anatum</i> American Peregrine falcon	—	FE	Nesting: None Foraging : Low
<i>Haliaeetus leucocephalus</i> Bald eagle	FE	SE	Nesting: None Foraging: Observed in winter
<i>Lanius ludovicianus</i> Loggerhead shrike	SOC	SSC	Nesting: None Foraging: None; above known elevation range
<i>Piranga flava</i> Hepatic tanager	—	SSC	Nesting: Low Foraging: Low
<i>Progne subis</i> Purple martin	—	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	—	SSC	Nesting: None Foraging: Low
Mammals			
<i>Antrozus pallidus</i> Pallid bat	—	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	—	Roosting: Low Foraging: High
<i>Myotis evotis</i> Long-eared myotis	SOC	—	Roosting: High Foraging: High
<i>Myotis lucifugus</i> Occult little brown bat	SOC	SSC	Roosting: High Foraging: High

Table 5.8-3 – Continued
Special Status Wildlife Species Potentially Occurring Within the Project Region

Species	Status ¹		Likelihood for Occurrence
	USFWS	CDFG	
<i>Myotis thysanodes</i> Fringed myotis	SOC	—	Roosting: Low Foraging: Moderate
<i>Myotis volans</i> Long-legged myotis	SOC	—	Roosting: Moderate Foraging: Moderate
<i>Myotis yumanensis</i> Yuma myotis	SOC	—	Roosting: Low Foraging: Moderate
<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 ¹ 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. 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.			

DEFINITIONS OF SPECIAL STATUS BIOLOGICAL RESOURCES

Special status habitats are vegetation communities, associations, or subassociations that support concentrations of special status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although special status habitats are not afforded legal protection unless they support protected species, potential impacts on them may increase concerns and mitigation suggestions by resources agencies.

A Federally Endangered species is one facing extinction throughout all or a significant portion of its geographic range. A Federally Threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The presence of any federally Threatened or Endangered species on a Project site generally imposes severe constraints on development, particularly if development would result in “take” of the species or its habitat. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct. Harm in this sense can include any disturbance to habitats used by the species during any portion of its life history.

The reference to “proposed species” are those officially proposed by the USFWS for addition to the Federal Threatened and Endangered species list. Because proposed species may become listed as Threatened or Endangered prior to or during implementation of a proposed development project, they are treated in this EIR as though they are listed species.

The State of California considers an Endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. Threatened species is a species in such small numbers throughout its range that it is likely to become an Endangered species in the near future in the absence of special protection or management. A rare species is one present in such small numbers throughout its range that it may become Endangered if its present environment worsens. Rare species applies to California native plants listed prior to the State Endangered Species Act. State Threatened and Endangered species are fully protected against take unless an incidental take permit is obtained from the wildlife agencies.

Federal Species of Concern are species (a “term of art” for former Category 2 candidates) with an informal designation by the USFWS for some declining species that are not federal candidates for listing at this time, but are noted in the CNDDDB (CDFG 2002a). This list of species is not actively maintained by the USFWS.

California Species of Special Concern is an informal designation used by the CDFG for some declining wildlife species that are not state candidates. This designation does not provide legal protection, but signifies that these species are recognized as special status by the CDFG.

Species that are California Fully Protected and Protected include those protected by special legislation for various reasons, such as the mountain lion and white-tailed kite. Fully protected species may not be taken or possessed at any time. California Protected Species include those species that may not be taken or possessed at any

time except under special permit from the department issued pursuant to Sections 650 and 670.7 of the California Code of Regulations, or Section 2081 of the Fish and Game Code.

Special Plant and Special Animal are general terms that refer to all of the species the CNDDDB is interested in tracking, regardless of their legal or protection status. This term includes species designated as any of the above terms but also includes species that may be considered biologically rare, restricted in distribution, declining throughout their range, are on the periphery of their range and are threatened with extirpation in California, are associated with special status habitats, or are considered by other state or federal agencies or private organizations to be sensitive or declining. Species of Local Concern are those that have no official status with the resource agencies, but are being watched because either there is a unique population in the region or the species is declining in the region.

The California Native Plant Society is a private organization that has developed an inventory of California's special status plant species. This inventory summarizes the distribution, rarity, and endangerment of California's vascular plants. This rare plant inventory is comprised of four lists. CNPS presumes that List 1A plant species are extinct in California because they have not been seen in the wild for many years. CNPS considers List 1B plants as rare, threatened, or endangered throughout their range. List 2 plant species are considered rare, threatened, or endangered in California but more common elsewhere. Plant species for which CNPS needs additional information are included on List 3. List 4 plant species are those of limited distribution in California whose susceptibility to threat appears low at this time.

SPECIAL STATUS VEGETATION TYPES

Pebble Plain

The pebble plain community found on the Project site is recognized as a special status vegetation type by local, state, and federal resources agencies. Pebble plain (also called pavement plain) is endemic to a 92-square-mile area in the San Bernardino Mountains at elevations between 6,000 and 7,500 feet above msl. Vegetation structure of pebble plain habitat is similar to the mat-forming structure of alpine sites at much higher elevations. Vegetation consists largely of well-spaced cushion-forming perennials and a variety of tiny annuals. Bunchgrasses and some succulents may also occur. Several special status plants, including Threatened or Endangered species, are known to occur on pebble plain and are discussed in the *Special Status Plants* section.

Pebble plain on the Project site occurs as a distinct open patch within the surrounding open Jeffrey pine forest. Much of the pebble plain habitat on the Project site has been subjected to disturbance by unauthorized off-road vehicle use. The disturbance has reduced vegetation cover, disturbed the natural hydrologic pattern, and perhaps reduced habitat quality for special status plants. However, based on National Forest management efforts at other sites, vehicle disturbance apparently does not permanently alter habitat suitability of this vegetation type.

Montane Meadow

Small patches of meadow transitioning into upland grassland occur along the lakeshore south of State Route 38. The extent of the meadows could not be determined or mapped in 2002 due to dry conditions. Meadows in the Big Bear Valley may be perennially saturated (i.e., wet meadows) or may have seasonally saturated soils during wet years (i.e., vernal meadows). This vegetation type is generally dominated by sedges (*Carex* spp.), rushes (*Juncus* spp.), and grasses (*Poa* spp., *Elymus* spp.). Dry meadows and the margins of wet meadows may also support big sagebrush (*Artemisia tridentata*) and timberline sagebrush (*Artemisia rothrockii*).

Meadow habitat in the San Bernardino Mountains is not officially recognized as a special status vegetation type by the CDFG but it is known to support several locally endemic plants [e.g., bird's foot checkerbloom (*Sidalcea pedata*), San Bernardino bluegrass (*Poa atropurpurea*), and California dandelion (*Taraxacum californicum*)] and is therefore considered to be of local concern. Additionally, the San Bernardino National Forest recognizes montane meadow habitat as a rare ecological community of concern.

SPECIAL STATUS PLANTS

Eighty-one special status plant species are known to occur in the Project region, 50 of which occur or have the potential to occur on the Project site. A brief description of the special status plant species that were determined to have potential to occur on the Project site are outlined below and summarized in Table 5.8-2. As indicated in Table 5.8-2, four special status plant species have been observed on the Project site.

Coville's Dwarf Abronia (*Abronia nana* ssp. *covillei*). Coville's dwarf abronia is a CNPS List 4 species that typically blooms from May to August. This perennial herb occurs in carbonate, sandy soils in Joshua tree woodland, pinyon-juniper woodland, subalpine coniferous forest, and upper montane coniferous forest between 5,200 and 9,200 feet above msl. This species occurs in the Inyo, Mono, and San Bernardino counties. The Project site provides marginally suitable habitat for this species and the potential for occurrence is considered to be low.

Parish's Onion (*Allium parishii*). Parish's onion is a CNPS List 4 species that typically blooms from April to May. This perennial, bulbiferous herb occurs in rocky soils of Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland between 3,000 and 6,000 feet above msl. This species occurs in the Imperial, Riverside, and San Bernardino counties. The Project site provides suitable habitat for this species but is above the known elevation range for this species and the potential for occurrence is considered to be low.

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. This 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.

Rock Sandwort (*Arenaria lanuginosa* ssp. *saxosa*). Rock sandwort is a CNPS List 2 species that typically blooms from July to August. This perennial herb occurs in mesic, sandy soils of subalpine, coniferous forests, and upper montane coniferous forests from approximately 5,900 to 9,000 feet above msl. It is found only in the San Bernardino Mountains in the state of California but also occurs in Arizona, Baja California, and elsewhere. The Project site provides marginally suitable habitat for this species and the potential for occurrence is considered to be moderate.

Big Bear Valley Sandwort (*Arenaria ursina*). Big Bear Valley sandwort is a federally-listed Threatened and CNPS List 1B species that typically blooms from May to August. This perennial herb occurs in mesic, rocky soils of pebble plain, and pinyon-juniper woodland from approximately 6,400 to 6,900 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.

Crested Milk-Vetch (*Astragalus bicristatus*). Crested milk-vetch is a CNPS List 4 species that typically blooms from May to August. This perennial herb occurs in sandy or rocky soils of lower and upper montane coniferous forests from approximately 5,500 to 8,200 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.

Big Bear Valley Milk-Vetch (*Astragalus lentiginosus* var. *sierrae*). Big Bear Valley milk-vetch is a CNPS List 1B species that typically blooms from April to August. This perennial herb occurs in gravelly or rocky soils of desert scrub, meadows and seeps, pinyon-juniper woodland, and upper montane coniferous forest from approximately 5,800 to 8,500 feet above msl. It is found in the San Bernardino, San Gabriel, San Jacinto, and Santa Rosa mountains. The Project site provides suitable habitat for this species and the potential for occurrence is considered to be high.

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.

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 was not observed during the 2002 botanical surveys.

However, it has a moderate potential to occur on the project site given the availability of marginally suitable habitat in mesic portions of Jeffrey pine forest.

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 Michael Brandman Associates (MBA) (MBA 2000) and the California Natural Diversity Data Base (CDFG 2001). Botanical surveys in 2002 identified populations of this species throughout approximately 11.8 acres of pebble plain and open Jeffrey pine forest in the western half of the project site where it appears to be parasitizing Wright's matting buckwheat (see Exhibit 3). Populations of this species were found to be more widespread than reported previously and would be expected to occur in higher concentrations within the mapped Wright's matting buckwheat areas during normal rainfall years.

San Bernardino Mountain Owl's Clover (*Castilleja applegateii* ssp. *martinii*). San Bernardino Mountain owl's clover is a CNPS List 1B species that typically blooms between June and August. This hemiparasitic, annual herb occurs in mesic chaparral, meadows and seeps, pebble plain, and upper montane coniferous forests from approximately 4,200 to 7,850 feet above msl. It is a California endemic found in Riverside and San Bernardino counties. This species was not observed during the 2002 botanical surveys. However, it has a high potential to occur on the project site given the availability of suitable habitat throughout the project site, especially within pebble plains and open Jeffrey pine forest where Wright's matting buckwheat occurs.

Male Fern (*Dryopteris filix-mas*). Male fern is a CNPS List 2 species that is typically fertile from July to September. This rhizomatous, perennial herb occurs in granitic, rocky soils of upper montane coniferous forests from approximately 7,800 to 10,200 feet above msl. This species is known from only two locations in the White Mountains and Holcomb Valley in Inyo and San Bernardino counties respectively. The project site provides suitable habitat; however, the project site is outside the known range of this local rarity and the potential for occurrence is considered to be low.

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.

Southern Mountain Buckwheat (*Eriogonum kennedyi* var. *austromontanum*). Southern mountain buckwheat is a Federally-listed Threatened and CNPS List 1B species that typically blooms between June and August. It is a mat-forming, woody perennial endemic to pebble plain habitats in Big Bear and Holcomb valleys in the San Bernardino Mountains from approximately 5,800 to 7,500 feet above msl. This species often serves as a host plant for the hemi-parasitic ash-gray Indian paintbrush and is also a food plant for the recently described, locally-endemic San Bernardino blue butterfly (*Euphilotes bernardino bernardino*). It is very similar to the more common Wright's matting buckwheat that is common on the project site. Southern mountain buckwheat was not seen during the 2002 botanical surveys and it has not been reported on the project site by other botanists (MBA 2000; CDFG 2001). However, it is considered to have a low potential to occur given that suitable habitat occurs within pebble plains on the project site.

Southern Sierra Woolly Sunflower (*Eriophyllum lanatum* var. *obovatum*). Southern Sierra woolly sunflower is a CNPS List 4 species that typically blooms from June to July. This perennial herb occurs in lower and upper montane coniferous forest from approximately 4,200 to 8,100 feet above msl. This species is found in the southern Sierra Nevada and western San Bernardino mountains. The project site provides suitable habitat for this species; however, the project site is on the margin of this species geographic range and the potential for occurrence is considered to be low.

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.

San Bernardino Mountains Gilia (*Gilia leptantha* ssp. *leptantha*). San Bernardino Mountains gilia is a List 1B species that typically blooms from June to August. This annual herb occurs in sandy or gravelly soils of lower montane coniferous forests from approximately 5,000 to 7,700 feet above msl. This species is endemic to the upper Santa Ana River watershed in the San Bernardino Mountains. The project site provides suitable habitat for this species; however, it has not been recorded in the Big Bear valley and the potential for occurrence is considered to be low.

