

CALIFORNIA COASTAL COMMISSION

SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800



Th 23d

ADDENDUM

DATE: June 11, 2007
TO: Commissioners and Interested Parties
FROM: South Central Coast District Staff
SUBJECT: Agenda Item Th 23d, Thursday, June 14, 2007, Coastal Development Permit Applications 4-06-132 (Zadeh and Esplana)

The purpose of this addendum is to correct typographical errors in the staff report and clarify the intent of two special conditions. *Note: ~~Strikethrough~~ indicates text deleted from the May 31, 2007 staff report pursuant to this addendum and underline indicates text added to the May 31, 2007 staff report pursuant to this addendum.*

1. The title for Exhibit 5 of the May 31, 2007 staff report shall be revised as follows to correct a typographical error:

Exhibit 5, ~~Conversation~~ Conservation Easement Area

2. The Summary of Staff Recommendation on Page 2 of the May 31, 2007 staff report shall be revised as follows to correct a typographical error:

Staff recommends **APPROVAL** of the proposed project with ~~EIGHTEEN (18)~~ FIFTEEN (15) **SPECIAL CONDITIONS** regarding 1) plans conforming to geologic recommendation, 2) drainage and polluted runoff control plans, 3) landscaping and erosion control, 4) assumption of risk, 5) structural appearance, 6) lighting, 7) removal of excess excavated material, 8) removal of natural vegetation, 9) habitat impact mitigation, 10) future development restriction, 11) deed restriction, 12) open space conservation easement, 13) revised plans, 14) oak tree protection and monitoring, and 15) oak tree mitigation.

3. Special Condition Fourteen (14) on Page 16 of the May 31, 2007 staff report shall be revised as follows to clarify the procedures for monitoring of oak trees on the project site:

14. Oak Tree Protection and Monitoring

To ensure that on-site oak trees are protected during grading and construction activities, protective barrier fencing shall be installed around the drip line of all oak trees whose drip lines are within 100 feet of the proposed development during construction operations. The permittee shall also follow the oak tree preservation recommendations that are enumerated in the "Revised Oak Tree Report" by L. Newman Design Group Inc. dated March 15, 2005.

Prior to commencement of construction, the permittee shall retain the services of a biological consultant or arborist with appropriate qualifications acceptable to the Executive Director. The permittee shall ensure that the biological consultant or arborist shall be is present on site during grading and construction activities to ensure that no work is conducted within the protected zone of any oak trees (5 feet from the drip line or 15 feet from the trunk, whichever is greater) except as permitted pursuant to this coastal development permit. The biological consultant or arborist shall immediately notify the Executive Director if unpermitted activities occur or if oak trees are removed or impacted beyond the scope of the work allowed by Coastal Development Permit 4-06-132. This biological consultant or arborist shall have the authority to require the applicant to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise. Should any work occur within the protected zones of any oak trees that is not included in this coastal development permit, the permittee shall cease work and the biological consultant and permittee shall immediately notify the Executive Director of the Commission. If significant impacts or damage occur to the oak trees, the applicants shall be required to submit a revised, or supplemental program to adequately mitigate such impacts. Any oaks which are inadvertently impacted, destroyed or damaged during implementation of the project shall be replaced in kind at a 10:1 or greater ratio onsite. The revised, or supplemental, program shall be processed as an amendment to this coastal development permit.

The permittee shall also direct the biological consultant or arborist shall to monitor all oak trees with canopies within 100 feet of the proposed septic system (identified in the above referenced "Revised Oak Tree Report" by L. Newman Design Group Inc.) for a period of ten (10) years minimum. The permittee shall submit an annual monitoring report shall be submitted for the review and approval of the Executive Director for each of the ten years. Should any of these trees be lost or suffer worsened health or vigor as a result of this project, as determined by the Executive Director, the permittee shall submit, for the review and approval of the Executive Director, an on-site oak tree replacement planting program, prepared by a qualified biologist, arborist, or other qualified resource specialist, which specifies replacement tree locations, planting specifications, and a monitoring program to ensure that the replacement planting program is successful. Replacement trees shall be provided at a rate of 10:1.

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Filed: 1/03/07
180th Day: 7/02/07
Staff: Melissa Hetrick
Staff Report: 5/31/07
Hearing Date: 6/14/07



Th 23d

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-06-132

APPLICANT: Kianoush Zadeh and Lisa Esplana

PROJECT LOCATION: 24803 Piuma Road, Malibu (Los Angeles County)

PROJECT DESCRIPTION: The applicant proposes to construct a five story, 35 foot high, 3,997 sq. ft. single family residence and garage. The first story is a 545 sq. ft. garage, the second story a 625 sq. ft. mezzanine and the third through fifth stories livable residential space that are 1,184, 958 sq. ft., and 685 sq. ft. in size respectively. The development also includes improvements to an existing dirt access road and installation of a septic tank and system, water well, and 10,000 gallon water tank.

LOCAL APPROVALS RECEIVED: County of Los Angeles Fire Department Preliminary Fuel Modification Plan Approval; County of Los Angeles Regional Planning Approval in Concept; Los Angeles County Regional Planning Oak Tree Permit #03-132; Los Angeles County Department of Health Services approval of well and septic system.

SUBSTANTIVE FILE DOCUMENTS: Los Angeles County Certificate of Compliance 94-0441 recorded as Document #95-178645 on February 2, 1995 and correction recorded as Document #06-0888802 on April 24, 2006; "Update Letter-Geologic/Geotechnical Engineering Study, 24803 Piuma Road, Malibu, CA," prepared by Professional Geotechnical Consultants Inc on October 23, 2006; "Geologic/Geotechnical Engineering Study of 24803 Piuma Road, Malibu, CA," prepared by Gold Coast Geoservices, Inc. February 22, 2005; "Revised Oak Tree Report, 24803 Piuma Road, Malibu," prepared by L. Newman Design Group, Inc. March 15, 2005 and addendum dated November 7, 2006; "Biological Constraints Analysis for 24803 Piuma Road, Malibu" prepared by Steven G. Nelson in May 2001 and addendum dated October 27, 2006.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends **APPROVAL** of the proposed project with **EIGHTEEN (18) SPECIAL CONDITIONS** regarding 1) plans conforming to geologic recommendation, 2) drainage and polluted runoff control plans, 3) landscaping and erosion control, 4) assumption of risk, 5) structural appearance, 6) lighting, 7) removal of excess excavated material, 8) removal of natural vegetation, 9) habitat impact mitigation, 10) future development restriction, 11) deed restriction, 12) open space conservation easement, 13) revised plans, 14) oak tree protection and monitoring, and 15) oak tree mitigation.

The proposed project site is located on an 4.86 acre property (APN 4456-037-051) located on the north side of Piuma Road within the Santa Monica Mountains in Los Angeles County. Piuma Road in the vicinity of the subject lot follows the east-west trending Piuma Ridgeline. The subject lot extends from the ridgeline down the north facing slope. The majority of the lot is undeveloped and vegetated with dense interspersed native oak woodland and chaparral habitat considered environmentally sensitive habitat area (ESHA). Several large coast live oak trees are located on the property. An approximately 14-foot wide cleared dirt road extends across the property from the southwest to northeast corners of the lots. A strip of land on the property directly adjacent to Piuma Road has also been thinned and cleared. These disturbed areas pre-date the effective date of the Coastal Act in 1977 and are not considered ESHA.

The subject lot is surrounded to the south, southeast, and west by large lots predominantly covered in chaparral and oak woodland habitats and sparsely developed with single family residences. The areas to the north and east of the lot are characterized by undeveloped natural terrain vegetated in chaparral and oak woodland habitat. The subject lot is located in the Malibu/Cold Creek Resource Management Area. The proposed residence will be visible from Piuma Road and Malibu Canyon Road, visually significant public roadways, and will extend above Piuma Ridgeline, a visually significant ridgeline. The proposed residence will also be visible from the public Backbone Trail and Malibu Creek State Park.

The applicant proposes to construct a five story, 35 foot high, 3,997 sq. ft. single family residence including garage. The residence is designed to be stepped into the hillside. The first story is a 545 sq. ft. garage, the second story a 625 sq. ft. mezzanine and the third through fifth stories livable residential space that are 1,184, 958 sq. ft., and 685 sq. ft. in size respectively. While the proposed residence is at no point above 35 feet in height above existing grade, the change in elevation from the lowest point of the 1st floor garage (1,673 feet above sea level) and top of the highest roofline (1,732 feet above sea level) is approximately 59 feet. The development also includes installation of a septic tank and system, water well, and 10,000 gallon water tank (10 feet in height; top elevation 1,709 feet above sea level). The applicant is also proposing improvements to an existing 14-foot wide access road, including placement of gravel road material and installation of three retaining walls.

The proposed residence/garage has been redesigned by the applicant so that it does not encroach upon the protective zone (5 feet from edge of canopy) of any oak trees onsite). The residence will, however, require removal and thinning of chaparral and the understory of oak woodland habitat considered ESHA for construction and fuel modification for the residence. Additionally, installation of retaining walls on the existing access road will require excavation within the protective zone of two oak trees. Staff has explored numerous alternatives to the project to minimize impacts to oaks and ESHA. Given the steep slopes and coverage of the lot with oak woodland habitat, the proposed project is the alternative that is least damaging on biological resources.

The proposed development would obstruct views from a scenic highway, impact scenic vistas from public viewing locations on Malibu Canyon Road and public parkland and trails. Mitigation measures, however, and changes to the design of the development can minimize these impacts. Special conditions to the permit, therefore, are proposed to require the applicant to submit revised plans, for the review and approval of the Executive Director that would: remove the top story of the residence; disallow development above 1,722 feet above sea level, and prevent any redesign to include encroachment into the protective zones of nearby oak trees. The resulting residence would provide for a 1st floor 545 sq. ft. garage and three stories of livable space totaling 2,767 sq. ft. This size residence conforms to the community character of the area and minimizes visual impacts, particularly from Malibu Canyon Road and Malibu Creek State Park.

The standard of review for the proposed permit application is the Chapter Three policies of the Coastal Act. As conditioned, the proposed project is consistent with all applicable Chapter Three policies of the Coastal Act.

STAFF RECOMMENDATION:

I. Approval with Conditions

The staff recommends that the Commission adopt the following resolution:

MOTION: *I move that the Commission approve Coastal Development Permit No. 4-06-132 pursuant to the staff recommendation.*

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

1. Plans Conforming to Geologic Recommendations

By acceptance of this permit, the applicant agrees to comply with the recommendations contained in the "Update Letter-Geologic/Geotechnical Engineering Study, 24803 Piuma Road, Malibu, CA," prepared by Professional Geotechnical Consultants Inc on October 23, 2006 and "Geologic/Geotechnical Engineering Study of 24803 Piuma Road, Malibu, CA," prepared by Gold Coast Geoservices, Inc. February 22, 2005. These recommendations, including recommendations concerning foundations, grading, and

drainage, shall be incorporated into all final design and construction plans, which must be reviewed and approved by the consultant prior to commencement of development.

The final plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission relative to construction, grading, and drainage. Any substantial changes in the proposed development approved by the Commission that may be required by the consultant shall require amendment(s) to the permit(s) or new Coastal Development Permit(s).

