Source:

Michael Brandman Associates

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Exhibit 1-5
Moon Camp TTM No. 16136 Revised Alernative Project-2011

SAN DERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Water Service Options and Infrastructure

There are currently three (3) separate water service options for the 2011 Alternative Project. Under Alternative #1, significant improvements to the Big Bear Department of Water and Power (DWP) upper Fawnskin pressure zone are necessary to provide water service to the site. The three ground water production wells located within the Project site would be deeded to the DWP at the time the tract map is recorded. Annexation to the DWP's authorized service area is required for DWP to be the water service provider. DWP has conducted a Water Feasibility Study (Alda 2007), and provided a conditional will serve letter to the Applicant. However, the majority of the Project site is outside of the DWP authorized service area as well as the City's Sphere of Influence. DWP cannot provide water service without first complying with the provisions of Government Code Section 56133, which pertains to the Local Area Formation Commission (LAFCO) annexation process. In order for the DWP to provide water service to the Project site and to own and operate the 2011 Alternative Project's water system, LAFCO would have to approve an expansion of the City of Big Bear Lake's Sphere of Influence to include the entire existing DWP Water Service Area in Fawnskin as well as the entire Project site. The developer would be required to construct the on-site and off-site facilities as described in the DWP's Water Feasibility Study (Alda 2007), as amended by the 2011 update, as discussed below.

The Water Feasibility Study provides two options (A and B) for expanding the existing Fawnskin Water System infrastructure. Option B has been chosen by DWP and the Applicant as the preferred Water Feasibility Study alternative for Water Service Alternative #1. In either case, the Applicant would install all common infrastructures, including fire hydrants, and would also install the water main lines within the project site. The water improvements will primarily be constructed within the rights-of-way of existing or proposed paved roads. The water service infrastructure required is as follows:

- 900 ft of 12-inch pipeline along Ridge Road from the intersection of Raccoon Drive south to tie to an existing 8-inch PVC pipeline on a private easement.
- 200 ft of 12-inch pipeline along private easement to connect Fawnskin Drive and Canyon Road.
- 650 ft of 12-inch pipeline along Canyon Road to Chinook Road.
- 600 ft of 12-inch pipeline along Chinook Road to Flicker Road.
- 500 ft of 12-inch pipeline along Flicker Road to Mesquite Drive.
- 400 ft of 12-inch pipeline along Mesquite Road to North Shore Drive.
- 250 ft of 12-inch pipeline along North Shore Drive to development westerly boundary.
- Refurbishing existing Cline Miller pump station to augment pumping capacity to approximately 300 gmp.
- 50 KW on-site emergency generators at the Cline Miller Reservoir.