Shaggy-Haired Alumroot (*Heuchera hirsutissima*). Shaggy-haired alumroot is a CNPS List 1B species that typically blooms from May to July. This rhizomatous, perennial herb occurs in rocky soils of subalpine coniferous forest, and upper montane coniferous forest above approximately 7,200 feet above msl. This species is endemic to the San Jacinto and Santa Rosa mountains with one unconfirmed record for the San Bernardino Mountains. The project site provides limited suitable habitat for this species and the potential for occurrence is considered to be low.

Parish's Alumroot (*Heuchera parishii*). Parish's alumroot is a CNPS List 1B species that typically blooms from June to July. It is a rhizomatous perennial herb that occurs in rocky soils of alpine boulder and rock fields, lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest above approximately 4,800 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 low.

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 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 mexic 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.

Lemon Lily (*Lilium parryi*). Lemon lily is CNPS List 1B species that typically blooms from July to August. It is a bulbiferous, perennial herb that occurs in lower and upper montane coniferous forests, meadows and seeps, and riparian scrub above approximately 4,000 feet above msl. This species is found in the mountain ranges of southern California and southeastern Arizona. The project site provides marginally suitable habitat for this species and the potential for occurrence is considered to be low.

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

Baja Navarretia (*Navarretia peninsularis*). Baja navarretia is a CNPS List 1B species that blooms from July to September. It is an annual herb that occurs in mesic, sandy soils in chaparral and lower montane coniferous forests between approximately 4,800 and 7,500 feet above msl. This species is found in the mountains of central and southern California and north Baja California. The project site provides limited suitable habitat for this species and the potential for occurrence is considered to be low.

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.

Cienega Seca *Oxytheca* (*Oxytheca parishii* var. *cienegensis*). The cienega seca oxytheca is a CNPS List 1B species that typically blooms from June to September. It is an annual herb that occurs in sandy, granitic soils in upper montane coniferous forest from approximately 7,000 to 8,000 feet above msl. This species is found along Coon Creek and Cienega Seca Creek in San Bernardino County. The project site provides suitable habitat for this species; however, the project site is well outside the known geographic range for this species and the potential for occurrence is considered to be low.

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

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

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 provides suitable habitat for this species and the potential to occur is considered to be high.

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 provides suitable habitat for this species and the potential to occur is considered to be high.

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.

Bluish Spike-Moss (*Selaginella asprella*). Bluish spike-moss is a CNPS List 4 species that typically blooms in July. It is a rhizomatous, perennial herb that occurs in granitic, rocky soils of cismontane woodland, lower and upper montane coniferous forests, pinyon-juniper woodland, and subalpine coniferous forest between approximately 5,200 to 8,800 feet above msl. This species occurs throughout southern California mountain ranges and Baja California. The project site provides limited suitable habitat for this species and the potential for occurrence is considered to be low.

San Bernardino Butterweed (*Senecio bernardinus*). San Bernardino butterweed is a CNPS List 1B species that typically blooms from May to July. It is a perennial herb that occurs in meadows and seeps, pebble plain, and upper montane coniferous forest between approximately 5,800 to 7,500 feet above msl. This species is endemic to the San Bernardino Mountains and is known from fewer than twenty occurrences. The project site provides limited suitable habitat for this species and the potential for occurrence is considered to be low.

Parish's Checkerbloom (*Sidalcea hickmanii* ssp. *parishii*). Parish's checkerbloom is a Federal Candidate for listing as Threatened or Endangered, State Rare, and CNPS List 1B species that typically blooms from June to July. It is a perennial herb that occurs in chaparral, cismontane woodland, and lower montane coniferous forest between 3,200 and 8,200 feet above msl. This species is found mainly in the San Bernardino Mountains and in a few localities in the Santa Ynez Mountains. The project site provides limited suitable habitat for this species and potential for occurrence is considered to be low.

Bird's Foot Checkerbloom (*Sidalcea pedata*). Bird's foot checkerbloom is a Federally- and State-listed Endangered and CNPS 1B species that typically blooms from May to July. It is a perennial herb that occurs in meadows and seeps, and pebble plain between approximately 5,200 and 8,100 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 to occur is considered to be low to moderate.

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.

California Dandelion (*Taraxacum californicum*). The California dandelion is a Federally-listed Endangered and CNPS List 1B species that typically blooms from May to July. It is a perennial herb that occurs in mesic meadows and seeps from approximately 6,300 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 to occur is considered to be low to moderate.

Slender-Petaled Thelypodium (*Thelypodium stenopetalum*). Slender-petaled thelypodium is a Federally- and State-listed Endangered and CNPS List 1B species that typically blooms from June to July. It is a perennial herb that occurs in mesic, alkaline meadows and seeps from approximately 6,200 to 7,200 feet above msl. This species is endemic to the San Bernardino Mountains with less than eight known populations in the Big Bear and Holcomb valleys. The project site contains marginally suitable habitat for this species and the potential to occur is considered to be low.

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 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.

Grey-Leaved Violet (*Viola pinetorum* ssp. *grisea*). Grey-leaved violet is a CNPS List 1B species that typically blooms in April. It is a perennial herb that occurs in meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest from approximately 4,800 to 11,100 feet above msl. This species is known from ten occurrences in Fresno, Kern, San Bernardino, and Tulare counties. There is disagreement about the range of this species. The project site provides suitable habitat for this species; however, the project site is outside the known geographic range for this species and the potential to occur is considered to be low.

SPECIAL STATUS WILDLIFE

Fifty-three special status wildlife species are known to occur within the region, 39 of which have the 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. A brief description of the special status wildlife species that were determined to have the potential to occur on the Project site is provided below and summarized in Table 5.8-3. As indicated in Table 5.8-3, one special status wildlife species (Southern sagebrush lizard) has been observed on the Project site.

Invertebrates

Andrew's Marble Butterfly (*Euchloe hyantis* ssp. *andrewsi*). Andrew's marble butterfly is a Federal Species of Concern. This species is found at elevations above 5,000 feet above msl near Lake Arrowhead and Big Bear Lake, and in other locations across the San Bernardino Mountains crest and north slopes. It is found primarily in pine and mixed conifer forests. The larval host plants for this subspecies are the Laguna Mountains jewelflower and *Arabis holboellii*. The Project site provides limited suitable habitat for this species; however, the Project site is above the known elevation range. The potential for this butterfly species to occur is considered to be low.

Amphibians

Yellow-Blotched Salamander (*Ensatina escholtzii croceater*). The yellow-blotched salamander is a Federal Species of Concern and State Species of Special Concern. This species is found at elevations up to 8,000 feet above msl among rotting logs and leaf litter in mixed stands of oaks and conifers. The Project site provides limited, marginally suitable habitat and the potential for it to occur is considered to be low.

Reptiles

Silvery Legless Lizard (*Anniella pulchra pulchra*). The silvery legless lizard is a Federal Species of Concern and a State Species of Special Concern. The silvery legless lizard inhabits areas with moist sandy soil, including dry washes, woodlands, riparian, and scrub communities at elevations ranging from sea level to about 5,000 feet above msl. The Project site provides a limited amount of potentially suitable habitat for this species; however, the Project site is above the known elevation range for this species and its potential to occur is considered to be low.

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 out crops for hibernation. Large downed logs and a

well-developed litter layer are considered important for cover and for maintaining soil moisture. Surveys for this species were conducted in the spring and summer of 2002. No southern rubber boas were encountered during surveys. Given the lack of historical records in the immediate vicinity of the Project site, and the negative results of two independent focused survey techniques, the southern rubber boa is not expected 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 Ringneck Snake (*Diadophis punctatus modestus*). The San Bernardino ringneck snake is a Federal Species of Concern and is considered locally rare in southwestern California. It inhabits scrub, chaparral, native grassland, and woodland communities. This species is difficult to detect due to its secretive behavior. It occurs in elevations from sea level to 7,000 feet above msl (Stebbins 1985). The Project site provides limited suitable habitat for this species and its potential to occur is considered to be low.

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.

Ferruginous Hawk (*Buteo regalis*). The ferruginous hawk is a Federal Species of Concern and a State Species of Special Concern. Ferruginous hawks occur from mid-fall through early spring in coastal southern California. They forage over grasslands and the ecotone between scrub and grasslands. The Project site provides a limited amount of suitable foraging habitat, but no nesting habitat, for this species. Therefore, its potential to occur on the Project site is considered to be low for foraging, with no potential for nesting.

Northern Harrier (*Circus cyaneus*). The northern harrier is a State Species of Special Concern. It is a regular winter migrant that occasionally breeds along the coast of southern California. Foraging habitat consists of marsh, grassland, and scrub habitats. The Project site provides limited suitable foraging habitat, but no nesting habitat, for this raptor. Therefore, its potential to forage on the Project site is considered to be low.

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.

White-Tailed Kite (*Elanus leucereus*). The white-tailed kite is a California Fully Protected species. This raptor typically nests in oaks, willows, and sycamores, and forages within adjacent grassland and scrub habitats. White-tailed kites show strong site fidelity to nest groves and trees. The most abundant prey species for this raptor includes the California vole, western harvest mouse, and house mouse. The project site provides limited suitable foraging and nesting habitat for this raptor. Therefore, its potential to occur on the Project site is considered to be low for nesting and foraging.

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. 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.

Merlin (*Falco columbaris*). The merlin is a State Species of Special Concern. In California, the merlin prefers vast open space areas such as estuaries, grasslands, and deserts where it hunts small flocking birds such as sandpipers, larks, sparrows, and pipits. The merlin is a very rare winter visitor to the Big Bear Lake area. The Project site provides suitable foraging habitat and perching locations, but no nesting habitat, for this raptor. Therefore, its potential to occur for foraging is considered to be low, and there is no potential for nesting.

Prairie Falcon (*Falco mexicanus*). The prairie falcon is a State Species of Special Concern. It is now a rare visitor to the coastal plain of southern California. Foraging habitat for this species consists of open habitats such as deserts, grasslands, rangelands, and marshes. For nesting, this large falcon uses ledges of cliff faces. The Project site provides suitable foraging habitat for this raptor, but no potentially suitable nesting habitat. Therefore, its potential to occur is considered to be low for foraging only.

American Peregrine Falcon (*Falco peregrinus*). The peregrine falcon is a State-listed Endangered species that, due to recent population gains, has been recently delisted as Endangered by the USFWS. No such delisting has been proposed by the state. Peregrine falcons prey almost exclusively on birds and use a variety of habitats, particularly wetlands and coastal areas, and nest on cliffs or building ledges. The Project site provides limited suitable foraging habitat for the peregrine falcon, but no potentially suitable nesting habitat. Therefore, its potential to occur on the Project site is considered to be low for foraging only.

Osprey (*Pandion haliaetus*). The osprey is a California Species of Special Concern. It is an uncommon winter visitor in southern California, but nesting has been documented at Lake Casitas near Ventura and Lake San Antonio in Monterey County (Garrett and Dunn 1981) and may occur elsewhere. The osprey would be expected to occur on the project site during spring migration or post-breeding wandering. The Project site provides roosting and foraging habitat for the osprey, but no potentially suitable nesting habitat. Therefore, its potential to occur on the Project site is considered to be low for foraging only.

Bald Eagle (*Haliaeetus leucocephalus*). The bald eagle is a State- and Federally-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 but is not expected to nest on the Project site. Surveys and records searches were conducted on the Project site in the winter of 2002 to determine bald eagle use of perch trees and favored roosting locations (refer to Appendix 15.6, *Biological Resources Information*). 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 locations are shown on Exhibit 5.8-1. 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.

Hepatic Tanager (*Piranga flava*). The hepatic tanager is a State Species of Special Concern. In southern California, this species is known to breed only in the San Bernardino Mountains. Breeding habitat consists of mature pinyon pine woodland with a mixture of taller conifers such as white fir or Jeffrey pine. Johnson and Garrett suggest this species may also occur in pine and deciduous oak woodlands on warm, arid slopes. The Project site provides limited suitable foraging and nesting habitat for this species and potential for occurrence is considered to be low for foraging and nesting.

Purple Martin (*Progne subis*). The purple martin is a State Species of Special Concern that historically occurred throughout all of the major mountain ranges in southern California. Many historic localities are no longer occupied and there are no known active localities in the San Bernardino Mountains. This species is a secondary cavity nester of hardwood and conifer forests. The Project site provides suitable habitat for this species; however, given the lack of records in the vicinity, the potential for occurrence is considered to be low for foraging and nesting.

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 15.6, *Biological Resources Information*). 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. Therefore, no nesting pairs presently occur on the Project site; however, individuals have a high potential to forage on the Project site.

Gray Vireo (*Vireo vicinior*). The gray vireo is a State Species of Special Concern. This species is a summer resident in a few highly localized areas on the coastal mountain ranges in southern California. It occurs on dry, desert-facing slopes in the San Gabriel, San Bernardino, and San Jacinto mountains. This species prefers stands of dense, mature chaparral dominated by chamise or redshank or on brushy slopes in pinyon-juniper woodlands. The Project provides limited, marginal habitat for this species. The potential for occurrence is considered to be low for foraging but there is no potential for breeding on the Project site.