2. Drainage and Polluted Runoff Control Plans

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for the review and approval of the Executive Director, final drainage and runoff control plans, including supporting calculations. The plan shall be prepared by a licensed engineer and shall incorporate structural and non-structural Best Management Practices (BMPs) designed to control the volume, velocity and pollutant load of stormwater leaving the developed site. The plan shall be reviewed and approved by the consulting engineering geologist to ensure the plan is in conformance with geologist's recommendations. In addition to the specifications above, the plan shall be in substantial conformance with the following requirements:

- (a) Selected BMPs (or suites of BMPs) shall be designed to treat, infiltrate or filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour runoff event for volume-based BMPs, and/or the 85th percentile, 1-hour runoff event, with an appropriate safety factor (i.e., 2 or greater), for flow-based BMPs.
- (b) Runoff shall be conveyed off site in a non-erosive manner.
- (c) Energy dissipating measures shall be installed at the terminus of outflow drains.
- (d) The plan shall include provisions for maintaining the drainage system, including structural BMPs, in a functional condition throughout the life of the approved development. Such maintenance shall include the following: (1) BMPs shall be inspected, cleaned and repaired when necessary prior to the onset of the storm season, no later than September 30th each year and (2) should any of the project's surface or subsurface drainage/filtration structures or other BMPs fail or result in increased erosion, the applicant/landowner or successor-in-interest shall be responsible for any necessary repairs to the drainage/filtration system or BMPs and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the applicant shall submit a repair and restoration plan to the Executive Director to determine if an amendment or new coastal development permit is required to authorize such work.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a

Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

3. Landscaping and Erosion Control Plans

Prior to issuance of a coastal development permit, the applicant shall submit landscaping and erosion control plans, prepared by a licensed landscape architect or a qualified resource specialist, for review and approval by the Executive Director. The plans shall incorporate the criteria set forth below. All development shall conform to the approved landscaping and erosion control plans:

A) Landscaping Plan

- 1) All graded & disturbed areas on the subject site shall be planted and maintained for erosion control purposes within (60) days of receipt of the certificate of occupancy for the residence. To minimize the need for irrigation all landscaping shall consist primarily of native/drought resistant plants, as listed by the California Native Plant Society, Santa Monica Mountains Chapter, in their document entitled Recommended List of Plants for Landscaping in the Santa Monica Mountains, dated February 5, 1996. All native plant species shall be of local genetic stock. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be employed or allowed to naturalize or persist on the site. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized or maintained within the property.
- 2) All cut and fill slopes shall be stabilized with planting at the completion of final grading. Planting shall be primarily of native plant species indigenous to the Santa Monica Mountains using accepted planting procedures, consistent with fire safety requirements. All native plant species shall be of local genetic stock. Such planting shall be adequate to provide 90 percent coverage within two (2) years, and this requirement shall apply to all disturbed soils;
- 3) Plantings will be maintained in good growing condition throughout the life of the project and, whenever necessary, shall be replaced with new plant materials to ensure continued compliance with applicable landscape requirements;
- 4) Vegetation within 30 feet of the proposed house may be removed to mineral earth, vegetation within a 200-foot radius of the main structure may be selectively thinned in order to reduce fire hazard. However, such thinning shall only occur in accordance with an approved long-term fuel modification plan submitted pursuant to this special condition. The fuel modification plan shall include details regarding the types, sizes and location of plant materials to be removed, and how often thinning is to occur. In addition, the applicant shall submit evidence that the fuel modification plan has been reviewed and approved by the Forestry Department of Los Angeles County. Irrigated lawn, turf and ground cover

planted within the thirty foot radius of the proposed house shall be selected from the most drought tolerant species or subspecies, or varieties suited to the Mediterranean climate of the Santa Monica Mountains.

- 5) Rodenticides containing any anticoagulant compounds (including, but not limited to, Warfarin, Brodifacoum, Bromadiolone or Diphacinone) shall not be used.
- 6) Fencing of the entire property is prohibited. Fencing shall extend no further than Zone A of the final fuel modification plan approved by the Los Angeles County Fire Department pursuant to subsection (5) above. The fencing type and location shall be illustrated on the landscape plan. Fencing shall also be subject to the color requirements outlined in Special Condition Five (5) below.
- 7) No permanent irrigation is permitted within the protected zone (defined as a five foot radius outside the dripline, or 15 feet from the trunk, whichever is greater) of any oak tree on or adjacent to the project site, and landscaping within the oak tree protected zones shall be limited to native oak tree understory plant species.

The Permittee shall undertake development in accordance with the final approved plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is required.

B) Interim Erosion Control Plan

- 1) The plan shall delineate the areas to be disturbed by grading or construction activities and shall include any temporary access roads, staging areas and stockpile areas. The natural areas on the site shall be clearly delineated on the project site with fencing or survey flags.
- 2) The plan shall specify that grading shall take place only during the dry season (April 1 – October 31). This period may be extended for a limited period of time if the situation warrants such a limited extension, if approved by the Executive Director. The applicant shall install or construct temporary sediment basins (including debris basins, desilting basins, or silt traps), temporary drains and swales, sand bag barriers, silt fencing, and shall stabilize any stockpiled fill with geofabric covers or other appropriate cover, install geotextiles or mats on all cut or fill slopes, and close and stabilize open trenches as soon as possible. These erosion control measures shall be required on the project site prior to or concurrent with the initial grading operations and maintained throughout the development process to minimize erosion and sediment from runoff waters during construction. All sediment should be retained on-site, unless removed to an appropriate, approved dumping location either outside of the coastal zone or within the coastal zone to a site permitted to receive fill.

- 3) The plan shall also include temporary erosion control measures should grading or site preparation cease for a period of more than 30 days, including but not limited to: stabilization of all stockpiled fill, access roads, disturbed soils and cut and fill slopes with geotextiles and/or mats, sand bag barriers, silt fencing; temporary drains and swales and sediment basins. The plans shall also specify that all disturbed areas shall be seeded with native grass species and include the technical specifications for seeding the disturbed areas. These temporary erosion control measures shall be monitored and maintained until grading or construction operations resume.

C) Monitoring.

- (1) Five years from the date of the receipt of the Certificate of Occupancy for the residence the applicant shall submit for the review and approval of the Executive Director, a landscape monitoring report, prepared by a licensed Landscape Architect or qualified Resource Specialist, that certifies whether the on-site landscaping is in conformance with the landscape plan approved pursuant to this Special Condition. The monitoring report shall include photographic documentation of plant species and plant coverage.
- (2) If the landscape monitoring report indicates the landscaping is not in conformance with or has failed to meet the performance standards specified in the landscaping plan approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental landscape plan for the review and approval of the Executive Director. The revised landscaping plan must be prepared by a licensed Landscape Architect or a qualified Resource Specialist and shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

4. Assumption of Risk, Waiver of Liability and Indemnity

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from wildfire and erosion; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards

5. Structural Appearance

Prior to the issuance of the coastal development permit, the applicant shall submit for the review and approval of the Executive Director, a color palette and material

specifications for the outer surface of all structures authorized by the approval of Coastal Development Permit No. 4-06-132. The palette samples shall be presented in a format not to exceed 8½" x 11" x ½" in size. The palette shall include the colors proposed for the roofs, trims, exterior surfaces, driveways, retaining walls, and other structures authorized by this permit. Acceptable colors shall be limited to colors compatible with the surrounding environment (earth tones) including shades of green, brown and gray with no white or light shades and no bright tones. All windows shall be comprised of non-glare glass.

The approved structures shall be colored and constructed with only the colors and window materials authorized pursuant to this special condition. Alternative colors or materials for future repainting or resurfacing or new windows may only be applied to the structures authorized by Coastal Development Permit No. 4-06-132 if such changes are specifically authorized by the Executive Director as complying with this special condition.

6. Lighting Restriction

- A. The only outdoor night lighting allowed on the subject parcel is limited to the following:
1. The minimum necessary to light walkways used for entry and exit to the structures, including parking areas on the site. This lighting shall be limited to fixtures that do not exceed two feet in height above finished grade, are directed downward and generate the same or less lumens equivalent to those generated by a 60 watt incandescent bulb, unless a greater number of lumens is authorized by the Executive Director.
 2. Security lighting attached to the residence and garage shall be controlled by motion detectors and is limited to same or less lumens equivalent to those generated by a 60 watt incandescent bulb.
 3. The minimum necessary to light the entry area to the driveway with the same or less lumens equivalent to those generated by a 60 watt incandescent bulb.
- B. No lighting around the perimeter of the site and no lighting for aesthetic purposes is allowed.

7. Removal of Excess Excavated Material

Prior to the issuance of the Coastal Development Permit, the applicant shall provide evidence to the Executive Director of the location of the disposal site for all excess excavated material from the site. If the disposal site is located in the Coastal Zone, the disposal site must have a valid coastal development permit for the disposal of fill

material. If the disposal site does not have a coastal permit, such a permit will be required prior to the disposal of material.

8. Removal of Natural Vegetation

Removal of natural vegetation for the purpose of fuel modification within the 50 foot zone surrounding the proposed structure(s) shall not commence until the local government has issued a building or grading permit for the development approved pursuant to this permit. Vegetation thinning within the 50-200 foot fuel modification zone shall not occur until commencement of construction of the structure(s) approved pursuant to this permit

9. Habitat Impact Mitigation

Prior to the issuance of the coastal development permit, the applicant shall submit, for the review and approval of the Executive Director, a map delineating all areas of chaparral or oak woodland habitat (ESHA) that will be disturbed by the proposed development, including fuel modification and brush clearance requirements on the project site and adjacent property. The chaparral ESHA areas on the site and adjacent property shall be delineated on a detailed map, to scale, illustrating the subject parcel boundaries and, if the fuel modification/brush clearance zones extend onto adjacent property, adjacent parcel boundaries. The delineation map shall indicate the total acreage for all chaparral ESHA, both on and offsite that will be impacted by the proposed development, including the fuel modification/brush clearance areas. A 200-foot clearance zone from the proposed structures shall be used to determine the extent of off-site brush clearance for fire protection purposes. The delineation shall be prepared by a qualified resource specialist or biologist familiar with the ecology of the Santa Monica Mountains.

Mitigation shall be provided for impacts to the chaparral and/or oak woodland ESHA from the proposed development and fuel modification/brush clearance requirements by one of the three following habitat mitigation methods:

A. Habitat Restoration

1) Habitat Restoration Plan

Prior to the issuance of the coastal development permit, the applicant shall submit a habitat restoration plan, for the review and approval of the Executive Director, for an area of degraded chaparral habitat equivalent to the area of chaparral ESHA impacted by the proposed development and fuel modification/brush clearance area. The habitat restoration area may either be onsite or offsite within the coastal zone either in the City of Malibu or elsewhere in the Santa Monica Mountains. The habitat restoration area shall be delineated on a detailed site plan, to scale, that illustrates the parcel boundaries and topographic contours of the site. The habitat restoration plan shall be prepared by a qualified resource specialist or biologist familiar with the ecology of the Santa Monica Mountains and

shall be designed to restore the area in question for habitat function, species diversity and vegetation cover. The restoration plan shall include a statement of goals and performance standards, revegetation and restoration methodology, and maintenance and monitoring provisions. If the restoration site is offsite, the applicant shall submit written evidence to the Executive Director that the property owner has irrevocably agreed to allow the restoration work, maintenance and monitoring required by this condition and not to disturb any native vegetation in the restoration area.

The applicant shall submit, on an annual basis for five years, a written report, for the review and approval of the Executive Director, prepared by a qualified resource specialist, evaluating compliance with the performance standards outlined in the restoration plan and describing the revegetation, maintenance and monitoring that was conducted during the prior year. The annual report shall include recommendations for mid-course corrective measures. At the end of the five-year period, a final detailed report shall be submitted for the review and approval of the Executive Director. If this report indicates that the restoration project has been, in part or in whole, unsuccessful, based on the approved goals and performance standards, the applicant shall submit a revised or supplemental restoration plan with maintenance and monitoring provisions, for the review and approval of the Executive Director, to compensate for those portions of the original restoration plan that were not successful. Should supplemental restoration be required, the applicant shall submit, on an annual basis for five years, a written report, for the review and approval of the Executive Director, prepared by a qualified resource specialist, evaluating the supplemental restoration areas. At the end of the five-year period, a final report shall be submitted evaluating whether the supplemental restoration plan has achieved compliance with the goals and performance standards for the restoration area. If the goals and performance standards are not met within 10 years, the applicant shall submit an application for an amendment to the coastal development permit for an alternative mitigation program and shall implement whatever alternative mitigation program the Commission approves, as approved.

The habitat restoration work approved in the restoration plan shall be carried out prior to occupancy of the residence.

2) Open Space Deed Restriction

No development, as defined in section 30106 of the Coastal Act, shall occur in the habitat restoration area, as shown on the habitat restoration site plan required pursuant to (A)(1) above.

Prior to the issuance of the coastal development permit, the applicant shall submit evidence that the applicant has executed and recorded a deed restriction (if the applicant is not the owner, then the applicant shall submit evidence that the owner has executed and recorded the deed restriction), in a form and content acceptable

to the Executive Director, reflecting the above restriction on development and designating the habitat restoration area as open space. The deed restriction shall include a graphic depiction and narrative legal descriptions of both the parcel on which the restoration area lies and the open space area/habitat restoration area. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

3) Performance Bond

Prior to the issuance of the permit, the applicant shall post performance bonds to guarantee implementation of the restoration plan as follows: a) one equal to the value of the labor and materials; and b) one equal to the value of the maintenance and monitoring for a period of 5 years. Each performance bond shall be released upon satisfactory completion of items (a) and (b) above. If the applicant fails to either restore or maintain and monitor according to the approved plans, the Coastal Commission may collect the security and complete the work on the property.

B. Habitat Conservation

Prior to the issuance of the coastal development permit, the applicant shall (or, if the applicant is not the owner of the habitat conservation site, then the owner of the habitat conservation site shall) execute and record an open space deed restriction in a form and content acceptable to the Executive Director, over the entirety of a legal parcel or parcels containing chaparral ESHA. The chaparral ESHA located on the mitigation parcel or parcels must be of equal or greater area than the ESHA area impacted by the proposed development, including the fuel modification/brush clearance areas. No development, as defined in section 30106 of the Coastal Act, shall occur on the mitigation parcel(s) and the parcel(s) shall be preserved as permanent open space. The deed restriction shall include a graphic depiction and narrative legal descriptions of the parcel or parcels. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction.