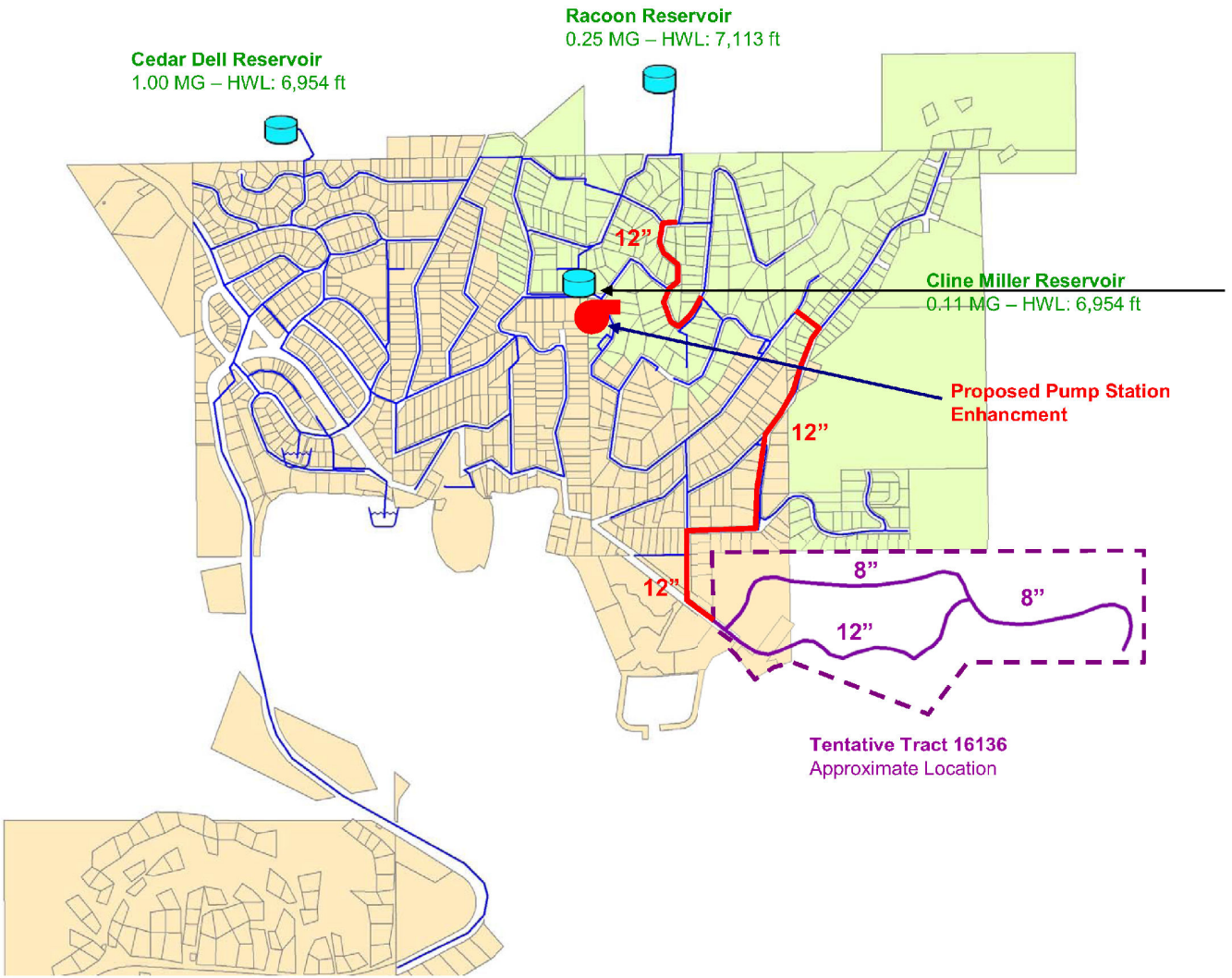
See Exhibit 1-6 for the proposed water facilities and improvements.

Water Service Alternative #2 (see Section 4.9 of the Revised and Recirculated Draft EIR No. 1 for details) would not require LAFCO's approval and would not create the need for expansion of the City's Sphere of Influence around Fawnskin and the project site. Instead, County Service Area 53C (CSA 53C) would own and operate the water facilities within the project site and contract with the DWP for a water interconnection to the existing Fawnskin water system. The developer would be required to construct the same on-site and off-site facilities as described above.

Under Water Service Alternative #3 (see Section 4.9 of the Revised and Recirculated Draft EIR No. 1 for details), instead of constructing the off-site water facilities (within the Fawnskin Water System) identified in the DWP's Water Feasibility Study Option B (Alda, 2007, which is the basis for Water Service Alternatives #1 and #2, above), water service would be provided entirely from an onsite water supply, storage and distribution system. Water would be extracted from the onsite water wells; the 2011 Alternative Project would require construction of an on-site aboveground water tank (238,600 gallons) and an on-site booster station capable of providing the daily water supply flow and the required 1,750 gallons per minute fire flow. The water tank and booster station would be sized based upon the same demand calculations contained in the Water Feasibility Study and Water Service Alternatives #1 and #2. Water Service Alternative #3 would not require LAFCO's approval and would not require the expansion of the City's Sphere of Influence around Fawnskin and the project site. The developer would also construct the same on-site (within the Project site) water facilities (water main lines, fire hydrants, etc) identified in the Alda Water Feasibility Study necessary to transmit water to the developed lots within the 2011 Alternative Project. Existing water wells FP2 and FP4 would be connected to the on-site water system and pump their water into the 238,600 gallon on-site reservoir. The on-site booster station would produce the Average and Maximum Daily Demand flows (8.68 gpm and 15.27 gpm) and the Fire Flow of 1,750 gpm for the 2-hour duration. The booster station would include an emergency electrical generator to allow the station to operate during a power outage. The water improvements for Water Service Alternative #3 will primarily occur within the 2011 Alternative Project's paved roads and at the 2011 Alternative Project's water tank site. The construction of the water tank would include grading of an approximately 75-foot-diameter pad for the reservoir. CSA 53C would own and operate this independent water system.

Projected water demand for the proposed Moon Camp 50-lot subdivision (2011 Alternative Project) is based on the Water Feasibility Study's consumption rate of 250 gallons per day (gpd) per connection. Exhibit 1-6, Proposed Water Facilities, shows the Water Feasibility Study's proposed Moon Camp water system. Maximum day demand is estimated based on information provided in the DWP Water Master Plan and it is equivalent to 1.76 times the average day demand. Therefore, the average and maximum day demands for the 2011 Alternative Project are estimated as follows:

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



Source: ALDA Engineering Inc.