Mammals

Pallid Bat (*Antrozus pallidus*). The pallid bat is a California Species of Special Concern that most commonly occurs in mixed oak and grassland habitats. This large bat roosts in rock crevices and in cavities of trees, especially oaks. The Project site provides potentially suitable roosting and foraging habitat for this species and it has a low potential to occur.

Spotted Bat (*Euderma maculatum*). The spotted bat is a Federal Species of Concern and State Species of Special Concern. Little is known about its distribution. Spotted bats forage in a wide variety of habitats but roost strictly in cliffs. The Project

site would provide foraging habitat for this species and it has a moderate potential to occur for foraging; however, no suitable roosting habitat is present.

California Mastiff Bat (*Eumops perotis californicus*). The California mastiff bat, the largest bat in the United States, is a Federal Species of Concern and a California Species of Special Concern. This species is a very wide-ranging and high-flying insectivore that typically forages in open areas with high cliffs. It roosts in crevices in small colonies. The Project site would provide limited foraging habitat for this species and it has a low potential to occur for foraging; however, no suitable roosting habitat is present.

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; however, the potential for this species to breed on the Project site is considered to be low as this species prefers to breed in relatively dense coniferous forests in proximity to riparian areas.

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.

ON-GOING REGIONAL AND LOCAL HABITAT CONSERVATION PROGRAMS

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 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 Environmental Impact Report (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. This *Biological Resources Assessment*, contained in Appendix 15.6, has been prepared as supporting documentation for the proposed Project 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 *Biological Resources Assessment* 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.

Migratory Bird Treaty Act (MBTA)

The 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 CEQA per guideline section.

IMPACTS

The determination of impacts in this analysis is based on a comparison of maps depicting Project grading limits and maps of on-site biological resources. All construction activities, including staging and equipment areas, are assumed to be contained within the limits of grading. Both direct and indirect impacts on biological resources have been evaluated. Direct impacts are those that involve the initial loss of habitats due to grading and construction. Indirect impacts are those that would be related to disturbance from construction activities (e.g., noise, dust) and use of the Project site.

Biological impacts associated with the proposed Project were evaluated with respect to the following special status biological issues:

- Federally- or State-listed Endangered or Threatened species of plant or wildlife;
- Non-listed species that meet the criteria in the definition of Rare, Threatened, or Endangered in the California Environmental Quality Act (CEQA) Guidelines;
- Streambeds, lakebeds, wetlands, and their associated vegetation;
- Habitats suitable to support a Federally- or State-listed Endangered or Threatened species of plant or wildlife;
- Species designated as California Species of Special Concern or Federal Species of Concern;
- Habitat, other than wetlands, considered special status by regulatory agencies (USFWS, CDFG) or resource conservation organizations; and

- Other species or issues of concern to regulatory agencies or conservation organizations.

The actual and potential occurrence of these resources within the Project site was correlated with the significance criteria noted below to determine whether the impacts of the proposed Project on these resources would be considered significant.

SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines contains the Initial Study Environmental Checklist Form which includes questions relating to biological resources. The issues presented in the Initial Study Checklist have been utilized as thresholds of significance in this Section. Accordingly, a Project may create a significant environmental impact if one or more of the following occurs:

- If the Project has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Game and Wildlife Service (refer to Impact Statement 5.8-1).
- If the Project has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Game and Wildlife Service (refer to Impact Statement 5.8-2).
- If the Project 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 (refer to impact Statement 5.8-3).
- If the Project interferes substantially with the movement of any native or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites (refer to Impact Statement 5.8-4).
- If the Project conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (refer to Impact Statement 5.8-5).
- If the Project conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (refer to Section 10.0, *Effects Found Not to be Significant*).

Section 15065(a), *Mandatory Findings of Significance*, of the CEQA Guidelines states that a Project may have a significant effect on the environment if "...the Project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or

animal community, reduce the number or restrict the range of an endangered, rare or threatened species...”.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would substantially diminish, or result in the loss of, an important biological resource or those that would obviously conflict with local, State or Federal resource conservation plans, goals, or regulations. Impacts are sometimes locally adverse but not significant because, although they would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis.

Section 15380 of CEQA indicates that a lead agency can consider a non-listed species to be Rare or Endangered for the purposes of CEQA if the species can be shown to meet the criteria in the definition of Rare or Endangered. For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered according to the definitions for Rare and Endangered listed in Section 15380 of CEQA.

The actual and potential occurrence of these resources within the Project vicinity was correlated with the previously identified significance criteria to determine whether the impacts of the proposed Project on these resources would be significant.

Additionally, the proposed Project must be consistent with County adopted Standard Conditions of Approval (SCA). Thus, this section identifies the SCAs that would offset the biological impact of clearing existing vegetation types for individual lot development. The majority of the SCAs would be enforced by the County of San Bernardino during the entitlement process and are discussed to demonstrate Project consistency with local and regional policies and plans applicable to the proposed Project. SCAs applicable to the proposed Project include, but are not limited to the following:

SCA-1 Tree replanting will be required on a 2 to 1 basis as per San Bernardino County Plant Protection and Management Ordinance along road cuts and fills. Spacing between planted trees should be no closer than 20 feet. Low volume, fire resistant shrubs and ground cover are also recommended for planting on roadside slopes. A Professional Forester or ISA Certified Arborist with experience in the San Bernardino Mountains should review the landscaping plan before submittal to the County.

SCA-2 The landscape plan shall include tree protection guidelines which state that all construction activities should be limited to the late summer or early fall period. Heavy equipment shall be confined to skid trails, building sites, driveway pads, and parking areas. Heavy vehicle grading over 2 inches, operation, service, storage, placement of fill six inches or deeper, waste disposal, and construction of concrete or asphalt pads shall not take place within the dripline of remaining trees. Utility construction and foundation footings should

also remain outside the dripline (if not possible, consult a professional arborist regarding if roots should be cut, tree removed, or if other preventative measures are possible). All measures should be taken to prevent damage to roots and provide subsequent treatment if injury occurs.

- SCA-3 Logs shall be removed from the site within 15 days to reduce the potential for bark beetle infestations. California Forest Practice Rules allow chipping, debarking, sealing with clear plastic for 4 to 6 months, or lopping of limbs from stems greater than 3 inches in diameter and scattering so that all material has maximum exposure to solar radiation. Spraying of individual pine trees with carbaryl insecticide prior to construction is considered advantageous.

Potential impacts are grouped below according to topic. The mitigation measures at the end of this section directly correspond with the numbered impact statements.

SPECIAL STATUS BIOLOGICAL RESOURCES

- 5.8-1 *Project implementation would affect species identified as special status. Implementation of recommended mitigation measures would reduce impacts to a less than significant level to biological species, with the exception of the Bald Eagle. Impacts to the Bald Eagle are concluded as significant and unavoidable.*

A total of 62.56 acres of native and non-native vegetation types, including developed areas, would be impacted by the proposed project. These areas are discussed below, summarized in Table 5.8-4, *Vegetation Types Impacted* and illustrated on Exhibit 5.8-3, *Biological Resources – Project Impacts*.

**Table 5.8-4
Vegetation Types Impacted**

Vegetation Type	Existing Acreage	Impacted Acreage
Jeffrey Pine Forest	54.91	54.91
Pebble Plain	0.69	0.69
Lake Shoreline	4.14	4.14
Developed	2.82	2.82
Total	62.56	62.56

Vegetation Types

Pebble Plains. A total of 0.69 acre of pebble plain habitat would be impacted by Project implementation. Approximately 379 acres of pebble plain are known to exist in the San Bernardino Mountains, 60 percent (227 acres) of which occurs on public

lands. Development of the Project site would remove 0.18 percent of the remaining acreage of pebble plain known to occur on both public and private lands. Although the proposed Project would impact a small area of pebble plain habitat relative to the amount of this vegetation type within the San Bernardino Mountains, Mitigation Measure 5.8-1ga ~~is recommended to~~ would ensure that impacts are reduced to less than significant levels.

Montane Meadows. Botanical surveys during 2002 were limited on the Project site and throughout southern California due to a very low rainfall year. Many plant species indicative of the montane meadow vegetation type 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 be visible, though they may exist on a site as an inactive seed, bulb, or rootcrown. Therefore, the extent of montane meadow on the Project site could not be determined during the 2002 botanical survey. However, implementation of Mitigation Measure 5.8-1a would reduce impacts to this vegetation type to a less than significant level.

Plants

Project implementation would result in impacts on four special status plant species known to occur on the Project site, including one Federally-listed Threatened and CNPS List 1B species, ash-gray Indian paintbrush; and three CNPS List 1B species, Parish's rock cress, Big Bear Valley woollypod, and silver-haired ivesia. Additionally, Project implementation may result in impacts to special status species potentially occurring on the Project site, including six Threatened or Endangered species and 20 CNPS Lists 1B and 2 species. Project implementation also has the potential to impact potentially suitable habitat for 15 CNPS List 4 species.

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 three CNPS List 1B species, Parish's rock cress, Big Bear Valley woollypod, and silver-haired ivesia, were observed on the Project site during the 2002 botanical surveys. Populations of ash-gray Indian paintbrush and Parish's rock cress were found to be widespread throughout an approximately 11.8 acre area of open Jeffrey pine forest with an herbaceous layer of Wright's matting buckwheat in the western half of the Project site. The approximately 0.64 acre of pebble plain habitat was included in this area. Silver haired ivesia was found to be concentrated entirely within the mapped pebble plain habitat. Bear Valley woollypod was found in patches scattered throughout Jeffrey pine forest habitat on the Project site. It is expected that population sizes for these species on the Project site would be larger during a normal rainfall year (i.e., at least 40 percent of average annual precipitation).

Impacts on these species would be considered significant according to CEQA Guideline Section 15065. However, implementation of mitigation measure 5.8-1a would reduce impacts to a less than significant level.

SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING ON THE PROJECT SITE

Botanical surveys during 2002 were limited on the Project site and throughout southern California due to a very low rainfall year. Many plant species 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 be visible, though they may exist 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 can be used to estimate the probability that a special status plant species might occur on the Project site.

There is potential for several special status plants on the Project site that were not detectable this spring due to dry conditions. Special status plants potentially occurring on the Project site include the 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
- grey-leaved violet

Surveys during a normal rainfall year would be required to determine presence or absence and the extent of these species on the Project site. The loss of potential

habitat for these species would be considered significant according to CEQA Guideline Section 15065. However, implementation of mitigation measure 5.8-1a would reduce impacts to a less than significant level.

There is potential for fifteen CNPS List 4 species on the Project site. The plants in the CNPS List 4 category are of limited distribution or infrequent throughout a broad area in California, and their vulnerability or susceptibility to threat appears relatively low at this time. CNPS is actively monitoring populations of the List 4 species and they will be transferred to a more appropriate list if the degree of endangerment or rarity of these species should change. The CNPS List 4 species present on the Project site do not meet the definitions of Rare, Threatened, or Endangered according to CEQA Guideline Section 15065. However, they are addressed in the *Biological Resources Assessment*, refer to Appendix 15.6, given the number of species potentially present on the Project site. No significant impacts to CNPS List 4 species are anticipated at present.

Wildlife

The proposed 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.

Invertebrates. Project implementation may result in impacts on one special status invertebrate species, the Andrews' marble butterfly. Although not observed during general wildlife surveys, the Andrews' marble butterfly has potential to occur on the Project site. Potential habitat for this species is present among plants in the pebble plain habitat on the Project site. However, the Project site contains a minimal amount of habitat relative to the availability of habitat for this species throughout the San Bernardino Mountains. Thus, impacts are considered less than significant.

Amphibians. Project implementation may result in impacts on special status amphibian species. No Federally- or State-listed amphibian species have potential to occur on the Project site. One species that is a Federal Species of Concern and state Species of Special Concern, the yellow-blotched salamander, has potential to occur on the Project site. Potential habitat for this species occurs on the Project site in mesic areas with rotting logs and leaf litter. The loss of potential habitat for this species would be considered less than significant due to the limited amount of habitat loss relative to the availability of habitat for this species in the region.

Reptiles. Project implementation 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. Given the negative results of two independent focused survey techniques and the lack of historical records in the immediate vicinity of the Project site, the survey report concluded that this species is not expected to occur on the Project site. Therefore, no impacts to this species are anticipated.

Birds

Project implementation may result in impacts on special status bird species. Two Federally- and/or State-listed Endangered species have potential to occur on the Project site, the American peregrine falcon and bald eagle. One Fully Protected species, the white-tailed kite, has potential to occur on the Project site. In addition, 16 Federal Species of Concern and/or State Species of Special Concern have potential to occur on the Project site and are discussed below.

Bald Eagle. The bald eagle rarely nests in southern California. However, 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. Implementation of mitigation measures 5.8-1b and 5.8-1c would reduce impacts to this species. However, impacts would remain significant following implementation of the recommended mitigation measures.

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. 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. The potential impact on these species would be reduced to a less than significant level with the implementation of mitigation measure 5.8-1d.