Prior to occupancy of the residence, the applicant shall submit evidence, for the review and approval of the Executive Director, that the recorded documents have been reflected in the Los Angeles County Tax Assessor Records.

If the mitigation parcel(s) is/are larger in size than the impacted habitat area, the excess acreage may be used to provide habitat impact mitigation for other development projects that impact like ESHA.

C. Habitat Impact Mitigation Fund

Prior to the issuance of the coastal development permit, the applicant shall submit evidence, for the review and approval of the Executive Director, that compensatory mitigation, in the form of an in-lieu fee, has been paid to the Mountains Recreation and Conservation Authority to mitigate adverse impacts to chaparral and/or oak woodland habitat ESHA. The fee shall be calculated as follows:

1. Development Area, Irrigated Fuel Modification Zones, Off-site Brush Clearance

The in-lieu fee for these areas shall be \$12,000 per acre within the development area and any required irrigated fuel modification zones. The total acreage shall be based on the map delineating these areas required by this condition.

2. Non-irrigated Fuel Modification Zones

The in-lieu fee for non-irrigated fuel modification areas shall be \$3,000 per acre. The total acreage shall be based on the map delineating these areas required by this condition.

Prior to the payment of any in-lieu fee to the Mountains Recreation and Conservation Authority, the applicant shall submit, for the review and approval of the Executive Director, the calculation of the in-lieu fee required to mitigate adverse impacts to chaparral habitat ESHA, in accordance with this condition. After review and approval of the fee calculation, the fee shall be paid to the Mountains Recreation and Conservation Authority's Coastal Habitat Impact Mitigation Fund for the acquisition, or permanent preservation of chaparral and/or oak woodland habitat in the Santa Monica Mountains coastal zone.

10. Future Development Restriction

This permit is only for the development described in Coastal Development Permit No. 4-06-132. Pursuant to Title 14 California Code of Regulations Section 13250(b)(6) the exemptions otherwise provided in Public Resources Code Section 30610(a) shall not apply to any future development on any portion of the parcel. Accordingly, any future improvements to any portion of the property, including but not limited to the residence, garage, water tank, septic system, landscaping, and removal of vegetation or grading other than as provided for in the approved fuel modification/landscape plan prepared pursuant to Special Condition Three (3), shall require an amendment to Coastal Development Permit No. 4-06-132 from the Commission or shall require an additional coastal development permit from the Commission or from the applicable certified local government.

11. Deed Restriction

Prior to issuance of the coastal development permit, the applicant shall submit to the Executive Director for review and approval documentation demonstrating that the applicant has executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

12. Open Space Conservation Easement

No development, as defined in Section 30106 of the Coastal Act, grazing, or agricultural activities shall occur outside of the approved development area, within the portion of the property identified as the “open space conservation easement area”, as shown in **Exhibit 5** except for:

Fuel modification required by the Los Angeles County Fire Department undertaken in accordance with the final approved fuel modification plan required by Special Condition Three (3) or other fuel modification plans required and approved by the Commission pursuant to a different CDP(s) issued by the Commission; drainage and polluted runoff control activities pursuant to Special Condition Three (3) and Special Condition Two (2), construction and maintenance of public hiking trails, if approved by the Commission as an amendment to this coastal development permit or a new coastal development permit; and construction and maintenance of roads, trails, and utilities pursuant to existing easements, if approved by the Commission in a coastal development permit.

Prior to issuance of the Coastal Development Permit, the applicant shall execute and record a document in a form and content acceptable to the Executive Director, granting to the Mountains Recreation and Conservation Authority (“MRCA”) on behalf of the people of the State of California an open space conservation easement over the “open space conservation easement area” described above, for the purpose of habitat protection. The recorded easement document shall include a formal legal description of the entire property; and a metes and bounds legal description and graphic depiction, prepared by a licensed surveyor, of the open space conservation easement area, as generally shown on **Exhibit 5**. The recorded document shall reflect that no development shall occur within the open space conservation easement area except as otherwise set forth in this permit condition. The grant of easement shall be recorded free of prior liens and encumbrances which the Executive Director determines may affect the interest

being conveyed, and shall run with the land in favor of the MRCA on behalf of the people of the State of California, binding all successors and assigns.

13. Revised Plans

A. ***Prior to the issuance of the Coastal Development Permit***, the applicant shall submit, for the review and approval of the Executive Director, two sets of revised site plans and elevations, as well as grading and fuel modification plans prepared by a registered engineer, that incorporate the following changes:

- 1) Eliminate all development located above elevation 1,722 feet above sea level, as shown on the proposed project plan, including the entire fifth story of the residence (including the garage level as a story).
- 2) The proposed residence and garage shall not exceed 35 feet in height from existing grade at any given location.
- 3) The overall change in elevation from the lowest point of the 1st floor garage to the top of the roof line shall not exceed 49 feet.
- 4) The redesigned residence shall not encroach upon the protected zone (the area five feet from the edge of dripline, or fifteen feet from any trunk, whichever is greater) of any oak trees onsite.
- 5) The submitted plans may include development of the 2nd story “mezzanine” as shown in the plans submitted April 20, 2007 into livable residential area.

B. ***Prior to issuance of the Coastal Development Permit***, the applicant shall submit, for the review and approval of the Executive Director, the following approvals for the revised building plans:

- a) Los Angeles County Fire Department preliminary approval of access, driveway, and turnaround areas;
- b) Los Angeles County Planning Department “Approval in Concept”; and
- c) Los Angeles County Fire Department approval of Final Fuel Modifications Plans.

C. The Permittee shall undertake development in accordance with the final approved site plan(s) and elevations, grading plan(s), and fuel modification plan(s). Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Coastal Commission approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is required.

14. Oak Tree Protection and Monitoring

To ensure that on-site oak trees are protected during grading and construction activities, protective barrier fencing shall be installed around the drip line of all oak trees within 100 feet of the proposed development during construction operations. The permittee shall also follow the oak tree preservation recommendations that are enumerated in the "Revised Oak Tree Report" by L. Newman Design Group Inc. dated March 15, 2005.

Prior to commencement of construction, the permittee shall retain the services of a biological consultant or arborist with appropriate qualifications acceptable to the Executive Director. The biological consultant or arborist shall be present on site during grading and construction activities. The biological consultant or arborist shall immediately notify the Executive Director if unpermitted activities occur or if oak trees are removed or impacted beyond the scope of the work allowed by Coastal Development Permit 4-06-132. This biological consultant or arborist shall have the authority to require the applicant to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise.

The biological consultant or arborist shall monitor all oak trees with canopies within 100 feet of the proposed septic system (identified in the above referenced "Revised Oak Tree Report" by L. Newman Design Group Inc.) for a period of ten (10) years minimum. An annual monitoring report shall be submitted for the review and approval of the Executive Director for each of the ten years. Should any of these trees be lost or suffer worsened health or vigor as a result of this project, the permittee shall submit, for the review and approval of the Executive Director, an on-site oak tree replacement planting program, prepared by a qualified biologist, arborist, or other qualified resource specialist, which specifies replacement tree locations, planting specifications, and a monitoring program to ensure that the replacement planting program is successful. Replacement trees shall be provided at a rate of 10:1.

15. Oak Tree Mitigation

Prior to issuance of the coastal development permit, the applicant shall submit, for the review and approval of the Executive Director, an oak tree replacement planting program, prepared by a qualified biologist, arborist, or other resource specialist, which specifies replacement tree locations, tree or seedling planting specifications, performance standards that will demonstrate the success of the replacement planting program, and a ten-year monitoring program to ensure that the replacement planting program is successful. At least twenty replacement seedlings, less than one year old, grown from acorns collected in the area, shall be planted on the project site, as mitigation for development impacts to Oak Trees No. 1 and 3, as identified by the "Revised Oak Tree Report" by L. Newman Design Group Inc. dated March 15, 2005. An annual monitoring report on the oak tree replacement area shall be submitted for the review and approval of the Executive Director for each of the 10 years. If this report indicates that the restoration project has in part, or in whole, been unsuccessful, based on the approved performance standards, the applicants shall be required to submit a revised or supplemental restoration program to compensate for those portions of the

original plan that were not successful. The revised, or supplemental, restoration program shall be processed as an amendment to this Coastal Development Permit.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description and Background

The applicant proposes to construct a five story, 35 foot high, 3,997 sq. ft. single family residence including garage. The residence is designed to be stepped into the hillside. The first story is a 545 sq. ft. garage, the second story a 625 sq. ft. mezzanine and the third through fifth stories livable residential space that are 1,184, 958 sq. ft., and 685 sq. ft. in size respectively. While the proposed residence is at no point above 35 feet in height above existing grade, the change in elevation from the lowest point of the 1st floor garage (1,673 feet above sea level) and top of the highest roofline (1,732 feet above sea level) is approximately 59 feet. Portions of the first four floors of the house are subterranean as shown in Exhibits 2 and 3. The development also includes installation of a septic tank and system, water well, and 10,000 gallon water tank (10 feet in height; top elevation 1,709 feet above sea level). The applicant is also proposing improvements to an existing 14-foot wide access road, including placement of gravel road material and installation of three retaining walls. Staff notes that the existing access road appears in aerial photos of the site from 1977 which indicates that its construction pre-dates the effective date of the Coastal Act.

The proposed project site is located on an 4.86 acre property (APN 4456-037-051) located on the north side of Piuma Road within the Santa Monica Mountains in Los Angeles County. Piuma Road in the vicinity of the subject lot follows the east-west trending Piuma Ridgeline. The subject lot extends from the ridgeline down the north facing slope. Slopes on both the north and south side of the Piuma ridgeline, a significant ridgeline as designated in the 1986 Malibu/Santa Monica Mountains Land Use Plan, are considered integral to the Malibu Canyon viewshed area. Both Malibu Canyon Road and Piuma Road are identified in the 1986 LUP as first priority Scenic Highways. The Piuma ridgeline is also visible from Malibu Canyon State Park and surrounding areas corresponding generally to Scenic Element #9 identified in the 1986 LUP. Southbound travelers on Malibu Canyon Road get a full view of the north slope of the Piuma ridgeline halfway between Mulholland Highway and Piuma Road. Recreational users of the Backbone trail and the Cold Creek basin will also get a full view of the north slope of the ridgeline. With a few exceptions, the north slope of Piuma ridgeline is undeveloped above an elevation of 900 feet. The subject lot is surrounded to the south, southeast, and west by large lots predominantly covered in chaparral and oak woodland habitats. This area is developed sparsely with single family residences. The areas to the north and east of the lot are characterized by undeveloped natural terrain vegetated in chaparral and oak woodland habitat. The subject lot is located in the Malibu/Cold Creek Resource Management Area and is approximately 1,500 feet southwest of Dark Canyon Creek, a tributary to Cold Creek.

The majority of the subject lot is undeveloped and vegetated with dense interspersed native oak woodland and chaparral habitat. Several large oak trees are located on the property. An approximately 14-foot wide cleared dirt road extends across the property from the southwest to northeast corners of the lots. According to aerial photos, this road pre-dates the effective date of the Coastal Act in 1977. A strip of land on the property directly adjacent to Piuma Road has also been thinned and cleared.

The proposed residence and attached garage would be located along Piuma Road and would extend downslope to the dirt access road north of Piuma Road in an area partially vegetated by native oak understory and chaparral vegetation and partially vegetated with disturbed non-native grassland. The residence and garage would not encroach on the protected zone (extending to five feet from the edge of the dripline, or fifteen feet from any trunk, whichever is greater) of any oak trees onsite. Fire department access would be directly from Piuma Road in front of the house. The applicant also proposes to resurface the existing dirt access road with gravel and install three retaining walls along the road to provide vehicular access to the proposed garage and residence. The road will not be improved to the full road width or turnaround standard required by the Fire Department's standards because they have determined that access to the development from Piuma Road at the front of the residence is adequate. The existing road encroaches on the five foot protective zone and canopies of several oak trees. The proposed retaining walls would, therefore, encroach upon the canopies of two oak trees. The proposed water well and water tank would be located along the road on the western portion of the property in areas adjacent to Piuma Road that have been previously disturbed. The proposed septic system would be located on the road east of the residence. The system would not encroach on the five foot protected zone of any oak trees. However several trees would be located within 100 feet of the system.

The applicant originally submitted an application for development of a wider and larger house on the property (original proposal included 5126.5 sq. ft., including garage). The original application also included expansion of the existing dirt access road from 14 feet wide to 20 feet wide and paving of the road. This proposal would have required the removal of two oak trees and encroachment onto the protected zones of six oak trees. In response to staff concerns regarding impacts to oak woodland, chaparral, and visual resources, the applicant revised the plan for the project to improve the existing road without expanding the existing footprint. The plan was also revised to significantly reduce the width of the proposed residence so that the proposed residence and garage would not encroach onto the protected zones of any oak trees.