NORTH

Not to Scale

Michael Brandman Associates

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Exhibit 1-6
Proposed Water Facilities

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

Based on an estimated average day demand of 12,500 gallons, the annual water demand for the 2011 Alternative Project is estimated at 4.56 million gallons or 14.0 acre-feet per year.

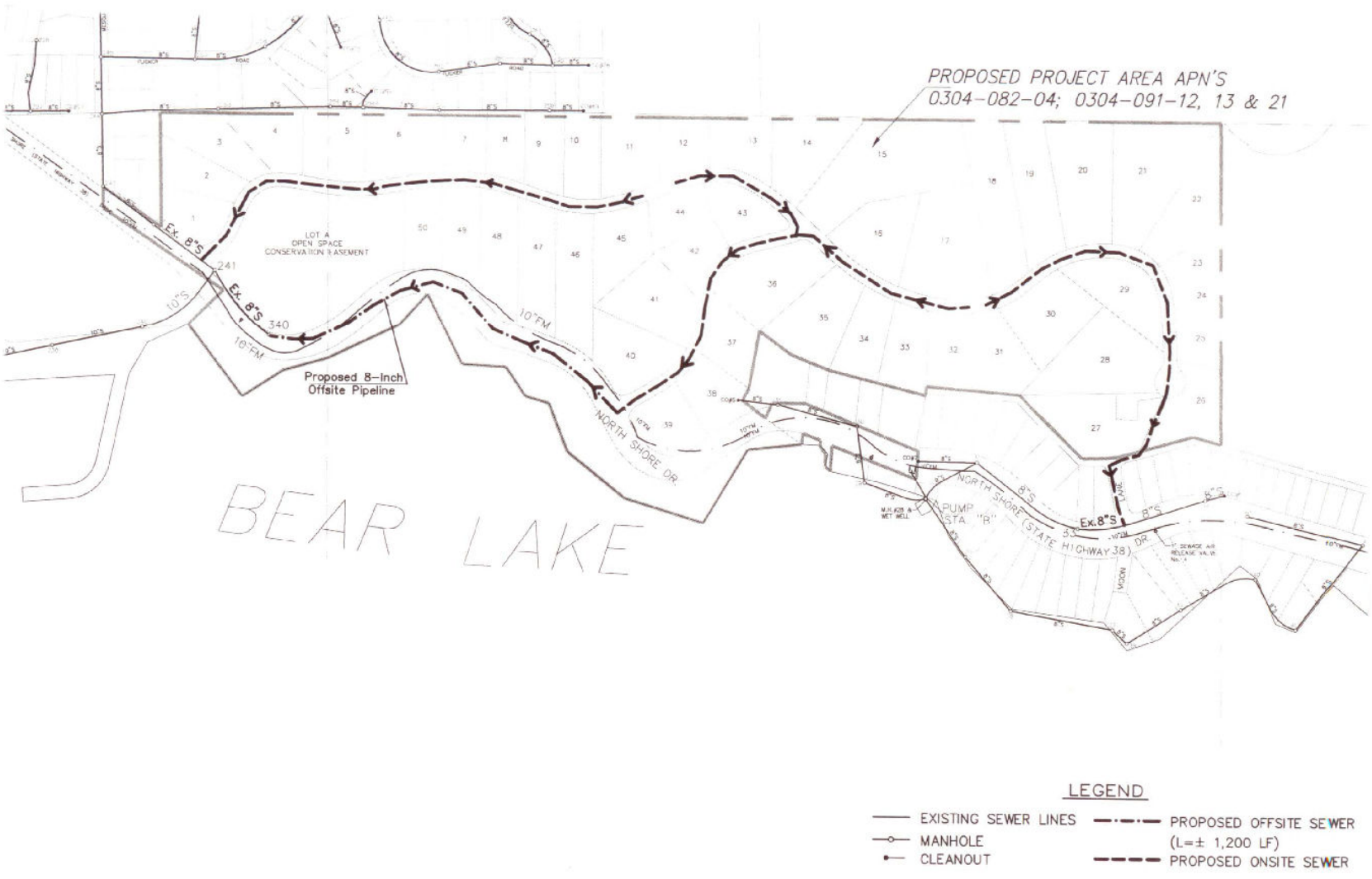
Wastewater Service

The Project site is located within County Service Area 53, Improvement Zone B (CSA 53B) administered by the County of San Bernardino Special Districts Department. The Sewer Feasibility Study indicated that the existing sewer system located adjacent to the project site to the southeast and southwest is capable of handling the wastewater flows from the 2011 Alternative Project.