Black Swift, Yellow Warbler, Hepatic Tanager, Purple Martin, and Gray Vireo. 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 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. However, impacts to individual nests would result in a violation of the MBTA and would be considered a significant impact. However, implementation of mitigation measure 5.8-1e would reduce impacts to a less than significant level.

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, California Mastiff 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 proposed Project provides suitable foraging habitat for these bat species. 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. The Project site provides suitable foraging and breeding habitat for this species. 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.

SENSITIVE NATURAL COMMUNITIES/HABITATS

5.8-2 *The proposed Project would impact portions of the Project site that are habitat for referenced sensitive species. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.*

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 Project. These areas are discussed below, summarized in Table 5.8-4 and illustrated on Exhibit 5.8-2.

Jeffrey Pine Forest

A total of 54.91 acres of Jeffrey pine forest, including 17.38 acres of open Jeffrey pine forest, would be impacted by 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. 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 4.14 acres of lake shoreline would be impacted by 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. Montane meadow habitat may occur within the lake shoreline vegetation type. Impacts to montane meadow are discussed above under *Special Status Biological Resources Impacts*.

Pebble Plains

A total of 0.69 acre of pebble plain habitat would be impacted by Project implementation. Impacts to pebble plain habitat are discussed above under *Special Status Biological Resources Impacts*.

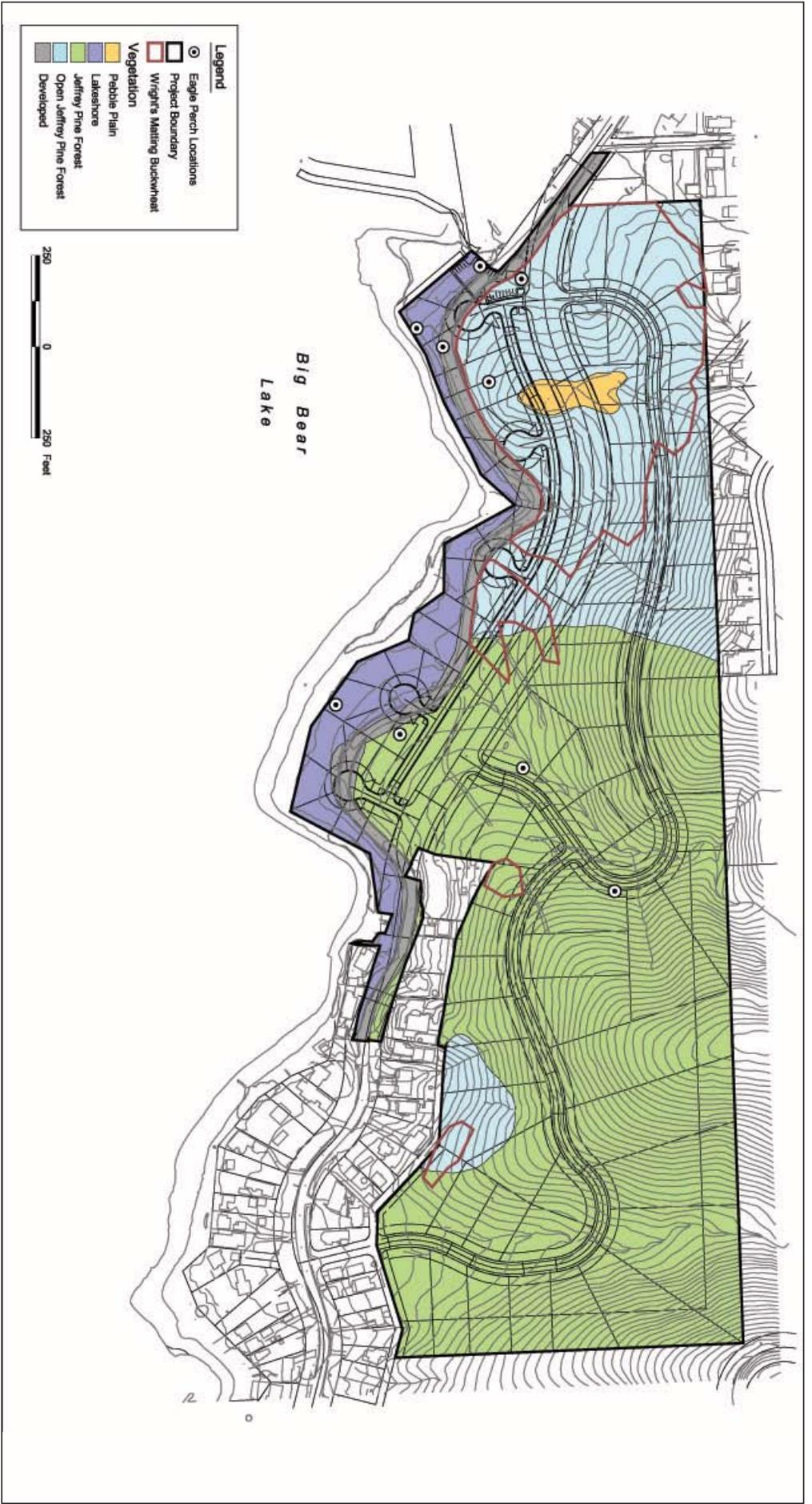
Developed

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

WILDLIFE IMPACTS/INDIRECT IMPACTS

Wildlife Impacts

To assess impacts on wildlife, the total impact on a given vegetation type that provides habitat for wildlife was evaluated. Exhibit 5.8-3, *Biological Resources - Project Impacts*, illustrates the vegetation types (i.e., wildlife habitat) that would be impacted as a result of Project implementation. The following discussion of wildlife impacts focuses on the common species occurring on the Project site. Impacts on special status wildlife species are addressed above under *Special Status Biological Resources Impacts*.



Source: Borterra Consulting, July 2003

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

INDIRECT IMPACTS

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

Short-term construction noise impacts on the bald eagle could be avoided by prohibiting grading and construction activities when wintering populations are present (between November and March). However, given restrictions on construction resulting from mitigation for direct impacts (i.e., 5.8-1d and 5.8-1e) construction activities would be limited strictly to the month of October. Consequently, no feasible mitigation could be determined at this time. Therefore, both short- and long-term residential noise impacts on the bald eagle would be considered an unavoidable significant impact of the proposed 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.

Additional impacts on biological resources in the area may occur as a result of changes in water quality. Urban runoff from the proposed Project containing petroleum residues and the potential for improper disposal of petroleum and chemical products from construction equipment (temporary) or infrastructure areas (i.e., vehicles, improper disposal of chemicals) (permanent) could affect water quality on-site and off-site, including Big Bear Lake. This, in turn, could affect populations of aquatic species. Water quality could also be affected by runoff of nutrients from landscape features of the proposed Project. Mitigation would require that the applicant apply for coverage under the State Water Resources Control Board's General Permit for Storm Water Discharge Associated with Construction Activity and comply with all of the provisions of the permit, including the development of a Storm Water Pollution Prevention Plan (which includes provisions for the implementation of Best Management Practices and erosion control measures).

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 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. Implementation of mitigation measures 5.8-2a and 5.8-2b would reduce this impact to a less than significant level.

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 project could disrupt foraging and roosting behavior of the bald eagle on the project site. Implementation of mitigation measures 5.8-2a, 5.8-2b and 5.8-2c would reduce impacts to less than significant levels.

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. Implementation of mitigation measure 5.8-2d would reduce impacts to a less than significant level.

JURISDICTIONAL WATERS

5.8-3 *Development of the proposed Project ~~does not have~~has the potential to impact jurisdictional waters. Analysis has concluded that potentially significant impacts would be reduced to a less than significant level~~impacts would occur in this regard after regulatory compliance with implementation of the recommended mitigation measures.~~*

Any development proposal that involves impacting the drainages, streams, or wetlands on the site through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, or any other modification would require permits from the Corps, the RWQCB, and the CDFG before any development could commence on the Project site. Both permanent and temporary impacts are regulated and would trigger the need for permits. Processing of the RWQCB 401 and CDFG 1602 agreement can occur concurrently with the Corps 404 permit process and can utilize the same information and analysis. The Corps will not issue its authorization until the RWQCB completes the Section 401 Water Quality Certification. Applications to both the RWQCB and the CDFG require submittal of a valid California Environmental Quality Act (CEQA) document along with the application.

Mitigation may be required by the regulatory agencies during the permit process. Compensatory mitigation for the loss of jurisdictional function and values is a fundamental component of the applicant regulatory programs. Mitigation can take several forms. It can consist of (1) avoidance or minimization of impacts, (2) compensation in the form of habitat creation, restoration and enhancement, or (3) compensation through participation in a mitigation bank. The first type of mitigation is preferred by the agencies. For any project that impacts jurisdictional areas, it is also preferred by the agencies that compensation through the creation of habitat be performed on-site and in-kind (i.e., riparian woodland for riparian woodland). Conceptual mitigation will be discussed during the Pre-Application Field Meeting with the regulatory agencies. However, the exact requirements of any special permit conditions and mitigation established for this project would be dictated by the regulatory agencies following the review of the formally submitted project applications.

WATERS OF THE U.S. (WETLAND) DETERMINATION

As previously noted, in order to be considered a wetland, an area must exhibit all three of the wetland parameters (i.e., vegetation, soil and hydrology) per the evaluation criteria in the Wetland Delineation Manual. Based on the results of the field investigations, it was determined that not all three parameters were present within the drainages (hydric soils nor riparian vegetation were present). As a result, no Corps wetlands were identified on the Project site and no impacts would occur in this regard.

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 Corps 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 the Corps. Utilizing the most current development plans, it was determined that ~~roadway~~ the proposed improvements would impact approximately 0.204-acre of Corps jurisdiction. Discharges include approximately 0.04-acres to ephemeral drainages and approximately 0.20-acres of impact as a result of fill material associated with the proposed marina.

CALIFORNIA DEPARTMENT OF FISH AND GAME (16023) JURISDICTION

Based on the results of the field observations and data collection, RBF identified 0.15-acre of CDFG jurisdictional streambed waters. Utilizing the most current development plans, it was determined that ~~roadway~~ the proposed improvements would impact 4.380-04-acres of CDFG jurisdiction (includes streambed, shoreline, and lake impacts) (refer to Exhibit 5.8-2, *Jurisdictional Map*).

OVERVIEW OF REGULATORY APPROVAL PROCESS

The following is a summary of the various permits, agreements, and certifications required prior to construction activities taking place within the jurisdictional areas.

Army Corps of Engineers

The Corps regulates discharges of dredged fill materials into "waters of the United States" under Section 404 of the Clean Water Act (CWA). Since improvements associated with the proposed Project would result in the discharge of material within the jurisdiction of the Corps, a 404 permit would be required.

California Department of Fish and Game

~~As noted above, the drainage within the proposed Project area meets the CDFG's definition as streambed and thus would be regulated by the CDFG. An agreement from the Department would be required. The CDFG agreement requires a fee and approximately 45 days processing time. As noted above, areas within the Project site meet the CDFG's definition as streambed and lakebed. Since improvements associated with the proposed project would impact CDFG Jurisdiction, a 1602 Streambed Alteration Agreement (SAA) must be obtained prior to construction. A~~

processing fee and CEQA cCompliance is necessary in order for the Agreement to be issued.

Regional Water Quality Control Board

The RWQCB requires that a CEQA compliance certification be obtained before starting the RWQCB process. Processing time should not exceed 60 days following submission of a complete application (determination of what constitutes a complete application is made by the RWQCB). Additionally, the RWQCB requires that water quality concerns related to urban storm water runoff be addressed. Any 401 Certification application submitted to the RWQCB should incorporate the use of Best Management Practices (BMPs) for the treatment of pollutants carried by storm water runoff in order to be considered a complete application. For the 404 permit to be approved, a 401 water certification would be required. A fee is required as part of the application submittal. Also refer to Section 5.11, *Hydrology and Drainage*.

Overall, impacts to the jurisdictional water present on the Project site would be reduced to a less than significant level through compliance with the regulatory process (i.e., 404 permit, CDFG agreement, 401 certification.) Implementation of the recommended mitigation measure (Mitigation Measure 5.3-8a) regarding a 3:1 replacement-to-impact ratio for all unavoidable impacts to jurisdictional areas would ensure that significant impacts to jurisdictional waters are reduced to a less than significant level. Compliance with the regulatory process (i.e., 404 permit, CDFG agreement, 401 certification) would ensure the enforcement and implementation of the recommended mitigation measure. It is also noted that additional mitigation requirements may be required through the permitting process depending on the quality of habitat impacted, project design and other factors.

WILDLIFE MOVEMENT

5.8-4 *Project implementation may interfere with the movement of a native resident or migratory wildlife species. Analysis has concluded that impacts are less than significant.*

The development of the project site would not impact wildlife corridors, by definition, but may affect local travel routes. Construction of the residential areas and realignment of Highway 38 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 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 Highway 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

5.8-5 *Project implementation would not conflict with adopted regional and/or local policies/plans pertaining to biological resources. Analysis has concluded that impacts are less than significant.*

ON-GOING REGIONAL AND LOCAL HABITAT CONSERVATION PROGRAMS

San Bernardino Valley Multi-Species Habitat Conservation Plan (MSHCP)

The Project site is not encompassed by the draft MSHCP and is not subject to its policies and provisions. Therefore, no conflicts with the policies of the MSHCP are anticipated.