B. Geologic and Wildfire Hazard

The proposed development is located in the Santa Monica Mountains, an area that is generally considered to be subject to an unusually high amount of natural hazards. Geologic hazards common to the Santa Monica Mountains area include landslides, erosion, and flooding. In addition, fire is an inherent threat to the indigenous chaparral community of the coastal mountains. Wildfires often denude hillsides in the Santa

Monica Mountains of all existing vegetation, thereby contributing to an increased potential for erosion and landslides on property.

Section **30253** of the Coastal Act states in pertinent part that new development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.***
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.***

Geology

Section 30253 of the Coastal Act mandates that new development be sited and designed to provide geologic stability and structural integrity, and minimize risks to life and property in areas of high geologic, flood, and fire hazard. The applicant has submitted the following reports for the proposed development: "Update Letter-Geologic/Geotechnical Engineering Study, 24803 Piuma Road, Malibu, CA," prepared by Professional Geotechnical Consultants Inc on October 23, 2006 and "Geologic/Geotechnical Engineering Study of 24803 Piuma Road, Malibu, CA," prepared by Gold Coast Geoservices, Inc. February 22, 2005. These reports address the geologic conditions on the site, including drainage, subsurface conditions, groundwater, landslides, faulting, and seismicity.

The subject property is located on a moderately sloped north facing side of a major ridgeline in the Santa Monica Mountains. The site is underlain by a thin layer of surface soils and sedimentary bedrock. According to the geologic consultants, no landslides, daylighted bedding planes, or adverse geologic structures are present onsite. The geologic consultants have found the geology of the proposed project site to be suitable for the construction of a single-family residence, septic system, and water well.

The geologic and geotechnical reports for the residence, septic system, and water well contain several recommendations to be incorporated into project construction, design, drainage, foundations, and sewage disposal to ensure the stability and geologic safety for the proposed project site and adjacent properties. To ensure that the recommendations of the consultant have been incorporated into all proposed development, the Commission, as specified in **Special Condition One (1)**, requires the applicant to comply with and incorporate the recommendations contained in the submitted geologic reports into all final design and construction, and to obtain the approval of the geotechnical consultants prior to commencement of construction.

The Commission finds that controlling and diverting run-off in a non-erosive manner from the proposed structures, impervious surfaces, and building pad will also add to the geologic stability of the project site. Therefore, in order to minimize erosion and ensure stability of the project site, and to ensure that adequate drainage and erosion control is included in the proposed development, the Commission requires the applicants to submit drainage and erosion control plans certified by the geotechnical engineer, as specified in **Special Conditions Two (2) and Three (3)**.

Further, the Commission finds that landscaping of graded and disturbed areas on the subject site will serve to stabilize disturbed soils, reduce erosion and thus enhance and maintain the geologic stability of the site. Therefore, **Special Condition Three (3)** requires the applicant to submit landscaping plans certified by the consulting geotechnical engineer as in conformance with their recommendations for landscaping of the project site. **Special Condition Three (3)** also requires the applicant to utilize and maintain native and noninvasive plant species compatible with the surrounding area for landscaping the project site.

Invasive and non-native plant species are generally characterized as having a shallow root structure in comparison with their high surface/foilage weight. The Commission notes that non-native and invasive plant species with high surface/foilage weight and shallow root structures do not serve to stabilize slopes and that such vegetation results in potential adverse effects to the stability of the project site. Native species, alternatively, tend to have a deeper root structure than non-native and invasive species, and once established aid in preventing erosion. Therefore, the Commission finds that in order to ensure site stability, all slopes and disturbed and graded areas of the site shall be landscaped with appropriate native plant species, as specified in **Special Condition Three (3)**.

In addition, to ensure that excess excavated material is moved off site so as not to contribute to unnecessary landform alteration, the Commission finds it necessary to require the applicant to dispose of the material at an appropriate disposal site or to a site that has been approved to accept material, as specified in **Special Condition Seven (7)**.

Furthermore, in order to ensure that vegetation clearance for fire protection purposes does not occur prior to commencement of grading or construction of the proposed structures, the Commission finds that it is necessary to impose a restriction on the removal of natural vegetation as specified in **Special Condition Eight (8)**. This restriction specifies that natural vegetation shall not be removed until grading or building permits have been secured and construction of the permitted structures has commenced. The limitation imposed by **Special Condition Eight (8)** avoids loss of natural vegetative coverage resulting in unnecessary erosion in the absence of adequately constructed drainage and run-off control devices and implementation of the landscape and interim erosion control plans.

Special Condition Eleven (11) requires the applicant to record a deed restriction that imposes the terms and conditions of this permit as a restriction on the use and enjoyment of the property and provides any prospective purchaser of the site with recorded notice that the restriction are imposed on the subject property.

The Commission finds that the proposed project, as conditioned, will minimize potential geologic hazards on the project site and adjacent properties, as required by §30253 of the Coastal Act.

Wildfire

The proposed project is located in the Santa Monica Mountains, an area subject to an extraordinary potential for damage or destruction from wild fire. Typical vegetation in the Santa Monica Mountains consists mostly of coastal sage scrub and chaparral. Many plant species common to these communities produce and store terpenes, which are highly flammable substances (Mooney in Barbour, *Terrestrial Vegetation of California*, 1988). Chaparral and sage scrub communities have evolved in concert with, and continue to produce the potential for, frequent wild fires. The typical warm, dry summer conditions of the Mediterranean climate combine with the natural characteristics of the native vegetation to pose a risk of wild fire damage to development that cannot be completely avoided or mitigated.

Due to the fact that the proposed project is located in an area subject to an extraordinary potential for damage or destruction from wild fire, the Commission can only approve the project if the applicant assumes the liability from these associated risks. Through **Special Condition Four (4)**, assumption of risk, the applicants acknowledge the nature of the fire hazard which exists on the site and which may affect the safety of the proposed development. Moreover, through acceptance of Special Condition Four (4), the applicants also agree to indemnify the Commission, its officers, agents and employees against any and all expenses or liability arising out of the acquisition, design, construction, operation, maintenance, existence, or failure of the permitted project.

For the reasons set forth above, the Commission finds that, as conditioned, the proposed project is consistent with §30253 of the Coastal Act.

C. Environmentally Sensitive Habitat Areas

Section **30230** of the Coastal Act states that:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain

healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 states:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30240 states:

- (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.**
- (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.**

Section 30107.5 of the Coastal Act, defines an environmentally sensitive area as:

"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

In addition, the Malibu/Santa Monica Mountains LUP provides policy guidance regarding the protection of environmentally sensitive habitats. The Coastal Commission, as guidance in the review of development proposals in the Santa Monica Mountains, has applied these policies.

P57 Designate the following areas as Environmentally Sensitive Habitat Areas (ESHAs): (a) those shown on the Sensitive Environmental Resources Map (Figure 6), and (b) any undesignated areas which meet the criteria and which are identified through the biotic review process or other means,

including those oak woodlands and other areas identified by the Department of Fish and Game as being appropriate for ESHA designation.

P63 Uses shall be permitted in ESHAs, DSRs, Significant Watersheds, and Significant Oak Woodlands, and Wildlife Corridors in accordance with Table I and all other policies of this LCP.

Environmentally sensitive habitat areas (ESHAs) shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Residential use shall not be considered a resource dependent use.

P69 Development in areas adjacent to environmentally sensitive habitat areas (ESHAs) shall be subject to the review of the Environmental Review Board, shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

P71 The clustering of buildings shall be required in Significant Watersheds to minimize impacts unless it can be demonstrated that other environmental mitigation methods would be effective.

P72 Open space or conservation easements or equivalent measures may be required in order to protect undisturbed watershed cover and riparian areas located on parcels proposed for development. Where new development is proposed adjacent to Environmentally Sensitive Habitat Areas, open space or conservation easements shall be required in order to protect resources within the ESHA.

P73 The use of insecticides, herbicides, or any toxic chemical substance (with the exception of non-regulated home pesticides considered necessary for maintenance of households) shall be prohibited in designated environmentally sensitive habitats, except in an emergency which threatens the habitat itself.

P74 New development shall be located as close as feasible to existing roadways, services, and existing development to minimize the effects on sensitive environmental resources.

P80 The following setback requirements shall be applied to new septic systems: (a) at least 50 feet from the outer edge of the existing riparian or oak canopy for leachfields, and (b) at least 100 feet from the outer edge of the existing riparian or oak canopy for seepage pits. A larger setback shall be required if necessary to prevent lateral seepage from the disposal beds into stream waters.

P81 To control runoff into coastal waters, wetlands and riparian areas, as required by Section 3023I of the Coastal Act, the maximum rate of storm water runoff into such areas from new development should not exceed the peak level that existed prior to development.

P82 Grading shall be minimized for all new development to ensure the potential negative effects of runoff and erosion on these resources are minimized.

P84 In disturbed areas, landscape plans shall balance long-term stability and minimization of fuel load. For instance, a combination of taller, deep-rooted plants and low-growing ground covers to reduce heat output may be used. Within ESHAs and Significant Watersheds, native plant species shall be used, consistent with fire safety requirements.

Section 30231 of the Coastal Act requires that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through,

among other means, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas must be protected against disruption of habitat values. Pursuant to Section 30107.5, in order to determine whether an area constitutes an ESHA, and is therefore subject to the protections of Section 30240, the Commission must ask four questions:

- 1) What is the area of analysis?
- 2) Is there a rare habitat or species in the subject area?
- 3) Is there an especially valuable habitat or species in the area, based on:
 - a) Does any habitat or species present have a special nature?
 - b) Does any habitat or species present have a special role in the ecosystem?
- 4) Is any habitat or species that has met test 2 or 3 (i.e., that is rare or especially valuable) easily disturbed or degraded by human activities and developments?

The Coastal Commission has found that the Mediterranean Ecosystem in the Santa Monica Mountains is itself rare, and valuable because of its relatively pristine character, physical complexity, and resultant biological diversity. Therefore, habitat areas that provide important roles in that ecosystem are especially valuable and meet the second criterion for the ESHA designation. In the Santa Monica Mountains, coastal sage scrub and chaparral have many important roles in the ecosystem, including the provision of critical linkages between riparian corridors, the provision of essential habitat for species that require several habitat types during the course of their life histories, the provision of essential habitat for local endemics, the support of rare species, and the reduction of erosion, thereby protecting the water quality of coastal streams. For these and other reasons discussed in **Exhibit 6**, which is incorporated herein, the Commission finds that large contiguous, relatively pristine stands of coastal sage scrub and chaparral in the Santa Monica Mountains meet the definition of ESHA. This is consistent with the Commission's past findings on the Malibu LCP¹.

Woodlands that are native to the Santa Monica Mountains, such as oak woodlands, are also important coastal resources. Native trees prevent the erosion of hillsides and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife species, contribute nutrients to watersheds, and are important scenic elements in the landscape. In the Santa Monica Mountains, coast live oak woodland occurs mostly on north slopes, shaded ravines and canyon bottoms. Besides the coast live oak, this plant community includes hollyleaf cherry, California bay laurel, coffeeberry, and poison oak. Coast live oak woodland is more tolerant of salt-laden fog than other oaks and is generally found nearer the coast². Coast live oak also occurs as a riparian corridor species within the Santa Monica Mountains. Valley oaks are endemic to California and

¹ Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.

² NPS 2000. *op. cit.*

reach their southern most extent in the Santa Monica Mountains. Valley oaks were once widely distributed throughout California's perennial grasslands in central and coastal valleys. Individuals of this species may survive 400-600 years. Over the past 150 years, valley oak savanna habitat has been drastically reduced and altered due to agricultural and residential development. The understory is now dominated by annual grasses and recruitment of seedlings is generally poor. This is a very threatened habitat. The important ecosystem functions of oak woodlands and savanna are widely recognized³. These habitats support a high diversity of birds⁴, and provide refuge for many species of sensitive bats⁵. Typical wildlife in this habitat includes acorn woodpeckers, scrub jays, plain titmice, northern flickers, cooper's hawks, western screech owls, mule deer, gray foxes, ground squirrels, jackrabbits and several species of sensitive bats. Therefore, because of their important ecosystem functions and vulnerability to development, the Commission has consistently found in past permit decisions that oak woodlands and savanna within the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

In past permit actions in the Santa Monica Mountains, the Commission has found that native oak trees are an important coastal resource, even if the overall woodland is disturbed or fragmented and would not be considered ESHA. Native trees prevent the erosion of hillsides and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife. Native trees that are not part of a larger, intact habitat may nonetheless provide nesting or roosting habitat for raptors and other birds that are rare, threatened, endangered, fully protected, or species of special concern. Furthermore, individual oak trees provide some habitat for a wide variety of wildlife species and are considered to be an important part of the character and scenic quality of the area.