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

Roadway Facilities

The 2011 Alternative Project will include a development of roadway facilities to service the project and provide direct access for the residents to SR-38. The 2011 Alternative Project proposes two points of ingress and egress from SR-38 with Street "A" terminating on the east-end of the Project in the cul-de-sac. The 2011 Alternative Project roadway system will consist of standard two-lane roadways with two stop sign-controlled intersections on SR-38 and one intersection interior to the Project. Development of the roadway infrastructure will occur at one time at the initial phase of 2011 Alternative Project development.



Source: ALDA Engineering Inc.

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Michael Brandman Associates

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Exhibit 1-7
Proposed Sewer Facilities

SAN BERNARDINO COUNTY
MOON CAMP RESIDENTIAL SUBDIVISION PROJECT

SECTION 2: BIOLOGICAL RESOURCES

2.1.1 - Introduction

This section describes the biological character of the Project site in terms of plants, wildlife, and wildlife habitats, and analyzes the biological significance of the site in view of federal, State, and local laws and policies. This section evaluates the potential 2011 Alternative Project impacts to biological resources on-site and in the vicinity of the Project site and recommends mitigation measures, where feasible, to reduce the significance of impacts that are identified.

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

- Results of Bald Eagle Survey on Tentative Tract 16136, Moon Camp, Fawnskin, San Bernardino County, California, Bonterra Consulting (2002);
- Focused Flying Squirrel Trapping Report, Moon Camp Project, Fawnskin, San Bernardino, California, Michael Brandman Associates (2007);
- Moon Camp Property, Fawnskin Area: Vegetation and Special Status Plants, Scott White Biological Consulting (2007);
- Site Assessment and Review of Previously Prepared Biological Documentation of the Proposed Moon Camp Tentative Tract (TT) 16136 Project Site near Fawnskin, San Bernardino County, California, Michael Brandman Associates (January and February 2007);
- Southern Rubber Boa Letter Report from Glenn Stewart of the Biological Sciences of California State Polytechnic University of Pomona (2007);
- Southwestern Willow Flycatcher Focused Survey Report Moon Camp Project, Fawnskin, San Bernardino County, California, Michael Brandman Associates (2007);
- Moon Camp Tentative Tract 16136 Supplemental Focused Special Status Plant Species Survey, Timothy Krantz Environmental Consulting (2008);
- Bald Eagle Count in Area, Moon Camp, Fawnskin, San Bernardino County, California, US Forest Services (2009);
- Revised Moon Camp Property, Fawnskin Area: Vegetation and Special Status Plants, Scott White Biological Consulting (2009); and
- Moon Camp Tentative Tract 16136 Supplemental Focused Special Status Plant Species Survey, Timothy Krantz Environmental Consulting (2010).

A Supplemental Focused Special Status Plant Species Survey (Timothy Krantz Environmental Consulting, 2010) was conducted (included in Appendix A-11) to address comments submitted by concerned parties with regard to the Revised and Recirculated -2010 Draft EIR No. 1 for the Moon Camp 50-Lot Residential Subdivision, Tentative Tract 16136. Specifically, this botanical survey focused on clarifying the following information:

- Reconcile differences between the findings of Scott White (White 2007) and Krantz (2008) with regard to the presence or absence of Ashy-Gray Indian Paintbrush (Castilleja cinerea) which is listed as federally threatened;
- Provide additional quantitative and qualitative information with regard to Ashy-Gray Indian Paintbrush and any other formally-protected plant species on site;
- Consider potential off-site impacts on the U.S. Forest Service pebble plain habitat area known to occur to the northeast of the Project site; and
- Provide comparable quantitative and qualitative information with regard to the proposed off-site pebble plain mitigation area located at the terminus of Dixie Lee Lane.

The findings within the Supplemental Focused Special Status Plant Species Survey (Timothy Krantz Environmental Consulting, 2010) augment the Supplemental Focused Special Status Plant Species Survey conducted by Dr. Timothy Krantz, dated June 29, 2008, providing an additional above-average precipitation year for observation. Particular attention was given to assessing the distribution and abundance of Ashy-Gray Indian Paintbrush —as this is the only formally-listed rare plant species identified on the Moon Camp property. The Moon Camp Tentative Tract 16136, Supplemental Focused Special Status Plant Species Survey (August 29, 2010) is located within Appendix A of this Revised and Recirculated Draft EIR No. 2.