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. Presence or absence of these species could not be determined on the project site during the 2002 botanical surveys due to a low rainfall year. Therefore, impacts on these species were assessed according to the presence of suitable habitat. Implementation of mitigation measure 5.8-1a would determine specific population impacts and reduce impacts to these species to less than significant levels.

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 Project-related impacts. This biological technical report is 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. Implementation of mitigation measures 5.8-1a and 5.8-1b would ensure the project's compliance with this section.

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 15.6, *Biological Resources Information*). 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 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 Project. Implementation of standard condition of approval 3 (SCA-3) would reduce impacts to less than significant levels.

Migratory Bird Treaty Act (MBTA)

Implementation of the proposed project may impact the nests of species covered by the MBTA, including the Cooper's hawk, purple martin, and hepatic tanager. However, implementation of mitigation measures 5.8-1d and 5.8-1e would reduce impacts to these species to a less than significant level.

CUMULATIVE

5.8-6 *Cumulative development in the Project area may impact the area's biological resources. Analysis has concluded that ~~with implementation of the specified mitigation and compliance with all applicable County, State and Federal regulations concerning biological resources, a less than significant impact would occur in this regard.~~ project implementation incrementally adding to impacts on bald eagle habitat in the Big Bear Valley would result in a significant and unavoidable cumulative impact to the wintering bald eagle population on Big Bear Lake.*

The proposed project contains some of the most utilized bald eagle roosting and perching habitat in the Big Bear Valley. Construction of the proposed project would diminish the habitat value of the project site for the species. When viewed in conjunction with other past, present, and reasonably foreseeable developments planned for the Fawnskin/Big Bear Lake area, the loss of bald eagle perch and roosting trees on the project site would significantly impact bald eagle habitat on the north shore of Big Bear Lake. Thus, cumulative impacts to the bald eagle are considered significant. Mitigation measures reflective of recommendations developed by scientific studies in the Big Bear Valley, including Kimball Garrett's study on the effects of human activity on wintering bald eagles (1981), are provided as part of the proposed project. However, implementation of these mitigation measures would not reduce direct or cumulative impacts to bald eagle habitat to a level considered less than significant.

†The loss of Jeffrey pine forest, pebble plain habitat and other native vegetation, as well as the loss of wildlife habitat could be considered a negative cumulative effect. However, with implementation of the recommended mitigation measures cumulative impacts to the Jeffrey pine trees would be mitigated to a less than significant level. The proposed project would impact 0.69 acres of pebble plain habitat, however, implementation of the recommended mitigation measures would ensure that impacts would be reduced to less than significant levels. Additionally, implementation of the recommended mitigation measures would reduce impacts to 0.69 acre of pebble plain habitat to a less than significant level.

Potential impacts would be site specific and an evaluation of potential impacts would be conducted on a project-by-project basis. This would be especially true of those developments located in areas that contain sensitive species and habitat. Each incremental development would be required to comply with all applicable County, State and Federal regulations concerning the preservation of biological resources. ~~In consideration of these regulations, However, potential cumulative impacts upon biological resources wintering bald eagle populations would not be considered significant and unavoidable.~~

MITIGATION MEASURES

Potential impacts to Biological Resources from Project implementation would be addressed through a two-category mitigation program consisting of Standard Conditions of Approval and mitigation measures. The Standard Conditions of Approval are addressed in the impact discussions above. The mitigation measures within each category are described below.

SPECIAL STATUS BIOLOGICAL RESOURCES

SPECIAL STATUS PLANTS AND VEGETATION TYPES

5.8-1a ~~Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed during a year with precipitation at least 40 percent of average for the area to determine presence or absence of special status plant species and vegetation types. Surveys shall focus on listed special status vegetation types, and Threatened or Endangered, and CNPS List 1B and 2 species whose presence could not be determined during surveys due to lack of rainfall. The location and extent of special status species populations shall be mapped and the size of the populations accurately documented.~~

~~The project applicant shall pay compensation for the loss of special status botanical resources identified on the project site by the survey by funding the purchase and management of off site habitat through contributions to a fund established by the California Wildlife Foundation on behalf of the CDFG. The California Wildlife Foundation is an independent 501(c)3 nonprofit corporation founded to assist the CDFG and other governmental agencies in the management of funds and mitigation banks designed to offset the impact of development on California's native flora and fauna. Off site habitat containing the same species as those identified within resources impacted by the proposed project shall be purchased at a ratio agreed upon by the County of San Bernardino, San Bernardino National Forest, USFWS, and CDFG. The typical mitigation ratio is 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development).~~

~~If additional surveys during a year with precipitation at least 40 percent of average do not encounter additional special status plant resources, the project applicant is responsible for the mitigation of a minimum of 11.8-acres of pebble plain and open Jeffrey pine forest in the western half of~~

~~the project site that is known to be occupied by the federally-listed Threatened ash gray Indian paintbrush (i.e., would be required to fund the purchase of 35.4 acres of offsite habitat from the California Wildlife Foundation if the agreed mitigation ratio is 3:1).~~

Prior to vegetation clearing, grading, or other disturbance, the project site shall be surveyed during a year with precipitation at least 40 percent of average for the area to determine presence or absence of special status plant species and vegetation types. Surveys shall focus on special status vegetation types, and Threatened or Endangered, and CNPS List 1B and 2 species whose presence could not be determined during surveys due to lack of rainfall. The location and extent of special status species populations shall be mapped and the size of the populations accurately documented. Pebble plain habitat acreages will be recalculated following the survey using criteria established by the Habitat Management Guide for Pebble Plain Habitat on the National Forest System (2002).

Should avoidance/retention on-site of the 4.91 acres of Pebble Plain habitat in permanent open space under a Conservation Easement Agreement not occur, the Project Applicant shall pay compensation for the loss of special status botanical resources identified on the project site during the survey by funding the purchase, establishment of a conservation easement, and management of off-site habitat within the conservation easement by an entity approved by the CDFG. Off-site habitat containing the same species as those identified within resources impacted by the proposed project shall be purchased at a ratio of 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development). Prior to the initiation of clearing or grading activities on the project site, the conservation easement will 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 site by the management entity in perpetuity.

If additional surveys during a year with precipitation at least 40 percent of average do not encounter additional special status plant resources, the Project Applicant is responsible for mitigating impacts to a minimum of 11.8-acres of pebble plain and open Jeffrey pine forest in the western half of the project site that is known to be occupied by the Federally-listed Threatened ash-gray Indian paintbrush. As such, the applicant would be required to fund the purchase and maintenance of 35.4-acres of offsite pebble plain and open Jeffrey pine forest habitat that contains special status plant species, including Ash-gray Indian paintbrush and others known to occur on the site.

SPECIAL STATUS WILDLIFE

- 5.8-1b Trees identified on Exhibits 3 and 4 of the Bald Eagle Survey Report (Appendix E, see attached) as eagle perch locations shall be preserved in place upon project completion and shall not be removed under any circumstances. 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. These restrictions on development 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 measure shall be identified as a Note on the Composite Development Plan.

- 5.8-1c 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 four 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 must avoid impacts to tagged 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. These restrictions on development 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 measure shall be identified as a Note on the Composite Development Plan.
- 5.8-1d 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.

- 5.8-1e Vegetation removal, clearing, and grading on the project site shall be performed outside of the breeding and nesting season (between March

and September) to minimize the effects of these activities on breeding activities of migratory birds and other species.

- 5.8-1f 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 CC&Rs.

SPECIAL STATUS VEGETION TYPES

- ~~5.8-1g Exterior construction shall be prohibited between the dates of December 1 and April 1 (of each year). Significant impacts to pebble plain habitat can be mitigated to a less than significant level through off site preservation. The project applicant shall pay compensation for the loss of special status botanical resources identified on the site, by the survey, by contributing to the funding of purchase and management of off site habitat. The Applicant shall acquire habitat in the Big Bear Valley and dedicate to the CDFG or suitable conservation organization. The California Wildlife Foundation is an independent 501(c)3 nonprofit corporation founded to assist the CDFG and other governmental agencies in the management of funds and mitigation banks designed to offset the impact of development on California's native flora and fauna. Off site habitat shall be purchased at a ratio agreed upon by the County of San Bernardino, San Bernardino National Forest, USFWS, and CDFG. The typical mitigation ratio is 3:1 (i.e., three acres of habitat purchased for preservation for each acre impacted by development. An area containing no less than 2.1 acres of pebble plain habitat in an area located adjacent to other open space areas within the project vicinity shall be preserved in perpetuity. The preserved areas shall be protected from future development through a conservation easement or other appropriate mechanism.~~

SENSITIVE NATURAL COMMUNITIES/HABITATS

WILDLIFE IMPACTS/INDIRECT IMPACTS

- 5.8-2a 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).
- 5.8-2b 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.

- 5.8-2c ~~To limit the amount of human disturbance to on adjacent natural open space areas, signs shall be posted along the northeastern and eastern perimeter of the project site where the property boundary abuts open space directing people to keep out of the adjacent natural open space areas and to keep dogs leashed in areas adjacent to natural open space areas. This requirement shall be published in the Homeowner Association CC&Rs 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.

- 5.8-2d ~~Prior to the issuance of individual building permits, landscaping designs recordation of the final map, a landscaping plan for the entire tract shall be prepared (inclusive of a plant palette) with 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 no non-native or invasive plant species are to be used in the proposed landscaping. The biologist should suggest appropriate native plant substitutes. A note shall be placed on the Composite Development Plan indicating that all proposed landscaping (including landscaping on individual lots) shall conform with 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 native trees/plants approved per the overall tract map landscaping plan, the Homeowner Association CC&Rs shall also restrict (individual lot owners) to use only native tree and plant species approved per the overall tract map landscaping plan.~~

- 5.8-2e ~~Garages with automatic door openers shall be required. No exterior construction shall occur between December 1 and April 1, when bald eagles are present. Garages with automatic door openers shall be required. No exterior construction, grading or vegetation clearing shall be permitted between December 1 and April 1, which is the wintering period for bald eagles (i.e., the season when bald eagles are present in the Big Bear area).~~

Also refer to mitigation measures 5.8-1a to 5.8-1f.

JURISDICTIONAL WATERS

- 5.8-3 ~~No mitigation measures are recommended.~~ Per the direction of the California Department of Fish and Game, 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

- 5.8-4 No mitigation measures are recommended.

REGIONAL AND LOCAL POLICIES/PLANS

- 5.8-5 No mitigation measures are recommended.

CUMULATIVE

- 5.8-6 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Significant and unavoidable impacts related to Biological Resources have been identified for impacts to Bald Eagle populations. If the County of San Bernardino approves the 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.

5.9 CULTURAL RESOURCES

The purpose of this Section is to identify the potential for cultural resources to occur on the property and to assess the significance of such resources. This Section is based upon the *Historical/Archaeological Resources Survey Report* and the *Paleontological Resources Report* for the Moon Camp Residential Subdivision prepared by CRM in April 2002. Information pertaining to the reports are included in Appendix 15.7. The analysis in this Section has been prepared in accordance with Section 15064.5 of CEQA which considers potential impacts to prehistoric, historic and paleontological resources.

EXISTING CONDITIONS

HISTORICAL RESOURCES

PREHISTORIC CONTEXT

The project area lies in the heart of the homeland of the Serrano Indians, whose traditional territory is centered at the San Bernardino Mountains, but also includes the southern rim of the Mojave Desert, extending from today's Victorville eastward to Twentynine Palms. The name "Serrano" was derived from a Spanish term meaning "mountaineer" or "highlander."

Prior to European contact, the Serranos were primarily gatherers and hunters, and occasional fishers, who settled mostly where flowing water emerged from the mountains. Because of the variation in their habitat, the vegetable staples of the Serrano included both plant foods common in the mountains, such as acorns and piñon nuts, and those common in the desert, such as honey mesquite, yucca roots, mesquite, and cactus fruits. Game animals, including deer, mountain sheep, antelope, birds, rabbits and other small rodents, were hunted with tools and techniques quite similar to those employed by other southern California Indians. Technologically, the Serrano were also similar to their neighbors. Shell, wood, bone, stone, and plant fibers were used in making a variety of implements, such as lavishly decorated baskets, pottery, rabbit-skin blankets, and musical instruments.

The Serrano were loosely organized into exogamous clans, led by hereditary heads, and the clans in turn were affiliated with one of two exogamous moieties. The exact nature of the clans, their structure, function, and number are not known. The Bear Valley, in which Big Bear Lake is located, has been identified to be the territory of the *Yuhaviatam* or *Kuchaviatam* clan, which occupied a village in the vicinity named *Yuhaviat*, meaning "pine place." Some researchers suggest that the Bear Valley was shared between the *Yuhavetum* (*Yuhaviatam*) clan and the *Pervetum* clan.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was negligible until 1819, when an *assistencia* under the San Gabriel Mission was established in present-day Redlands, on the edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serranos in the San Bernardino Mountains were removed to the nearby missions. At present, most Serrano descendants are found on the San

Manuel and the Morongo Indian Reservations, where they participate in ceremonial and political affairs with other Native American groups on an inter-reservation basis.