Oaks are easily damaged and are very sensitive to disturbances that occur to the tree or the surrounding environment. Their root system is extensive, but surprisingly shallow, radiating out as much as 50 feet beyond the spread of the tree leaves, or canopy. The ground area at the outside edge of the canopy, referred to as the dripline, is especially important: the tree obtains most of its surface water and nutrients here, as well as

³ Block, W.M., M.L. Morrison, and J. Verner. 1990. Wildlife and oak-woodland interdependency. *Fremontia* 18(3):72-76. Pavlik, B.M., P.C. Muick, S. Johnson, and M. Popper. 1991. *Oaks of California*. Cachuma Press and California Oak Foundation, Los Olivos, California. 184 pp.

⁴ Cody, M.L. 1977. Birds. Pp. 223-231 in Thrower, N.J.W., and D.E. Bradbury (eds.). *Chile-California Mediterranean scrub atlas*. US/IBP Synthesis Series 2. Dowden, Hutchinson & Ross, Stroudsburg, Pennsylvania. National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701

⁵ Miner, K.L., and D.C. Stokes. 2000. Status, conservation issues, and research needs for bats in the south coast bioregion. Paper presented at *Planning for biodiversity: bringing research and management together*, February 29, California State University, Pomona, California.

conducts an important exchange of air and other gases (Los Angeles County Regional Planning Oak Tree Ordinance). Improper watering, especially during the hot summer months when the tree is dormant and disturbance to root areas are the most common causes of tree loss.

Encroachments into the protected zone of an oak tree can result in significant adverse impacts. The article entitled "Oak Trees: Care and Maintenance" prepared by the Forestry Department of the County of Los Angeles states:

Oaks are easily damaged and very sensitive to disturbances that occur to the tree or in the surrounding environment. The root system is extensive but surprisingly shallow, radiating out as much as 50 feet beyond the spread of the tree leaves, or canopy. The ground area at the outside edge of the canopy, referred to as the dripline, is especially important: the tree obtains most of its surface water and nutrients here, as well as conducts an important exchange of air and other gases.

This publication goes on to state:

Any change in the level of soil around an oak tree can have a negative impact. The most critical area lies within 6' to 10' of the trunk: no soil should be added or scraped away. . . . Construction activities outside the protected zone can have damaging impacts on existing trees. . . . Digging of trenches in the root zone should be avoided. Roots may be cut or severely damaged, and the tree can be killed. . . . Any roots exposed during this work should be covered with wet burlap and kept moist until the soil can be replaced. The roots depend on an important exchange of both water and air through the soil within the protected zone. Any kind of activity which compacts the soil in this area blocks this exchange and can have serious long term negative effects on the trees. If paving material must be used, some recommended surfaces include brick paving with sand joints, or ground coverings such as wood chips . . .

Given the importance of oak woodlands and individual oak trees, the Commission has consistently required, through past permit actions, that new development avoid the removal of oak trees, unless there is no feasible alternative for siting or designing the structures. Further, given the sensitivity of oak trees to disturbance or encroachment of development into the root zone, the Commission has required that encroachments within the protected zone (5 feet beyond the dripline, or 15 feet from the trunk, whichever is greater) be avoided unless there is no feasible alternative for the siting of development. If encroachments cannot be avoided, then the Commission requires that encroachments be minimized to the maximum extent feasible. If encroachments extend a minimal distance within the protected zone of an oak tree, the Commission has required the affected tree to be monitored for a period of ten years, to identify if the tree has been harmed by the encroachment. If it is determined that the tree has been adversely affected, then mitigation is required. In the case of significant encroachments within the protected zones of oak trees, the Commission has determined that the affected trees are likely to suffer worsened health as a result and mitigation has been

required. The oak tree mitigation that the Commission has required is the planting of replacement trees, at a ratio of at least ten seedlings for every tree impacted. If there is suitable area on the project site, replacement trees should be provided on-site. The Commission has found, through permit actions, that replacement trees, particularly oak trees, are most successfully established when the trees are seedlings or acorns. Many factors, over the life of the restoration, can result in the death of the replacement trees. In order to ensure that adequate replacement is eventually reached, it is necessary to provide a replacement ratio of at least ten replacement trees for every tree removed or impacted to account for the mortality of some of the replacement trees.

For any specific property within the Santa Monica Mountains, it is necessary to satisfy two tests in order to assign the ESHA designation. The first question is whether there is a species or habitat in the subject area that is either rare or especially valuable. This requires that the existing habitat is properly identified, for example as coastal sage scrub or chaparral, and it generally requires that any habitat at issue be relatively pristine and that it be part of a large, contiguous block of relatively pristine native vegetation. The second test is whether the habitat or species is easily disturbed or degraded by human activities and developments.

The proposed project site is located on an 4.86 acre property (APN 4456-037-051) located on the north side of Piuma Road within the Santa Monica Mountains in Los Angeles County. The lot is surrounded to the south, southeast, and west by lots predominantly covered in chaparral and oak woodland habitats. This area is developed sparsely with single family residences. The areas to the north and east of the lot are characterized by undeveloped natural terrain vegetated in chaparral and oak woodland habitat. As such, there is a large contiguous block of relatively undisturbed native vegetation consisting of interspersed chaparral and oak woodland that encompasses the project site and surrounding area.

The subject lot is located in the Malibu/Cold Creek Resource Management Area and is approximately 1,500 feet southwest of Dark Canyon Creek, a tributary to Cold Creek. The 1986 Malibu/Santa Monica Mountains Land Use Plan designates this area as an environmentally sensitive area where development should be clustered, grading and vegetation removal minimized to the extent feasible, and septic systems located 100 feet from the canopies of any oak trees. According to the biological and oak tree reports submitted by the applicant (Nelson 2001 and 2006; L. Newman Design Group 2005 and 2006) the majority of the subject lot is undeveloped and vegetated with dense interspersed native oak woodland and chaparral habitat. Several large coastal live oak trees (*Quercus agrifolia*) are located on the property. An approximately 14-foot wide cleared dirt road extends across the property from the southwest to northeast corners of the lots. According to aerial photos, this road pre-dates the effective date of the Coastal Act in 1977. A strip of land (approximately 10 feet wide) on the property directly adjacent to Piuma Road has also been thinned and cleared prior to the effective date of the Coastal Act.

Due to the important ecosystem role of chaparral and oak woodland habitat in the Santa Monica Mountains (detailed in **Exhibit 6**), the Commission finds that the chaparral and oak woodland habitat on and surrounding the subject site meets the definition of ESHA under Section 30107.5 of the Coastal Act. The existing 10-foot wide strip of area adjacent to Piuma Road and the existing dirt road that were disturbed prior to the effective date of the Coastal Act, however, do not meet the definition of ESHA. The oak trees that are located in and around these disturbed areas, however, are important coastal resources, as described above, that require protection.

As explained above, the project site and the surrounding area constitute an environmentally sensitive habitat area (ESHA) pursuant to Section 30107.5. Section 30240 of the Coastal Act requires that “environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.” Section 30240 restricts development on the parcel to only those uses that are dependent on the resource. The applicant proposes to construct a single-family residence on the parcel, which would result in the loss of ESHA habitat area and vegetation within the building pad area, as well as within those areas where fuel modification would be required for fire protection purposes. The applicant has also proposed a septic system within 100 feet of the canopies of several coast live oak trees and installation of retaining walls under the canopies of two coast live oak trees located along the existing dirt road onsite. As single-family residences do not have to be located within ESHAs to function, the Commission does not consider these uses to be dependent on ESHA resources. Application of Section 30240, by itself, would require denial of the project, because the project would result in significant disruption of habitat values and is not a use dependent on those sensitive habitat resources. Additionally, the project includes encroachments into the protective zones of oak trees that constitute important coastal resources.

However, the Commission must also consider Section 30010, and the Supreme Court decision in *Lucas v. South Carolina Coastal Council* (1992) 505 U.S. 1003, 112 S.Ct. 2886. Section 30010 of the Coastal Act provides that the Coastal Act shall not be construed as authorizing the Commission to exercise its power to grant or deny a permit in a manner which will take private property for public use. Application of Section 30010 may overcome the presumption of denial in some instances. The subject of what government action results in a “taking” was addressed by the U.S. Supreme Court in *Lucas v. South Carolina Coastal Council*. In *Lucas*, the Court identified several factors that should be considered in determining whether a proposed government action would result in a taking. For instance, the Court held that where a permit applicant has demonstrated that he or she has a sufficient real property interest in the property to allow the proposed project, and that project denial would deprive his or her property of all economically viable use, then denial of the project by a regulatory agency might result in a taking of the property for public use unless the proposed project would constitute a nuisance under State law. Other Supreme Court precedent establishes that another factor that should be considered is the extent to which a project denial would interfere with reasonable investment-backed expectations.

The Commission interprets Section 30010, together with the *Lucas* decision, to mean that if Commission denial of the project would deprive an applicant's property of all reasonable economic use, the Commission may be required to allow some development even where a Coastal Act policy would otherwise prohibit it, unless the proposed project would constitute a nuisance under state law. In other words, Section 30240 of the Coastal Act cannot be read to deny all economically beneficial or productive use of land because Section 30240 cannot be interpreted to require the Commission to act in an unconstitutional manner.

In the subject case, the applicant purchased the property in 2006 for approximately \$230,000. The parcel was designated in the County's certified Land Use Plan in 1986 for residential use (Mountain Land). At the time the applicant purchased the parcel, the County's certified Land Use Plan (LUP) designated the site as a sensitive habitat area (Malibu Canyon/Cold Creek Management Area). This designation allows residential development on the lot up to one unit per parcel under 20 acres in size as long as all structures are clustered and grading and vegetation removal are minimized. Based on this fact, along with the presence of existing and approved residential development on nearby parcels, the applicant had reason to believe that they had purchased a parcel on which they would be able to build a residence.

The Commission finds that in this particular case, other allowable uses for the subject site, such as a recreational park or a nature preserve, are not currently feasible and would not provide the owner an economic return on the investment. The parcel is 4.86 acres and there are other, residential developments to the west, southwest, and southeast of the site. Public parkland and open space have been acquired in the vicinity, but there is no current offer to purchase the property from any public park agency. The Commission thus concludes that in this particular case there is no viable alternative use for the site other than residential development. The Commission finds, therefore, that outright denial of all residential use would interfere with reasonable investment-backed expectations and deprive the property of all reasonable economic use.

Next the Commission turns to the question of nuisance. There is no evidence that construction of a residence would create a nuisance under California law. Other houses have been constructed in similar situations in chaparral habitat in Los Angeles County, apparently without the creation of nuisances. The County's Health Department has not reported evidence of septic system failures. In addition, the County has reviewed and approved a septic system onsite, ensuring that a system is possible onsite that will not create public health problems. Furthermore, the use that is proposed is residential, rather than, for example, industrial, which might create noise or odors or otherwise create a public nuisance. In conclusion, the Commission finds that a residential project can be allowed to permit the applicant a reasonable economic use of their property consistent with Section 30010 of the Coastal Act.

While the applicant is entitled under Section 30010 to an assurance that the Commission will not act in such a way as to take their property, this section does not

authorize the Commission to avoid application of the policies of the Coastal Act, including Section 30240, altogether. Instead, the Commission is only directed to avoid construing these policies in a way that would take property. Aside from this instruction, the Commission is still otherwise directed to enforce the requirements of the Act. Therefore, in this situation, the Commission must still comply with Section 30240 by avoiding impacts that would disrupt and/or degrade environmentally sensitive habitat, to the extent this can be done without a taking of the property.

As discussed above, residential development will be approved within ESHA on the project site in order to provide an economically viable use. Alternatives and mitigation measures have been considered in order to identify the overall project that can protect ESHA against any significant disruption of habitat values, to the maximum extent feasible.

As the entire project site contains habitat determined to constitute ESHA (with the exception of a small area adjacent to Piuma Road and the existing dirt access road across the site), the construction of a single family residence anywhere on the property will result in the loss of ESHA within the areas of the building pad, graded slopes, and required fuel modification. Additionally, removal of habitat area for such residential development and the presence of human activity on the site will result in impacts to the ESHA that will remain on the site through habitat fragmentation and disturbance through noise, lighting, and other impacts. The only alternative that could avoid these impacts would be the "no project" alternative. However, as discussed above, the "no project" alternative is not considered feasible as it would not afford the applicant a reasonable economic use of the property. Other alternatives considered include siting the proposed development in different areas of the property, different sizes and designs of the proposed structures.

The applicant originally submitted an application for development of a wider and larger house on the property (original proposal included 5126.5 sq. ft. including garage). The original application also included expansion of the existing dirt access road from 14 feet wide to 20 feet wide and paving of the road. This proposal would have required the removal of two oak trees and encroachment onto the protective zones of six oak trees. In response to staff concerns regarding impacts to oak woodland, chaparral, and visual resources, the applicant revised the plan for the project to improve the existing road without expanding the existing footprint. The new plan includes resurfacing of the road with gravel and installation of three retaining walls within the existing 14 foot wide footprint of the road. The plan was also revised to significantly decrease the width of the proposed residence so that the proposed residence and garage would not encroach onto the protected zones of any oak trees. The resulting residence is now proposed to be 3,997 sq. ft. including the first floor garage. The proposed development area is now approximately 1,808 sq. ft. This is substantially smaller than the maximum development area of 10,000 sq. ft. typically required by the Commission in past permit actions on lots containing ESHA.