2.1.2 - Existing Conditions

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

2.1.3 - Vegetation Communities

Plant communities in California have generally been classified by biologists either according to Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986) or Sawyer and Keeler-Wolf's A Manual of California Vegetation (1995). Holland's descriptions were developed as part of CDFG's California Natural Diversity Database (CNDDB), and Sawyer and Keeler-Wolf's manual was developed through the California Native Plant Society (CNPS). The

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

Four vegetation types occur within the Project site. Exhibit 2-1, Plant Communities Map, illustrates their distribution and Table 2-1 summarizes the extent of vegetation types present within the Project site. Each of the vegetation types observed during field surveys are described below.

Table 2-1: Existing Vegetation Types on the Project Site

Vegetation Type	Acreage
Jeffrey Pine Forest	54.92
Pebble plain like soil conditions*	0.69
Lake Shoreline/ Ruderal	4.0
Developed (SR-38)	2.82
Total	62.43

* The Supplemental Focused Special Status Plant Species Survey (August 29, 2010)) concludes that the pebble plain like soil conditions determined to be located within Lot A (as identified within the Supplemental Focused Special Status Plant Species Survey, 2008), is not true pebble plain due to the lack of the two indicator species (*Arenaria ursina* and *Eriogonum kennedyi austromontanum*).

Jeffrey Pine Forest

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

Open Jeffrey pine forest is shown as a separate vegetation type on Exhibit 2-1. Areas within the Jeffrey pine forest that are more open and where herbaceous cover is dominated by Wright's matting buckwheat are suitable habitat for the federally-listed Threatened Ashy-Gray Indian Paintbrush, CNPS 1B listed (which include plants that are rare, threatened, or endangered in California and

elsewhere) Parish's rock-cress (*Arabis parishii*), and CNPS 1B listed silver-haired ivesia. Of the 54.92 acres of Jeffrey Pine forest, 18.01 acres are considered open Jeffrey Pine forest habitat.

Consideration of Pebble Plain

Drought related conditions, occurring during the first half of this decade resulted in certain sensitive plant species being more difficult to locate and identify due to dormancy factors attributable to drought. Therefore, the surveys that were conducted during 2000-2007 attempted a more focused approach in order to identify all suspected areas probable for containing threatened pebble plain species. Understanding the impact of drought for certain species, including the Federally Threatened Ashy-Gray Indian Paintbrush, these surveys considered certain areas to be occupied despite the actual lack of identifiable species, assuming their presence would occur during years of normal rainfall. This practice, through trial and error, resulted in an over-calculation of species present on the Project site, which is apparent in the 2008 and 2010 Krantz Supplemental Focused Special Status Plant Species Survey. The Supplemental Focused Special Status Plant Species Surveys conducted in years normal or above average rainfall, identified an accurate distribution of Ashy-Gray Indian Paintbrush species within the Project site.

The 2008 Supplemental Focused Special Status Plant Species Survey concluded that Pebble plain soil like conditions occurred on approximately 0.69 acres of the Project site, north of State Route 38 (SR-38). The report stated that it appeared as a distinct open patch within open Jeffrey pine forest in the western portion of the Project site and that the substrate in this area consisted of clay soil mixed with quartzite pebbles and gravel that were continually pushed to the surface through frost action. If so, this substrate would support 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. The 2011 Alternative Project was designed to include the 0.69 acre pebble plain occurrence within Lot "A", an area designated as open space to be protected in perpetuity through a formal conservation easement. A Supplemental Focused Special Status Plant Species Survey (August 29, 2010) was conducted to respond to concerns raised in comments received on the Revised and Recirculated Draft EIR No. 1. The Supplemental Focused Special Status Plant Species Survey (August 29, 2010) concludes that the pebble plain-like soil conditions located within Lot A (as identified within the Supplemental Focused Special Status Plant Species Survey, 2008), is not true pebble plain due to the lack of the two key indicator species (*Arenaria ursina* and *Eriogonum kennedyi austromontanum)*. The Supplemental Focused Special Status Plant Species Survey (August 29, 2010) findings augment the Supplemental Focused Special Status Plant Species Survey conducted by Dr. Krantz, dated June 29, 2008, providing an additional above-average precipitation year for observation. Therefore, based on the finding of the Supplemental Focused Special Status Plant Species Survey (August 29, 2010), no pebble plain habitat exists on the 2011 Alternative Project site. See Exhibit 2-2 for the location of pebble plain soil conditions.