HISTORIC CONTEXT

In 1772, a small force of Spanish soldiers under the command of Pedro Fages became the first Europeans to set foot in the San Bernardino Mountains, followed shortly afterwards by Francisco Garcés, the famed explorer, in 1776. During the next 70 years, however, the Spanish/Mexican colonization activities in Alta California, which concentrated predominantly in the coastal regions, left little physical impact on the San Bernardino Mountains. Aside from occasional explorations and punitive expeditions against Indian livestock raiders, the mountainous hinterland of California remained largely beyond the attention of the missionaries, the *rancheros*, and the provincial authorities. The name “San Bernardino” was bestowed on the region at least by 1819, when a mission rancho bearing that name was established in the valley lying to the south under the supervision of Mission San Gabriel.

After the American annexation of California in 1848, the rich resources offered by the mountains brought drastic changes to the San Bernardino Mountains, spurred by the influxes of settlers from the eastern United States. Beginning in the early 1850s, the dense forest was turned into the scene—and victim—of a booming lumber industry, which brought the first wagon roads and industrial establishments into the San Bernardino Mountains. In 1860, the discovery of gold in the Bear and Holcomb Valleys ushered in a miniature gold rush, and with it a number of mining towns with several thousand residents. Around the same time, the lush mountain range also attracted cattlemen, sheepmen, and their herds, and within the next two decades gained the reputation of being the best summer grazing land in southern California. Then in 1884-1885, an even more valuable resource in arid southern California, water, became the focus of development in the San Bernardino Mountains when the Bear Valley Land and Water Company created the Big Bear Lake reservoir to ensure the success and prosperity of the Redlands colony.

By the 1890s, excessive logging and sheep grazing in the San Bernardino Mountains had given rise to a forest conservation movement among residents of the San Bernardino Valley to protect the watershed. In 1893, the movement succeeded in 1893, in persuading the U.S. government to create the San Bernardino Forest Reserve, later renamed the San Bernardino National Forest, and over the next few decades effectively brought an end to logging and sheep grazing in the San Bernardino Mountains. In the meantime, the favorable climate, enticing scenery, and the string of man-made lakes gradually propelled the resort industry to the forefront of development burgeoning from the first commercial resort established on the shore of Big Bear Lake in 1888. In 1915, the budding industry received a major boost from the completion of the automobile highway known as Rim of the World Drive. Since then, the San Bernardino Mountains have grown into—and remain—one of southern California's most popular tourism attractions.

The community of Fawnskin, the largest settlement on the north shore of Big Bear Lake, was founded in 1916, at the onset of a great building boom in Bear Valley. In that year, two Los Angeles businessmen, William Cline and Clinton E. Miller, purchased some 700 acres at this location with plans to develop a major resort

surrounded by expensive summer homes. Initially named Grout after Grout Bay, which it overlooks, the community was soon renamed Fawnskin after nearby Fawnskin Valley, which had been known by that name since 1891. The Fawnskin post office was established in 1918, and Cline and Miller's resort was completed the next year. By then, Fawnskin had already grown into a community of more than 100 summer homes, with a string of other resort camps lining the lakeshore to its east. Among these resorts were Moon Camp and Wilsted's Camp, both located in the immediate vicinity of the current project area, as further discussed below.¹

Records Search

The Archaeological Information Center (AIC) at the San Bernardino County Museum, Redlands, provided the records search service for this study. The AIC is the official cultural resource records repository for San Bernardino County, and a part of the California Historical Resource Information System, established and maintained under the auspices of the Office of Historic Preservation.

During the records search, Robin Laska, AIC Assistant Coordinator, checked the Center's electronic database for previously identified historical/archaeological resources in or near the project area, and existing cultural resources reports pertaining to the vicinity. Previously identified historical/archaeological resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Historical Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resource Information System.

Historical Research

Historical background research for this study was conducted by CRM on the basis of published literature in local and regional history and historic maps of the project vicinity. Among maps consulted for the research were the U.S. General Land Office's (GLO) land survey plat maps dated 1858 and 1896, and the U.S. Geological Survey's (USGS) topographic maps dated 1899 and 1954. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, also located in Riverside.

Field Survey

On March 21, 2002, CRM archaeologists carried out the intensive-level, on-foot field survey of the project area. During the survey, Moreno and Ballester walked the entire project area along parallel north-south transects spaced 15 meters (ca. 50 feet) apart. In this way, the ground surface was systematically inspected for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Special attention was paid to animal burrow backdirt, rock outcrops, and unusual natural features. Later, CRM archaeologists revisited the property on April 2, 2002 to complete site recordation of a historic-period refuse scatter discovered during the survey (see "Field Survey Results," below).

¹ For further discussion of the history of Fawnskin and the San Bernardino Mountains, see Robinson (1989) and LaFuze (1971).

RESULTS AND FINDINGS

RECORDS SEARCH RESULTS

According to records on file at the Archaeological Information Center, a portion of the project area, near its western end, was previously surveyed for cultural resources in 1987, and two prehistoric—i.e., Native American—artifacts were discovered during that survey. The two artifacts which included a groundstone fragment and a chipped stone tool were recorded as an isolate (P36-60758). Since they were found in a deep wash, it was suspected that these artifacts did not occur *in situ* but were rather washed to that location from upper slopes. No other cultural resources studies had taken place in the project area prior to this study, and no other cultural resources had been identified within the project boundaries.

Outside the project area but within a one-mile radius, ten other previous studies have been reported to the AIC. As a result of these and other studies in the vicinity, two archaeological sites have been recorded within the one-mile scope of the records search, and four other possible cultural resources have been reported and, since they have not been formally recorded, designated by the AIC as pending sites. One of the two recorded sites, CA-SBR-4400, consisted of a scatter of chipped stone flakes, and has since been destroyed. The other site, CA-SBR-9937H, was the Miller School House in Fawnskin, a one-room schoolhouse originally built in 1925. The four pending sites were described mainly as scattered chipped stone flakes, projectile point fragments, and/or ceramic sherds, but also included a purported Native American burial ground from the 19th century.

The majority of these previously identified cultural resources were found far enough from the project area not to be a concern for this study. However, P36-60758, is located in the western portion of the project area and the purported Native American burial ground may have been in close proximity to the eastern end of the project area, based on what little information was available at the AIC. These two potential cultural resources, therefore, were among the focal points of the field survey efforts.

HISTORICAL RESEARCH RESULTS

Historical sources consulted for this study indicate that development activities in and around the project area began in the 1910s-1920s, coinciding roughly with the birth of the nearby resort town of Fawnskin. Prior to that, the only man-made feature known to be present in the vicinity of the project area was a road “from San Bernardino to Pine Lake Post Office,” the latter being located in the present-day City of Big Bear Lake. The road skirted around the southern side of the project area, just outside the project boundary, over land that has since been inundated by the lake after construction of the current Big Bear Dam raised its water level in 1911-1912.

In 1915, the completion of Rim of the World Drive, the automobile highway that made the mountain resorts accessible to the “flatlanders”, ushered in a period of phenomenal growth in Bear Valley. Between 1913 and 1921, the number of resorts in the valley mushroomed from 2 to 52. Although the vast majority of them were concentrated on the south shore of the lake, by 1928 at least nine commercial camps or lodges were in operation along the north shore to the east of Fawnskin. Two of

these, Wilsted's Camp and Moon Camp, were evidently located in the immediate vicinity of the project area, and possibly within the project boundaries.

In the 1940s, a large number of buildings was noted in the project area, clustered mostly around the two curves in the highway. While the exact nature of these buildings is not identified in sources consulted during this research, their presence probably attests to the heyday of the resort camps around Big Bear Lake, especially in the midst of the post-WWII prosperity. During the 1950s and the early 1960s, however, rapid advances in modern transportation technology and the resulting shift in American lifestyle began to erode the popularity of such resort camps. Perhaps reflecting that trend, by 1969-1971, the buildings that once occupied the western portion of the project area had disappeared. Since then, all buildings on the property have been removed.

In summary, the results of historical background research suggest that the project area may have hosted one or possibly two of the early resort camps that helped transform Big Bear Lake into the popular playground it is today, and both date to at least the 1920s. The search for possible remains of these camps, thus, formed another focal point of the archaeological field investigations.

FIELD SURVEY RESULTS

No prehistoric sites, features, or artifacts were encountered during the field survey. A diligent effort was made to search for any surface manifestation of the reported Native American burial ground, but none was found. Nor could either of the two prehistoric artifacts noted in the project area in 1987 (P36-60758) be located during the survey. Remnants of picnic sites were observed on the northern side of North Shore Drive, but all were determined to be of recent origin.

In the southeastern portion of the project area, the field survey revealed the presence of a historic-period refuse scatter, which was recorded as an archaeological site and subsequently designated CA-SBR-10635H. The artifact deposit at this location has been heavily disturbed by apparent bottle-hunting activities, and presumably many of the more valuable artifacts have been removed. The remaining artifacts include rusted cans, glass fragments, ceramic sherds, pieces of wood or metal, and other historic-period artifacts mixed with modern trash. Among the more notable items are nine cone-top beer cans, seven solder drop cans, two broken glass bottles, two fragments of an aqua glass insulator, and an old battery. Some of the artifacts, such as the cone-top and solder drop hole-in-cap cans, generally date to the 1930s-1940s, while others, such as the punch-top steel can, may have come from as late as the 1950s-1960s.

Most of the artifacts were found in two concentrations, each centered around a large pit dug recently by bottle hunters. Several more looters' pits have been dug in and around the two larger pits. In all, the pit measures approximately 61 feet along the north-south axis and 49 feet along the east-west axis within the project area, but the refuse scatter extends farther east beyond the project boundaries. In fact, CA-SBR-10635H can be seen as the edge of a much larger refuse deposit located mostly on the adjacent property, around an old structure foundation at that location.

PALEONTOLOGICAL RESOURCES

SETTING

The project area is located in the San Bernardino Mountains, which comprise a portion of the Transverse Ranges geomorphic province, the only east-west trending province in the State of California. This portion of the Transverse Ranges province is bounded by the Peninsular Ranges province on the south, the Little San Bernardino Mountain portion of the Transverse Ranges province to the east, the Mojave Desert province on the north, and the San Gabriel Mountain portion of the Transverse Ranges province to the west (refer to Footnote 1).

The project area lies upon the lower slopes of Delmar Mountain, on the north shore of Big Bear Lake. North Shore Drive (State Route 38) passes through the property. In aerial photographs taken in 1953, 1965, and 1979, the property is shown to be covered by an open forest with ground commonly visible between the trees (aerial photo 1953; 1965; 1979). The 1965 aerial photograph shows nearby Grout Bay to be a mud flat with a wide, exposed shoreline area along the southern edge of the project area.

The portion of the project area north of State Route 38 is wooded to openly wooded, with most of the ground covered by a dense to moderate duff zone composed mainly of pine needles, pine cones, and oak leaves. Surface exposures were limited to roads, steep slopes, canyon bottoms, and a few open meadow-like areas. Large pines, oaks, and cedars make up the bulk of the trees. Also present are buck brush, pinyon pines, sage, cacti, and grasses. The soil is a gravelly sand with scattered to locally dense areas of cobble or small boulder clasts in the surface float. The clasts are mainly quartzite, with only a few scattered granitic clasts. Based on the soil borings and some road cuts, the surface rocky float is probably the result of lag deposits. In other words, the larger rocks are concentrated at the surface as the smaller materials, such as sand, silt, and clay, are eroded away. This side of the highway contains at least three old dirt roads.

The area south of State Route 38 is fenced along the highway, and is accessible through what appears to have been an old, partially graveled driveway. This area has a few scattered large pines, some willows near the shoreline, and is well covered by grasses and weeds. The most open area lies within portions of the access road that are not graveled. The surface soils are a gravelly sand with minor cobble float and only a few scattered small boulders. All but one of the larger rocks are quartzite. Since some buildings are known to have occupied this area in the past, it is possible that the boulders were brought in. The surface level is slightly above the beach during full stands of the lake. Soil borings found that the rock material within the saturated zone is disintegrating, which would suggest that any fossil bone material within this zone would also be disintegrating. The saturated zone should be at or above the lake level, as water tables are usually drawn upward by capillary action to roughly parallel the surface contours of the ground.

The San Bernardino Mountains have been uplifted along the southern edge by the San Andreas Fault and by several steeply reverse dipping faults on the north. These mountains are composed mainly of gneisses, schists, plutonic rocks, and several

kinds of hybrid rocks. They also contain sequences of quartzite and marble from which Paleozoic fossils have been found. The plutonic rocks are mainly of diorite to quartz monzonite to granite in composition and are considered to be Jurassic and/or Cretaceous in age. Both the plutonic and metamorphic rocks are intruded by dikes of aplite, pegmatite, lamprophyre, amphibolite, and fine grained basaltic to rhyolitic rocks. Some Quaternary sedimentary deposits can be found filling canyons and some late Tertiary-Quaternary sedimentary rocks are present along the San Andreas Fault along the south and southwest margins of the range.

The north shoreline of Big Bear Lake includes a strip of Qc, described as the Cabazon fanglomerate of Quaternary age. It is comprised mainly of an unsorted angular to subangular quartzite-rich fanglomerate. The rocks just to the north of the fanglomerates are mapped as the Cactus Granite of Jurassic age.