The residence, as now proposed, however, would still require removal native chaparral and would require thinning and removal of chaparral and oak woodland understory considered ESHA for fuel modification purposes. Additionally, the seepage pits, which are part of the proposed septic system, while not located within the protective zones of any oak trees, is within 100 feet of several oaks on the property. The 1986 Malibu/Santa Monica Mountains LUP requires that septic pits be located at least 100 feet from the protective zone of any oak trees. Given these impacts, Commission staff explored several alternative locations and designs for the residence and septic system that would minimize these impacts. Two other locations on the site that are relatively clear of oaks were evaluated. However, analysis of these sites showed that construction of a residence or septic system in these locations would either result in additional encroachments and impacts to oak trees or placement of the residence in a drainage onsite that is subject to high amounts of erosion. No other sites for the house or septic system are available on the property that would reduce impacts to native chaparral and oak woodland ESHA onsite.

The existing 14-foot wide dirt access road on the subject lot currently encroaches upon the protective zone of several oak trees onsite. The proposed project would resurface this road. This resurfacing should not impact the oaks onsite given that no grading is proposed under the canopies of any oak trees for this purpose. Installation of two of the proposed retaining walls along the road, however, would require excavation within the protective zone of two coast live oak trees (trees #1 and 3 in the submitted Oak Tree Report). As discussed above, grading within the protective zone of oak trees has the potential to cause significant impacts to the shallow root system of the tree and can cause mortality of the tree. Staff explored alternatives to placement of these retaining walls at the given location. The designated fire department access for the proposed residence approved by Los Angeles County is directly from Piuma Road, meaning that the Fire Department does not need to access the residence via the existing dirt access road. Commission staff explored the alternative of the applicant constructing a garage adjacent to Piuma Road, instead of accessing the site via the existing dirt access road. This alternative was found to be unsuitable as the garage would have to sited on a dangerous turn on Piuma Road. Additionally, significant erosion has occurred west of the proposed residence due to drainage of water from Piuma Road through the site. Mitigation of this erosion with a retaining wall would likely still be required in the vicinity of Trees #1 and #3 for construction of a driveway to a garage adjacent to Piuma within the footprint of the currently proposed structure. Therefore, requiring the applicant to access the site directly from Piuma would likely not reduce impacts as compared to the proposed project and would present a safety hazard for the applicant. Therefore, no alternative designs for the driveway or garage exist that would reduce impacts to coast live oaks and chaparral and oak woodland ESHA onsite.

The Commission has found that if a significant encroachment within the protected zone of an oak tree is unavoidable, the impacts to the health of the oak tree and its potential loss over time must be mitigated at a ratio of 10:1 (10 replacement trees to mitigate for each tree impacted). Grading and installation of retaining walls along the existing dirt access road onsite will occur under the canopies and within the protected zones of two

oak trees onsite (trees #1 and 3 as identified in the submitted Oak Tree Report). In order to mitigate these impacts, the Commission finds it necessary to require the applicant to plant twenty replacement trees as detailed in **Special Condition Fifteen (15)**. Suitable habitat restoration areas exist on the subject lot. Special Condition Fifteen, therefore, requires the applicant to submit, for the review and approval of the Executive Director, an oak tree replacement program which provides for planting of twenty oak trees on the subject lot. The program shall also include a 10-year monitoring program to ensure the success of the oak restoration.

The Commission also finds that it is possible that installation of seepage pits within 100 feet of the canopies of coast live oak trees onsite may impact these oaks. The Commission, therefore, requires the applicant to monitor all oak trees with canopies within 100 feet of the proposed septic pits for 10 years pursuant to **Special Condition Fourteen (14)**. Should any of these trees be lost or suffer worsened health or vigor as a result of the project, the applicant shall submit, for the review and approval of the Executive Director, an on-site oak tree replacement planting program. Replacement trees shall be provided at a rate of 10:1.

Additionally, the proposed residence is located immediately adjacent to the protected zones of other oak trees. In order to ensure that no impacts outside the scope of work allowed by this permit occur to these oak trees, **Special Condition Fourteen (14)** requires the applicant to retain the services of a qualified biologist or arborist who shall be present on site during grading operations. The consultant shall immediately notify the Executive Director if unpermitted activities occur. Should any damage, removal, or impact occur to any oak trees, the applicant is required to mitigate the impacts to the oaks at ratio of 10:1. Special Condition Fourteen (14) also requires the applicant to install protective barrier fencing around the dripline of oak trees near the development area and to implement all oak tree preservation measures enumerated in the submitted Oak Tree Report. **Special Condition Three (3)** and **Fourteen (14)** also include provisions that prohibit permanent irrigation within the protected zone of any oak trees, and landscaping within the oak tree driplines or the protected zones shall be limited to native oak tree understory plant species.

These measures will minimize impacts to oak woodland on the site. However, given the location of oak woodland and chaparral ESHA on the site, there will still be significant impacts to ESHA resulting from construction of the proposed residence and fuel modification around the residence. The following discussion of ESHA impacts from new development and fuel modification is based on the findings of the Malibu LCP⁶.

Fuel modification is the removal or modification of combustible native or ornamental vegetation. It may include replacement with drought tolerant, fire resistant plants. The amount and location of required fuel modification would vary according to the fire history of the area, the amount and type of plant species on the site, topography, weather

⁶ Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.

patterns, construction design, and siting of structures. There are typically three fuel modification zones applied by the Fire Department:

Zone A (Setback Zone) is required to be a minimum of 20 feet beyond the edge of protected structures. In this area native vegetation is cleared and only ground cover, green lawn, and a limited number of ornamental plant species are allowed. This zone must be irrigated to maintain a high moisture content.

Zone B (Irrigated Zone) is required to extend from the outermost edge of Zone A to a maximum of 80 feet. In some cases, as with the proposed development, this zone can be reduced to 30 feet. In this area ground covers may not extend over 18 inches in height. Some native vegetation may remain in this zone if they are adequately spaced, maintained free of dead wood and individual plants are thinned. This zone must be irrigated to maintain a high moisture content.

Zone C (Thinning Zone) is required to extend from the outermost edge of Zone B up to 100 feet. This zone would primarily retain existing native vegetation, with the exception of high fuel species such as chamise, red shank, California sagebrush, common buckwheat and sage. Dead or dying vegetation must be removed and the fuel in existing vegetation reduced by thinning individual plants.

Thus, the combined required fuel modification area around structures can extend up to a maximum of 200 feet. If there is not adequate area on the project site to provide the required fuel modification for structures, then brush clearance may also be required on adjacent parcels.

Notwithstanding the need to protect structures from the risk of wildfire, fuel modification results in significant adverse impacts that are in excess of those directly related to the development itself. Within the area next to approved structures (Zone A), all native vegetation must be removed and ornamental, low-fuel plants substituted. In Zone B, most native vegetation will be removed or widely spaced. Finally, in Zone C, native vegetation may be retained if thinned, although particular high-fuel plant species must be removed. In this way, for a large area around any permitted structures, native vegetation will be cleared, selectively removed to provide wider spacing, and thinned.

Obviously, native vegetation that is cleared and replaced with ornamental species, or substantially removed and widely spaced will be lost as habitat and watershed cover. Additionally, thinned areas will be greatly reduced in habitat value. Even where complete clearance of vegetation is not required, the natural habitat can be significantly impacted, and ultimately lost. For instance, in coastal sage scrub and chaparral habitat, the natural soil coverage of the canopies of individual plants provides shading and reduced soil temperatures. When these plants are thinned, the microclimate of the area will be affected, increasing soil temperatures, which can lead to loss of individual plants

and the eventual conversion of the area to a dominance of different non-native plant species. The areas created by thinning between shrubs can be invaded by non-native grasses that will over time out-compete native species.

For example, undisturbed coastal sage scrub and chaparral vegetation typical of coastal canyon slopes, and the downslope riparian corridors of the canyon bottoms, ordinarily contains a variety of tree and shrub species with established root systems. Depending on the canopy coverage, these species may be accompanied by understory species of lower profile. The established vegetative cover, including the leaf detritus and other mulch contributed by the native plants, slows rainfall runoff from canyon slopes and staunches silt flows that result from ordinary erosional processes. The native vegetation thereby limits the intrusion of sediments into downslope creeks. Accordingly, disturbed slopes where vegetation is either cleared or thinned are more directly exposed to rainfall runoff that can therefore wash canyon soils into down-gradient creeks. The resultant erosion reduces topsoil and steepens slopes, making revegetation increasingly difficult or creating ideal conditions for colonization by invasive, non-native species that supplant the native populations.

The cumulative loss of habitat cover also reduces the value of the sensitive resource areas as a refuge for birds and animals, for example by making them—or their nests and burrows—more readily apparent to predators. The impacts of fuel clearance on bird communities was studied by Stralberg who identified three ecological categories of birds in the Santa Monica Mountains: 1) local and long distance migrators (ash-throated flycatcher, Pacific-slope flycatcher, phainopepla, black-headed grosbeak), 2) chaparral-associated species (Bewick's wren, wrentit, blue-gray gnatcatcher, California thrasher, orange-crowned warbler, rufous-crowned sparrow, spotted towhee, California towhee) and 3) urban-associated species (mourning dove, American crow, Western scrub-jay, Northern mockingbird)⁷. It was found in this study that the number of migrators and chaparral-associated species decreased due to habitat fragmentation while the abundance of urban-associated species increased. The impact of fuel clearance is to greatly increase this edge-effect of fragmentation by expanding the amount of cleared area and “edge” many-fold. Similar results of decreases in fragmentation-sensitive bird species are reported from the work of Bolger et al. in southern California chaparral⁸.

Fuel clearance and habitat modification may also disrupt native arthropod communities, and this can have surprising effects far beyond the cleared area on species seemingly unrelated to the direct impacts. A particularly interesting and well-documented example with ants and lizards illustrates this point. When non-native landscaping with intensive irrigation is introduced, the area becomes favorable for the invasive and non-native Argentine ant. This ant forms “super colonies” that can forage more than 650 feet out into the surrounding native chaparral or coastal sage scrub around the landscaped

⁷ Stralberg, D. 2000. Landscape-level urbanization effects on chaparral birds: a Santa Monica Mountains case study. Pp. 125–136 in Keeley, J.E., M. Baer-Keeley, and C.J. Fotheringham (eds.). *2nd interface between ecology and land development in California*. U.S. Geological Survey, Sacramento, California.

⁸ Bolger, D. T., T. A. Scott and J. T. Rotenberry. 1997. Breeding bird abundance in an urbanizing landscape in coastal Southern California. *Conserv. Biol.* 11:406-421.

area⁹. The Argentine ant competes with native harvester ants and carpenter ants displacing them from the habitat¹⁰. These native ants are the primary food resource for the native coast horned lizard, a California “Species of Special Concern.” As a result of Argentine ant invasion, the coast horned lizard and its native ant food resources are diminished in areas near landscaped and irrigated developments¹¹. In addition to specific effects on the coast horned lizard, there are other Mediterranean habitat ecosystem processes that are impacted by Argentine ant invasion through impacts on long-evolved native ant-plant mutualisms¹². The composition of the whole arthropod community changes and biodiversity decreases when habitats are subjected to fuel modification. In coastal sage scrub disturbed by fuel modification, fewer arthropod predator species are seen and more exotic arthropod species are present than in undisturbed habitats¹³.

Studies in the Mediterranean vegetation of South Africa (equivalent to California shrubland with similar plant species) have shown how the invasive Argentine ant can disrupt the whole ecosystem.¹⁴ In South Africa the Argentine ant displaces native ants as they do in California. Because the native ants are no longer present to collect and bury seeds, the seeds of the native plants are exposed to predation, and consumed by seed eating insects, birds and mammals. When this habitat burns after Argentine ant invasion the large-seeded plants that were protected by the native ants all but disappear. So the invasion of a non-native ant species drives out native ants, and this can cause a dramatic change in the species composition of the plant community by disrupting long-established seed dispersal mutualisms. In California, some insect eggs are adapted to being buried by native ants in a manner similar to plant seeds¹⁵.

The cumulative impacts of development on legal lots containing ESHA in the Santa Monica Mountains, including the required fuel modification and/or brushing is substantial. As discussed above, these impacts can be reduced by considering project alternatives and mitigation measures, but they cannot be completely avoided. However, the Commission can only find that this project alternative minimizes ESHA impacts if the remaining ESHA on the site is preserved to the extent possible. As such, this project alternative, as a whole, will minimize impacts to ESHA to the maximum extent feasible if

⁹ Suarez, A.V., D.T. Bolger and T.J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. *Ecology* 79(6):2041-2056.