Another geologic map of the surrounding area shows an east-west fault within the bedrock outcrops just north of the project area. The bedrock is mapped as Precambrian metasedimentary rocks, mainly quartzite, marble, and schist. The rocks between the bedrock and the north shore of Big Bear Lake are shown as Quaternary Alluvium. Except for the fault, geologic mapping shows the same geology for the project area.

A more detailed geologic map of the project area shows most of the property to be designated as "aa" and the upper portions as "rf2m." The aa is described as alluvium and colluvium that are considered to be deposits on active surfaces. The rf2m is described as dissected, inactive fan gravels still adjacent to the source, considered to be deposits on relict surfaces. While previous mapping shows the rock constituent to be mainly marble, a recent geotechnical study in the same mapped material and near the project area found a large amount of quartzite, rather than marble, to be present. The presence of predominantly quartzite rock material within a gravelly sand at this location was confirmed during the field survey. The surface soils appear to become sandier toward the lake.

The water table was found to be shallow, at 7 to 20 feet, and the rock material within the saturated zone was found to be highly decomposed. The ground water zone, as well as the top of the water table, appears to fluctuate with the lake level. This continued wetting and drying of the rocks material within the ground water zone may be responsible for the noted decomposition of the rock. At depth, all three soil borings encountered sandy clays indicative of ponded sediments. These clays suggest that sometime in the geologic past there was a natural lake occupying the portion of the valley where the man-made Big Bear Lake is now located.

Big Bear Lake is a man-made feature that was built by damming up the headwaters of one of the tributaries of the Santa Ana River as it ran through Big Bear Valley. When the alluvial deposits that once lined the sides and bottom of the Valley were flooded, more recent alluvial deposits began to prograde into the lake. The project area was once on the higher portion of the Valley, in an area of active sedimentation. Such an area would not be a favorable location for the preservation of vertebrate fossil remains, as any animal dying there would have been subject to carnivore feeding and destruction by the movement of coarse rocky material moving down-slope toward the canyon bottom. The decomposing nature of the rock within the

saturated zone would suggest that any fossil material that might have survived within these rocks when they were deposited would have been destroyed along with the rock as they decomposed.

RECORDS SEARCH

The records search service was provided by the Regional Paleontologic Locality Inventory located at the San Bernardino County Museum in Redlands and the Natural History Museum of Los Angeles County in Los Angeles. These institutions maintain files of regional paleontological site records as well as supporting maps and documents. The records search results are used to identify previously performed paleontological resource assessments and known paleontological localities near the project area. In addition, a literature search was conducted using materials in the CRM library and the personal library of the author, including unpublished reports produced from surveys of other properties in the vicinity.

FIELD SURVEY

On March 22, 2002, CRM geologist/paleontologist conducted the field assessment of the project area. The survey was carried out by walking two east-west traverses, north of State Route 38, spaced approximately 50 meters apart and two east-west traverses, south of the highway, spaced approximately 10 meter apart. The results of the survey are incorporated into the sections below.

RESULTS AND FINDINGS

EXISTING DATA SUMMARY

The paleontology record searches conducted by the San Bernardino Museum and Natural History Museum of Los Angeles County indicate that no paleontological localities have been discovered within the boundaries of the project area, or within a one-mile radius of the project area. However, one paleontological locality, approximately five miles to the east, has been previously reported to have produced vertebrate fossils from sediments that could be present in the deeper levels of the current project area. Based on the recent nature of the upper sediments, the San Bernardino County Museum assigns the project area a “low potential to contain significant nonrenewable paleontologic resources,” and states that “no mitigation program is recommended at this time.” The Natural History Museum of Los Angeles County concurs that the upper deposits have low sensitivity for paleontological resources, but points out that excavations in the deeper deposits in the portion of the property north of State Route 38 “may well encounter significant fossil remains.”

The field survey confirmed the presence of recent alluvium on the ground surface. As expected, no fossil remains were found to be present in the project area during the field survey.

IMPACTS

SIGNIFICANCE CRITERIA

The purpose of this study is to identify any potential cultural resources within or adjacent to the project area, and to assist the County of San Bernardino Land Use Services Department in determining whether such resources meet the official definitions of “historical resources,” as provided in the California Public Resource Code, in particular CEQA.

According to Public Resources Code Section 5020.1(j), historical resource includes, but is not limited to, “any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.” More specifically, the California Environmental Quality Act (CEQA) Guidelines (Section 15064.5(a) (1-3)) state that the term “historical resources” applies to such resources listed in or determined to be eligible for listing in California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency.

Regarding the proper criteria of historical significance, the CEQA Guidelines (Section 15064.5 (a) (1-3)) mandate that “a resource shall be considered by the lead agency to be “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources”. A resource may be listed in the California Register if it meets any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history (Public Resources Code Section 5024.2 (c)).

According to Appendix G, the Initial Study Checklist, of the CEQA Guidelines, a project would typically have a significant impact on cultural resources if the project would cause one or more of the following to occur.

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5 (refer to Impact Statement 5.9-1);
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5 (refer to Impact Statement 5.9-1);

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (refer to Impact Statement 5.9-2); and/or
- Disturb any human remains, including those interred outside of formal cemeteries (refer to Section 5.9-3).

ARCHAEOLOGICAL/HISTORICAL RESOURCES

- 5.9-1 *The proposed Project may cause a significant impact to unknown archaeological and/or historic resources visible on-site. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.*

Site CA-SBR-10635H, as stated above, consists of a historic-period refuse scatter. Since many of the artifacts at the site can be dated to the pre-WWII period, it is possible, and probable, that the items were deposited in connection with the early 20th century resort camps known to be in operation in the vicinity. Due to the limited number and types of the artifacts observed, there is insufficient evidence to establish this association conclusively, or association with any persons or events of recognized historic significance. Furthermore, the site constitutes a minor component of a larger historic-period refuse deposit located outside the project area, and its limited information potential is further diminished by extensive disturbances and the intrusion of modern trash. Based on these considerations, the *Historical/Archeological Resources Survey Report* concludes that Site CA-SBR-10635H, as recorded during this study, does not appear to meet any of the criteria for listing in the California Register, and thus does not qualify as a “historical resource.”

Although the field survey effort included a detailed reconnaissance of the site, the potential does exist for subsurface resources to occur and that cannot be visibly detected. This potential impact can be considered significant thus requiring field monitoring mitigation by an archaeologist, qualified and approved by the County during grading and other associated clearing activities. Implementation of mitigation would reduce the significance of potential impacts to a less than significant level.

PALEONTOLOGICAL RESOURCES

- 5.9-2 *The proposed Project may cause a significant impact to unknown paleontological resources on-site. Implementation of recommended mitigation measures would reduce impacts to a less than significant level.*

The field survey results, supported by literature and subsurface testing, indicate that the project area contains sediments deposited during Holocene time. Vertebrate fossils have been found in these same age sediments approximately five miles east of this location. Geologic studies suggest that these vertebrate fossil remains were found in sediments probably associated with a natural Holocene lake (Baldwin Lake) and not in alluvial sediments associated with alluvial fan deposits.

Previous geologic studies have recorded sands and some gravels at depths greater than five feet in the area north of State Route 38. Based on those findings, and in view of the recent alluvium covering the surface to a depth of five feet and the

ground water saturation situation south of the highway, the *Paleontological Resources Survey Report* concludes that there is a moderate potential for the presence of vertebrate fossils within the project area, north of State Route 38, at depths greater than five feet. Although the field survey effort included a detailed reconnaissance of the site, the potential does exist for subsurface resources to occur that cannot be visibly detected. This potential impact can be considered significant thus requiring field monitoring mitigation by a geologist/paleontologist, qualified and approved by the County, during grading and other associated clearing activities. Implementation of mitigation would reduce the significance of potential impacts to a less than significant level.

BURIAL SITES

- 5.9-3 *The proposed Project may cause a significant impact to Native American burial sites which could occur on-site. Implementation of the specified mitigation measures would reduce impacts to a less than significant level.*

According to the *Historical/Archeological Resources Survey Report*, records indicate that a Native American burial ground may have been in close proximity to the eastern end of the project area. A diligent field survey effort was conducted to find any surface manifestation of the reported burial ground, however, none was found. Despite the findings of the field survey effort, the potential does exist for human remains to occur and that cannot be visibly detected. This potential impact can be considered significant and would require that all proper notification actions be taken in the event that human remains are discovered during construction/earth-moving activities. Implementation of mitigation would reduce the significance of potential impacts to a less than significant level.

CUMULATIVE

- 5.9-4 *Cumulative development may adversely affect cultural resources in the north shore area. Resources are evaluated and mitigated on a project-by-project basis.*

The Moon Camp project is located within the north shore of Big Bear Lake. There is limited potential for future development in the project vicinity, assuming that existing US Forest Service owned lands remain undisturbed and undeveloped. Although there is a limited development potential in the north shore area, potential impacts to cultural resources would be evaluated on a site specific, project-by-project basis to ensure that impacts are reduced to less than significant levels. This would be especially true of those developments located in areas considered to have a high sensitivity for cultural (archaeological, paleontological and historical) resources. Each incremental development would be required to comply with all applicable State and Federal regulations concerning preservation, salvage, or handling of cultural resources. In consideration of these requirement and limited amounts of developable land, potential cumulative impacts upon cultural resources would not be considered significant.

MITIGATION MEASURES

The following mitigation measures directly correspond to the identified impact statements in the Impacts discussion.

ARCHAEOLOGICAL/HISTORICAL RESOURCES

- 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.

PALEONTOLOGICAL RESOURCES

- 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.
- 5.9-2b Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates.
- 5.9-2c Identification and curation of specimens into a museum repository with permanent retrievable storage shall occur for paleontological resources.
- 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.

BURIAL SITES

- 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.”

CUMULATIVE

5.9-4 No mitigation measures are recommended.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant impacts related to Cultural Resources have been identified following implementation of mitigation measures referenced in this Section.

5.10 GEOLOGY AND SOILS

The purpose of this Section is to describe the geologic, soil and seismic setting of the project area, identify potential impacts associated with the proposed project, and recommend mitigation measures to reduce the significance of impacts. Information in this Section is based on a geotechnical report for the site prepared by Geologist D. Scott Magorien (dated August, 2002), which includes a site investigation and liquefaction testing program.

The scope of work performed by Mr. Magorien as part of the geology, soils and seismicity portion for the Moon Camp EIR included the following:

- Compile and review relevant reports and maps that address geotechnical, geologic and hydrogeologic conditions for the project and surrounding area. A list of the reports, maps and other relevant data reviewed for this study are presented in the References section of Appendix 15.8.
- A field investigation for this study that included:
 - Reconnaissance-level geologic mapping performed on February 26 and June 20, 2002.
 - Excavation and logging of seven (7) backhoe/test pits on June 20, 2002 to assess near surface soil conditions and bedrock lithology and structure.
 - Drilling, logging and sampling three (3) exploratory rotary wash borings on June 11 and 12, 2002 for the purpose of assessing the presence of potentially liquefiable soils in the vicinity of the lake. During the drilling, Standard Penetration Tests (SPT) were performed every five (5) feet, and samples from each test placed in plastic bags for later soil classification. Applicable well drilling permits were obtained from the County of San Bernardino prior to actual drilling of each of the borings.
- Contacted various individuals who have relevant information concerning the geologic and hydrologic conditions in the area.

Information pertaining to the investigation are provided in this section and Appendix 15.8.

EXISTING CONDITIONS

GEOLOGIC SETTING

The Moon Camp project area is situated within the central portion of the Southern California physiographic province known as the Transverse Ranges Geomorphic Province. This province consists of an east-west trending set of mountain ranges, which include from east to west, San Bernardino, San Gabriel and Santa Inez

mountains. This alignment of youthful mountains owes its existence to ongoing tectonic activity associated with the San Andres Fault system. The geomorphology of the San Bernardino Mountains attests to the youthful nature of this uplifted structural block which is bordered on the north by the North Frontal Fault System, and on the south by the San Andreas fault.

Big Bear Valley is one of a series of east-west trending valleys in the eastern San Bernardino Mountains, believed to have formed largely by both high angle and low angle faults in the region. The valley is considered to be a bedrock enclosed basin filled with more than 500 feet of lacustrine and alluvial sediments derived from the surrounding mountainous areas.

Big Bear Lake, which borders the project area on the south, was created by construction of a dam in 1884 across Bear Creek. In 1912, an 80-foot high multiple-arch dam was constructed to replace the lower older dam. In the late 1980's the Big Bear Lake Dam underwent a seismic retrofit, which included improvement of the foundation conditions beneath the downstream side of the dam. When full, the lake has an area of 2,960 acres, a volume of about 72,200 acre-feet, and a water surface elevation of 6,745 feet.

Topographically, the project area occupies the southernmost margin of a lobe-shaped, south-facing hillside that descends into Big Bear Lake. Natural slopes within the area display surface gradients ranging from 2:1 (horizontal to vertical) along the eastern margin of the site, to approximately 4:1 within the central and western portions, to more gentle gradients near the shoreline of Big Bear Lake. The highest point within the project area is at an elevation of 6,962 feet above mean sea level. Maximum relief between the northern margin of the property and the high water line (i.e., 6,745 feet msl) is approximately 215 feet.

There are two prominent, southerly flowing drainages transecting the project area. Surface gradients within these ephemeral drainage courses average approximately 0.08 foot/foot.

The two major geologic units that comprise the project area include older alluvium of Pliocene-late Miocene age (i.e., 1.5 to 5 million years old), and lesser amounts of Holocene age (present to 11,000 years ago) alluvium that occupies the bottom of the major active stream channels. The older alluvial deposits comprise approximately 90 percent of the project area and extend to the northern shoreline of Big Bear Lake.

Based on a review of published relevant geologic, geotechnical data, as well as the findings from exploratory drilling, excavation of test pits and reconnaissance-level geologic mapping, there appears to be only limited geologic hazards on the property as it relates to site development. Possible geologic/geotechnical constraints to proposed residential development include potential instability of large cut slopes, soil erosion within the two major drainages that transect the property, and possible earthquake-induced seiche along the near shore portions of the site. Although the project area is located within the seismically active region of southern California, there are no documented active or potentially active faults transecting or projecting towards the project area.

GEOLOGIC MATERIALS

Surficial materials within the site consist of topsoil, slopewash materials and recent stream-laid alluvial deposits within the active stream channels. Older alluvial deposits underlie the entire site at relatively shallow depths. The distribution of the more significant deposits is shown on Exhibit 5.10-1, *Geologic Map*. The designations shown below, in parenthesis, correspond to those shown on the geologic map.

TOP SOIL (NOT DESIGNATED ON GEOLOGIC MAP)

Native topsoil which blankets much of the site consists mainly of sandy loam with angular gravel to cobble-size fragments of quartzite derived from older bedrock formations. These soils are typically dry, porous, loose, contain varying amounts of organic material, and range in thickness from approximately eight to ten inches deep. These soils are considered to be moderately erodible in their natural condition and considered too gravelly and cobbly for use as topsoil for landscaping.

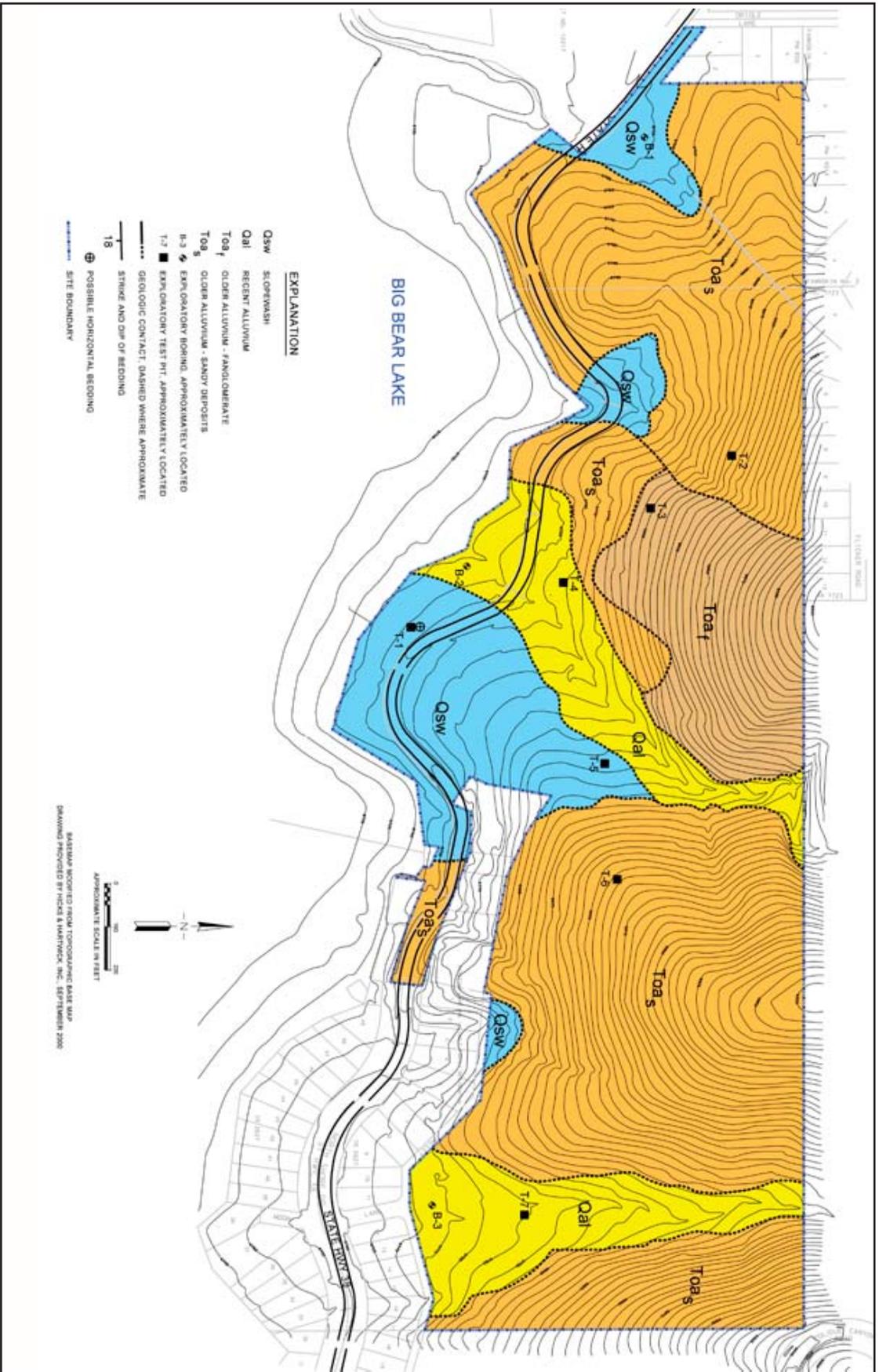
SLOPEWASH (Qsw)

Slopewash deposits consist of the downslope accumulation of eroded topsoil and sediments derived from the underlying older alluvial materials. Slopewash typically contains abundant organic debris and is moderately to highly compressible.

Slopewash occurs within broad drainage swales, and as widespread blanket deposits on the more gentle, natural slope in the south central portion of the area. The compositions of these soil-like deposits reflect the composition of the older alluvial soils from which they are derived. Where observed in the exploratory test pits, slopewash deposits consist largely of an admixture of silty sand, angular gravel to cobble-size fragments of hard, crystalline bedrock. These soils range in thickness from 1 to 4 ½ feet, and are commonly dark brown to dark yellowish-brown in color, loose to medium dense, dry to slightly moist, porous, and contain varying amounts of roots and rootlets, and are considered moderately to highly compressible. Erodibility in their natural state is considered to be slight to moderate.

ALLUVIAL (Qal)

Alluvial deposits occupy the bottom of two major and one minor drainage channels that transect the project area (refer to Exhibit 5.10-1, *Geologic Map*). These Holocene age, soil-like materials have been deposited, eroded and re-deposited by intermittently flowing streams within these drainages. Where encountered in exploratory borings B-2 and B-3, and exploratory test pit TP-7, these soils consist of crudely stratified layers and lenses of silty sand with varying amounts of angular gravel to cobble-size fragments of quartzite and marble. The alluvial soils are dark brown to dark yellowish-brown in color, comprised of fine to medium grain sand, dry to slightly moist, loose and moderately porous and contain numerous roots and rootlets. Where noted in the two borings and the test pit, the thickness of the alluvial soils in the study area ranges from about 3.5 to 17 feet (\pm). Exploratory boring B-1 encountered only surficial slopewash-type deposits (as described above).



Source: D. Scott Magorien, CEG, Geologic Map, August 2002.



Prior to this investigation, RGS Geosciences' (2001) geologic feasibility study indicated that these alluvial soils near the shoreline of Big Bear Lake are potentially susceptible to seismically-induced liquefaction. Each of these drainages was targeted, as close to the shoreline as considered practical, for exploratory drilling and standard penetration testing (SPT) in three (3) exploratory borings. These borings have been designated B-1, B-2 and B-3, the locations of which are shown on Exhibit 5.10-1, *Geologic Map*.

The primary approach used in this study to assess liquefaction potential of the alluvial soils was based on an empirically based approach as presented by Seed and Idriss (1982). For this approach, SPT blowcounts (e.g. drive energy of a 140 pound weight falling a distance of 18 inches), as well as other seismic and overburden pressures at the point(s) of interest are needed for the assessment. For this study, SPT blowcounts were obtained at approximately every five feet in each of the three rotary-wash borings.

Based on the results of the SPT and visual observations of the soil samples, the recent (i.e., Holocene age) alluvial soils below a depth of approximately eight feet are not considered prone to settlement or seismically-induced liquefaction. The upper eight feet are considered compressible, and are highly erodible. Given the gravelly/cobbly nature of the near surface alluvium, and the elevation as it relates to high water level in the lake (elevation 6,745 feet msl), the likelihood of seismically induced liquefaction of these sediments along, or inland, of the lakefront is considered remote.

OLDER ALLUVIUM (Toa_s, Toa_f)

The entire project area is underlain to significant depths (greater than 400 feet) by what is referred to as Older Alluvium of Plio-Miocene age. These ancient deposits represent what remains of an extensive accumulation of alluvial (stream-laid) soil materials that had been eroded from adjacent bedrock highlands north of the project area. According to geologic mapping by the U.S. Geologic Survey, these alluvial deposits rest unconformably above granitic bedrock of Cretaceous age. Although well dissected, these deposits form an increasingly thickening wedge from north to south. According to water well logs (Geoscience Support Services, Inc., 2000), these sediments are over 400 feet thick near the shoreline and serve as the principal groundwater reservoir beneath the site.

Exposures of the older alluvial deposits are limited to small areas on the road cuts along State Route 38, and on several 12- to 18-foot high road cuts on Polique Canyon Road that leads into Holcomb Valley. No evidence of significant surficial or gross instability was observed either within the project area or along the roadway cuts. Many of these road cuts were quite steep, having inclinations exceeding 45°. However, the lower portions of these cut slopes were commonly covered with a talu apron displaying an inclination of approximately 33°.

In order to evaluate the near-surface lithologic makeup and bedding plane structure of these sedimentary deposits for the purpose of preliminarily assessing slope stability issues, six (6) exploratory backhoe pits were excavated within the property using a rubber-tired, Case 580 extend-a-hoe equipped with a 3 foot wide bucket.

Each of the pits was situated within an area characterized by a certain type of topographic terrain and/or near a proposed cut slope, and varied in depth from approximately two to six feet below ground surface. All the pits were geologically logged and backfilled with the excavated materials. The location of each pit is shown on Exhibit 5.10-1, *Geologic Map*.

The main lithologic character of these ancient soils is represented by layers of clayey sand (labeled Toa_s on the geologic map) that contains varying amounts (up to about 10 percent) of angular, gravel to cobble-size fragments of quartzite derived from older bedrock that now forms discontinuous exposures along the ridgeline to the north of the project area. These older alluvial soils are commonly dark yellowish-brown to strong brown in color, are very dense (i.e., over-consolidated), contain medium to coarse-grained sand particles, and are thinly to thickly bedded. Based on observations within exploratory test pit excavations, these soils were difficult to excavate below a depth of several feet.

Near the north-central portion of the study area the older alluvium is represented by fanglomerate-type deposits. These materials labeled Toa_f (on the geologic map) represent the eroded remnants of an ancient alluvial fan, consisting largely of angular to subangular cobble to gravel size quartzite fragments with approximately 30 percent silty sand. Similarly to the underlying clayey sand deposits, the fanglomerate is light brownish-yellow, dense, and is difficult to excavate past a depth of about three feet. These deposits appear to have limited area extent, and form a relatively thin veneer atop the more extensive, older clayey sand (Toa_s) deposits.

Overall, there does not appear to be any major geotechnical-related constraints associated with the older alluvial deposits, except perhaps where clay deposits prove to be moderately or highly expansive and where significant cut slopes are planned, as discussed in the Impacts section which follows.

GEOLOGIC STRUCTURE

The geologic structure within the project area is defined by the orientation of bedding planes within the older alluvium (Toa_s). Where observed in the exploratory test pits TP-2 and TP-5, located within the northern portion of the study area, bedding planes exposed near the bottom of each pit varied in strike between North 65° West (N65W), and east-west (EW), and dip to the south and southwest at 10° and 18°. In test pit TP-1, located near the shoreline of Big Bear Lake, bedding within the older alluvium appeared to be essentially horizontal. If these bedding plane attitudes are representative of the upland and shoreline areas of the project site, it would appear that the older alluvium has been folded into a roughly east-west trending synclinal fold, the southern limb of which has been eroded away during the formation of Bear Valley. If true, this folding is judged to have occurred over a period of hundreds of thousands of years as a result of San Andreas tectonics. Conversely, this apparent variation in the dip of bedding planes could be a result of ancient faulting associated with uplift of the San Bernardino Mountains. However, no evidence of faulting, active or otherwise, has been documented within or adjacent to the project area.

If these bedding planes observed in the exploratory test pits are representative of the orientation of bedding within areas of the site, south-facing cut slopes associated