¹⁰ Holway, D.A. 1995. The distribution of the Argentine ant (*Linepithema humile*) in central California: a twenty-year record of invasion. *Conservation Biology* 9:1634-1637. Human, K.G. and D.M. Gordon. 1996. Exploitation and interference competition between the invasive Argentine ant, (*Linepithema humile*), and native ant species. *Oecologia* 105:405-412.

¹¹ Fisher, R.N., A.V. Suarez and T.J. Case. 2002. Spatial patterns in the abundance of the coastal horned lizard. *Conservation Biology* 16(1):205-215. Suarez, A.V. J.Q. Richmond and T.J. Case. 2000. Prey selection in horned lizards following the invasion of Argentine ants in southern California. *Ecological Applications* 10(3):711-725.

¹² Suarez, A.V., D.T. Bolger and T.J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. *Ecology* 79(6):2041-2056. Bond, W. and P. Slingsby. Collapse of an Ant-Plant Mutualism: The Argentine Ant (*Iridomyrmex humilis*) and Myrmecochorous Proteaceae. *Ecology* 65(4):1031-1037.

¹³ Longcore, T.R. 1999. Terrestrial arthropods as indicators of restoration success in coastal sage scrub. Ph.D. Dissertation, University of California, Los Angeles.

¹⁴ Christian, C. 2001. Consequences of a biological invasion reveal the importance of mutualism for plant communities. *Nature* 413:635-639.

¹⁵ Hughes, L. and M. Westoby. 1992. Capitula on stick insect eggs and elaiosomes on seeds: convergent adaptations for burial by ants. *Functional Ecology* 6:642-648.

the remaining ESHA on the project site is protected. The most effective way to protect the remaining ESHA on the site is through an open space conservation easement held by the Mountains Recreation and Conservation Authority that prohibits development on the remainder of the site now and in the future.

Under the terms of this condition of **Special Condition Twelve (12)**, an open space and conservation easement would be required over the open space area (shown in **Exhibit 4**) will be granted by the applicant to the Mountains Recreation and Conservation Authority, a joint powers authority. The MRCA is a partnership between the Santa Monica Mountains Conservancy, the Conejo Recreation and Park District, and the Rancho Simi Recreation and Park District. The MRCA is dedicated to the preservation and management of open space, parkland, watershed lands, trails, and wildlife habitat. The MRCA manages and provides ranger services for almost 50,000 acres of public lands and parks that it owns or are owned by the Santa Monica Mountains Conservancy. The governing board of the Mountains Recreation and Conservation Authority (MRCA) has agreed to accept all open space easements required by the Commission for properties within the Santa Monica Mountains National Recreation Area.

The Commission finds that the intention of requiring the easement to be granted to the MRCA is to have a public agency that has park rangers and other staff active in the Santa Monica Mountains area monitor open space areas to ensure that the restrictions are followed. The MRCA acquires and manages properties for recreation and conservation purposes in the Santa Monica Mountains. MRCA staff and park rangers routinely monitor properties under MRCA management in the Santa Monica Mountains and enforce State law and local ordinances. Therefore, the MRCA is better able to monitor open space and conservation easements than Commission staff. As such, the Commission finds that the requirement of an open space and conservation easement is the most effective method of ensuring that the open space area on the project site will be conserved in the future. Further, the easement will be recorded against the title of the property and thus provide notice to future owners of the limitations that apply to the open space conservation area. The terms of the easement do not provide for use of the open space conservation area on the site by the public or any other individual or group for any purpose.

As detailed in **Special Condition Twelve (12)**, the Open Space Conservation Easement will prohibit all development, with the exception of fuel modification and drainage control activities carried out in accordance with **Special Condition Two (2)** and **Special Condition Three (3)**. **Special Condition Twelve (12)** also allows planting of native vegetation and other restoration activities, and construction and maintenance of public hiking trails, if approved by the Commission as an amendment to this coastal development permit, or as a new coastal development permit. **Special Condition Twelve (12)** also makes an exception for existing road, trail, and utilities easements.

While impacts from fuel modification and development in ESHA can be reduced through siting and design alternatives for new development, they cannot be completely avoided,

given the high fire risk and the extent of ESHA on the site. The Commission finds that the loss of chaparral and oak woodland understory ESHA resulting from the removal, conversion, or modification of natural habitat for new development, including fuel modification and brush clearance must be mitigated. The acreage of habitat that is impacted must be determined based on the size of the required fuel modification zone.

In this case, the applicants' approved fuel modification plan (approved by the Los Angeles County Fire Department) shows the use of the standard two zones of vegetation modification. Zone "A" (setback zone) extends 30 feet from the proposed residence and garage. Zone "C" (thinning zone) extends from Zone "A" to 200 feet from the proposed residence. Additionally, the preliminary fuel modification plans approved by the Los Angeles County Fire Department specify that no oak trees are to be trimmed or removed and irrigation within the dripline of oaks is prohibited. As such, the oak trees themselves will not be impacted by fuel modification. Nonetheless, the removal of dead limbs and other material will be required as well as thinning of chaparral that is interspersed with the oak woodland habitat on the site. So, while impacts to the individual trees will be minimized, the habitat value of the oak woodland will be reduced.

As noted above, the entire lot, with the exception of the existing dirt access road and 10 foot strip adjacent to Piuma Road, is considered ESHA. The ESHA areas that will be impacted by the proposed project are the areas of proposed residential construction, as well as fuel modification and brush clearance, with the exception of those areas in the vicinity of the previously disturbed dirt access road and area adjacent to Piuma Road. The precise area of ESHA that will be impacted by the proposed development has not been calculated. Therefore, the Commission finds that it is necessary to require the applicant to delineate the ESHA both on and offsite that will be impacted by the proposed development including the areas affected by fuel modification and brushing activities, as required by **Special Condition Nine (9)**.

The Commission has identified three methods for providing mitigation for the unavoidable loss of ESHA resulting from development, including habitat restoration, habitat conservation, and an in-lieu fee for habitat conservation. The Commission finds that these measures are appropriate in this case to mitigate the loss of chaparral habitat on and offsite. These three mitigation methods are provided as three available options for compliance with **Special Condition Nine (9)**. The first method is to provide mitigation through the restoration of an area of degraded habitat (either on the project site, or at an off-site location) that is equivalent in size to the area of habitat impacted by the development. A restoration plan must be prepared by a biologist or qualified resource specialist and must provide performance standards, and provisions for maintenance and monitoring. The restored habitat must be permanently preserved through the recordation of an open space easement. This mitigation method is provided for in **Special Condition Nine (9), subpart A**.

The second habitat impact mitigation method is habitat conservation. This includes the conservation of an area of intact habitat equivalent to the area of the impacted habitat. The parcel containing the habitat conservation area must be restricted from future

development and permanently preserved. If the mitigation parcel is larger in size than the impacted habitat area, the excess acreage could be used to provide habitat impact mitigation for other development projects that impact ESHA. This mitigation method is provided for in **Special Condition Nine (9), subpart B**.

The third habitat impact mitigation option is an in-lieu fee for habitat conservation. The fee is based on the habitat types in question, the cost per acre to restore or create the comparable habitat types, and the acreage of habitat affected by the project. In order to determine an appropriate fee for the restoration or creation of chaparral and coastal sage scrub habitat, the Commission's biologist contacted several consulting companies that have considerable experience carrying out restoration projects. Overall estimates varied widely among the companies, because of differences in the strategies employed in planning the restoration (for instance, determining the appropriate number of plants or amount of seeds used per acre) as well as whether all of the restoration planting, monitoring and maintenance was carried out by the consultant or portions are subcontracted. Additionally, the range of cost estimates reflect differences in restoration site characteristics including topography (steeper is harder), proximity to the coast (minimal or no irrigation required at coastal sites), types of plants (some plants are rare or difficult to cultivate), density of planting, severity of weed problem, condition of soil, etc. Larger projects may realize some economy of scale.

Staff determined the appropriate mitigation for loss of or chaparral ESHA should be based on the actual installation of replacement plantings on a disturbed site, including the cost of acquiring the plants (seed mix and container stock) and installing them on the site (hydroseeding and planting). Three cost estimates were obtained for the installation of plants and seeds for one-acre of restoration. These estimates were \$9,541, \$12,820, and \$13,907 per acre of plant installation. The Commission finds it appropriate to average the three estimates of plant installation to arrive at the reasonable in-lieu fee to mitigate for the loss of ESHA associated with the approval of development within an ESHA. Based on this averaging, the required in-lieu fee for habitat mitigation is \$12,000 (rounded down from the average figure of \$12,089 to simplify administration) per acre of habitat.

The Commission finds that the in-lieu fee of \$12,000 per acre is appropriate to provide mitigation for the habitat impacts to ESHA areas where all native vegetation will be removed (building site, the "A" zone required for fuel modification, and off-site brush clearance, if required), and where vegetation will be significantly removed and any remaining vegetation will be subjected to supplemental irrigation (the "B" zone or any other irrigated zone required for fuel modification). In these areas, complete removal or significant removal of ESHA, along with irrigation completely alters the habitat and eliminates its value to the native plant and animal community.

ESHA modified for the "C" zone that is thinned but non-irrigated (required for fuel modification) is certainly diminished in habitat value, but unlike the building site, "A" zone, "B" zone, and any other irrigated zone, habitat values are not completely destroyed. Native vegetation in the "C" zone is typically required to be thinned, and

shrubs must be maintained at a certain size to minimize the spread of fire between the individual plants. This area is not typically required to be irrigated, although in this case, as discussed below, temporary irrigation may be required in order to re-establish chaparral vegetation that had previously been removed by dirt bike and all-terrain vehicle use. As such, the Commission finds that it is not appropriate to require the same level of in-lieu fee mitigation for impacts to ESHA within a non-irrigated "C" zone required for fuel modification. Although the habitat value in the "C" zone (or any other non-irrigated zone) is greatly reduced, it is not possible to precisely quantify the reduction. The Commission's biologist believes that the habitat value of non-irrigated fuel modification zones is reduced by at least 25 percent (and possibly more) due to the direct loss of vegetation, the increased risk of weed invasion, and the proximity of disturbance. The Commission finds that it is also less costly and difficult to restore chaparral habitat when some of the native vegetation remains, rather than when all of the native habitat is removed. Because of the uncertainty and the inability to precisely quantify the reduction in habitat value, the Commission concludes that it is warranted to impose a mitigation fee of \$3,000 per acre (one quarter of the cost of full restoration) for the "C" zone or other non-irrigated fuel modification zone.

In this case, the applicant's approved fuel modification plan (approved by the Los Angeles County Fire Department) shows the use of two zones of vegetation modification. Zone "A" (setback zone) extends 30 feet from the proposed residence and garage. Zone "C" (thinning zone) extends from Zone "A" to 200 feet from the proposed residence and garage. As such, the ESHA area that will be permanently impacted by the proposed project is the required fuel modification area and proposed residence area excluding the thin disturbed area adjacent to Piuma Road and the existing dirt access road. The appropriate in-lieu fee calculation would then be based on \$12,000 per acre for any irrigated fuel modification area (the "A" Zone), developed area, or brush clearance area offsite (if any) and \$3,000 per acre of un-irrigated fuel modification area (zone "C").

The Commission notes that the use of rodenticides containing anticoagulant compounds have been linked to the death of sensitive predator species, including mountain lions and raptors, in the Santa Monica Mountains. These species are a key component of chaparral and coastal sage scrub communities in the Santa Monica Mountains considered ESHA. Therefore, in order to avoid adverse impacts to sensitive predator species, **Special Condition Three (3)**, disallows the use of rodenticides containing any anticoagulant compounds on the subject property.

Furthermore, in order to ensure that vegetation clearance for fire protection purposes does not occur prior to commencement of grading or construction of the proposed structures, the Commission finds that it is necessary to impose a restriction on the removal of natural vegetation as specified in **Special Condition Eight (8)**. This restriction specifies that natural vegetation shall not be removed until grading or building permits have been secured and construction of the permitted structures has commenced. The limitation imposed by Special Condition Eight (8) avoids loss of natural vegetative coverage resulting in unnecessary erosion in the absence of

adequately constructed drainage and run-off control devices and implementation of the landscape and interim erosion control plans.

The Commission notes that streams and drainages, such as Dark Canyon Creek and Cold Creek located downslope of the proposed building pad, provide important habitat for plant and animal species. Section 30231 of the Coastal Act provides that the quality of coastal waters and streams shall be maintained and restored whenever feasible through means such as: controlling runoff, preventing interference with surface water flows and alteration of natural streams, and by maintaining natural vegetation buffer areas. In past permit actions the Commission has found that new development adjacent to or upslope of coastal streams and natural drainages results in potential adverse impacts to riparian habitat and marine resources from increased erosion, contaminated storm runoff, introduction of non-native and invasive plant species, disturbance of wildlife, and loss of riparian plant and animal habitat.

The Commission finds that potential adverse effects of the proposed development on riparian and aquatic habitats of these streams may be further minimized through the implementation of a drainage and polluted runoff control plan, which will ensure that erosion is minimized and polluted run-off from the site is controlled and filtered before it reaches natural drainage courses within the watershed. Therefore, the Commission requires **Special Condition Two (2)**, the Drainage and Polluted Runoff Control Plan, which requires the applicant to incorporate appropriate drainage devices and Best Management Practices (BMPs) to ensure that run-off from the proposed structures, impervious surfaces, and building pad area is conveyed offsite in a non-erosive manner and is treated/filtered to reduce pollutant load before it reaches coastal waterways. Special Condition Two (2) will ensure implementation of these and other BMPs to reduce polluted runoff. Additionally, **Special Condition Three (3)** requires all graded areas to be replanted with native vegetation so as to reduce erosion and sediment laden runoff into coastal waterways.

In addition, the Commission has found that night lighting of areas in the Malibu/Santa Monica Mountains creates a visual impact to nearby scenic roads, parks, and trails. In addition, night lighting may alter or disrupt feeding, nesting, and roosting activities of native wildlife species. The subject site contains environmentally sensitive habitat. Therefore, **Special Condition Six (6)** limits night lighting of the site in general; limits lighting to the developed area of the site; and specifies that lighting be shielded downward. The restriction on night lighting is necessary to protect the night time rural character of this portion of the Santa Monica Mountains consistent with the scenic and visual qualities of this coastal area. In addition, low intensity security lighting will assist in minimizing the disruption of wildlife traversing this rural and relatively undisturbed area at night. Thus, the lighting restrictions will attenuate the impacts of unnatural light sources and reduce impacts to sensitive wildlife species.

Furthermore, fencing of the site would adversely impact the movement of wildlife through the chaparral and oak woodland ESHA on this parcel. Therefore, the

Commission finds it is necessary to limit fencing to the development area as required in **Special Condition Three (3)**.

Finally, the Commission finds that the amount and location of any new development that may be proposed in the future on the subject site is significantly limited by the unique nature of the site and the environmental constraints discussed above. Therefore, to ensure that any future structures, additions, change in landscaping or intensity of use at the project site, that may otherwise be exempt from coastal permit requirements, are reviewed by the Commission for consistency with the resource protection policies of the Coastal Act, **Special Condition Ten (10)**, the future development restriction, has been required. **Special Condition Eleven (11)** requires the applicant to record a deed restriction that imposes the terms and conditions of this permit as restrictions on use and enjoyment of the property and provides any prospective purchaser of the site with recorded notice that the restrictions are imposed on the subject property.

For the reasons set forth above, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30230, 30231, 30240, and 30107.5 of the Coastal Act.

D. Water Quality

The Commission recognizes that new development in the Santa Monica Mountains has the potential to adversely impact coastal water quality through the removal of native vegetation, increase of impervious surfaces, increase of runoff, erosion, and sedimentation, and introduction of pollutants such as petroleum, cleaning products, pesticides, and other pollutant sources, as well as effluent from septic systems. Section 30231 of the Coastal Act states:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, minimizing alteration of natural streams.

The project site is located in the Cold Creek Canyon watershed. While no development is proposed in drainages onsite, the proposed development will result in an increase in impervious surface, which in turn decreases the infiltrative function and capacity of existing permeable land on site. The reduction in permeable space leads to an increase in the volume and velocity of stormwater runoff that can be expected to leave the site. Further, pollutants commonly found in runoff associated with residential use include petroleum hydrocarbons including oil and grease from vehicles; heavy metals; synthetic

organic chemicals including paint and household cleaners; soap and dirt from washing vehicles; dirt and vegetation from yard maintenance; litter; fertilizers, herbicides, and pesticides; and bacteria and pathogens from animal waste. The discharge of these pollutants to coastal waters can cause cumulative impacts such as: eutrophication and anoxic conditions resulting in fish kills and diseases and the alteration of aquatic habitat, including adverse changes to species composition and size; excess nutrients causing algae blooms and sedimentation increasing turbidity which both reduce the penetration of sunlight needed by aquatic vegetation which provide food and cover for aquatic species; disruptions to the reproductive cycle of aquatic species; and acute and sublethal toxicity in marine organisms leading to adverse changes in reproduction and feeding behavior. These impacts reduce the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes and reduce optimum populations of marine organisms and have adverse impacts on human health.

Therefore, in order to find the proposed development consistent with the water and marine resource policies of the Coastal Act, the Commission finds it necessary to require the incorporation of Best Management Practices designed to control the volume, velocity and pollutant load of stormwater leaving the developed site. Critical to the successful function of post-construction structural BMPs in removing pollutants in stormwater to the Maximum Extent Practicable (MEP), is the application of appropriate design standards for sizing BMPs. The majority of runoff is generated from small storms because most storms are small. Additionally, storm water runoff typically conveys a disproportionate amount of pollutants in the initial period that runoff is generated during a storm event. Designing BMPs for the small, more frequent storms, rather than for the large infrequent storms, results in improved BMP performance at lower cost.

The Commission finds that sizing post-construction structural BMPs to accommodate (infiltrate, filter or treat) the runoff from the 85th percentile storm runoff event, in this case, is equivalent to sizing BMPs based on the point of diminishing returns (i.e. the BMP capacity beyond which, insignificant increases in pollutants removal (and hence water quality protection) will occur, relative to the additional costs. Therefore, the Commission requires the selected post-construction structural BMPs be sized based on design criteria specified in **Special Condition No. Two (2)**, and finds this will ensure the proposed development will be designed to minimize adverse impacts to coastal resources, in a manner consistent with the water and marine policies of the Coastal Act.

Furthermore, interim erosion control measures implemented during construction and post construction landscaping will serve to minimize the potential for adverse impacts to water quality resulting from drainage runoff during construction and in the post-development stage. Therefore, the Commission finds that **Special Condition Three (3)** is necessary to ensure the proposed development will not adversely impact water quality or coastal resources.

Finally, the proposed development includes the installation of an on-site septic system to serve the residence. The applicants' geologic consultants performed percolation tests

and evaluated the proposed septic system. The report concludes that the site is suitable for the septic system and there would be no adverse impact to the site or surrounding areas from the use of a septic system. Finally, the County of Los Angeles Environmental Health Department has given in-concept approval of the proposed septic system, determining that the system meets the requirements of the plumbing code. The Commission has found that conformance with the provisions of the plumbing code is protective of resources

E. Visual Resources

Section 30251 of the Coastal Act states:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30251 of the Coastal Act requires scenic and visual qualities to be considered and preserved. Section 30251 also requires that development be sited and designed to protect views of scenic areas, minimize alteration of landforms, and be visually compatible with the surrounding area.

In addition, the Malibu/Santa Monica Mountains LUP provides policy guidance regarding the protection of visual resources. The Coastal Commission, as guidance in the review of development proposals in the Santa Monica Mountains, has applied these policies.

P91 All new development shall be designed to minimize impacts and alterations of physical features, such as ravines and hillsides, and processes of the site (i.e., geological, soils, hydrological, water percolation and runoff) to the maximum extent feasible.

P125 New development shall be sited and designed to protect public views from LCP- designated highways to and along the shoreline and to scenic coastal areas, including public parklands. Where physically and economically feasible, development on a sloped terrain should be set below road grade.

- P129 Structures should be designed and located so as to create an attractive appearance and harmonious relationship with the surrounding environment.**
- P130 In highly scenic areas and along scenic highways, new development (including buildings, fences, paved areas, signs, and landscaping) shall:**
- **Be sited and designed to protect views to and along the ocean and to and along other scenic features, as defined and identified in the Malibu LUP.**
 - **Minimize the alteration of natural landforms**
 - **Be landscaped to conceal raw cut slopes**
 - **Be visually compatible with and subordinate to the character of its setting.**
 - **Be sited so as to not significantly intrude into the skyline as seen from public viewing places.**
- P131 Where feasible, prohibit placement of structures that will break the ridgeline views, as seen from public places**
- P134 Structures shall be sited to conform to the natural topography, as feasible. Massive grading and reconfiguration of the site shall be discouraged.**
- P142 New development along scenic roadways shall be set below the road grade on the down hill side wherever feasible, to protect designated scenic canyon and ocean views.**

The proposed development would be located along Piuma Road and the north slope of the Piuma Ridgeline, in a visually prominent location. Piuma ridgeline is designated as a significant ridgeline in the 1986 Malibu/Sana Monica Mountains Land Use Plan as slopes on both the north and south side of the ridgeline are considered integral to the Malibu Canyon viewshed area. Both Malibu Canyon Road and Piuma Road are identified in the 1986 LUP as first priority Scenic Highways. The Piuma ridgeline is also visible from Malibu Canyon State Park and surrounding areas corresponding generally to Scenic Element #9 identified in the 1986 Malibu LUP. Southbound travelers on Malibu Canyon Road get a full view of the north slope of the Piuma ridgeline halfway between Mulholland Highway and Piuma Road. Recreational users of the Backbone trail and the Cold Creek basin will also get a full view of the north slope of the ridgeline. With a few exceptions, the north slope of Piuma ridgeline is undeveloped above an elevation of 900 feet. The subject lot is surrounded to the south, southeast, and west by lots predominantly covered in chaparral and oak woodland habitats. This area is developed sparsely with single family residences. The areas to the north and east of the lot are characterized by undeveloped natural terrain vegetated in chaparral and oak woodland habitat.

In the review of this project, Commission staff analyzed the publicly accessible locations where the proposed development is visible to assess potential visual impacts to the public. Staff examined the building site, the size of the proposed structure, and alternatives to the size, bulk and scale of the structure. The development of the residence raises two issues regarding the siting and design: (1) whether or not public views from public roadways will be adversely affected; or, (2) whether or not public views from public lands and trails will be affected.

The applicant proposes to construct a five story, 35 foot high, 3,997 sq. ft. single family residence including garage. The residence is designed to be stepped into the hillside. The first story is a 545 sq. ft. garage, the second story a 625 sq. ft. mezzanine (identified as basement in some plans) and the third through fifth stories livable residential space that are 1,184, 958 sq. ft., and 685 sq. ft. in size respectively. While the proposed residence is at no point above 35 feet in height above existing grade, the change in elevation from the lowest point of the 1st floor garage (1,673 feet above sea level) and top of the highest roofline (1,732 feet above sea level) is approximately 59 feet. Portions of the first four floors of the house are subterranean as shown in Exhibits 2 and 3. The development also includes installation of a septic tank and system, water well, and 10,000 gallon water tank (10 feet in height; top elevation 1,709 feet above sea level). The applicant is also proposing improvements to an existing 14 foot wide access road, including placement of gravel road material and installation of three retaining walls.

The portion of Piuma Road directly adjacent to the proposed residence is approximately 1,705 to 1,720 feet above sea level in elevation. The top of the residence would extend to 1,732 feet in elevation. Therefore, the residence will obstruct a 32 foot wide (44 feet if include fire department access staircases on both sides of house) and approximately 12 to 27 ft high area of mountain views from Piuma Road, directly in front of the proposed structure. The applicant has also submitted photos from Malibu Canyon Road southwest of the Piuma Ridgeline which show that the top portion of the residence will extend above the ridgeline and will be visible from Malibu Canyon Road. The area of Malibu Canyon Road from which the proposed residence could be viewed is part of Malibu Creek State Park. There are significant views of the natural canyon walls in this area and with few exceptions, no views of development on the ridgeline intrude. This portion of the residence above the ridgeline would also likely be visible from other areas of Malibu Creek State Park. The full extent of the residence that is not screened by native coast live oaks onsite will also be visible from the public Backbone Trail located north of the subject lot. The proposed project would, therefore, impact scenic vistas and visual resources in the area.

As discussed in Section E. above, in chaparral and oak woodland scrub ESHA areas in the Santa Monica Mountains, the Commission has allowed development of single family residences on legal lots as long as the development is clustered on the lot and the building pad size does not exceed 10,000 sq. ft. to minimize impacts on the sensitive watershed habitat. This 10,000 sq. ft. is a maximum development area that may be

reduced if needed to prevent adverse impacts on coastal resources. In this case, the proposed project has been sited and designed such that the proposed development area (excluding the driveway) is approximately 1,800 square feet. The proposed residence is five-stories with maximum heights of 35 feet from existing grade at any given point. The visibility of the residence as seen from Malibu Canyon Road and Piuma Road and public parkland and trails could be reduced by moving the structure further north, downslope of Piuma Road. However, this alternative would result in the removal and encroachment into oak trees, significant amounts of additional grading and landform alteration, as well as the removal of more oak woodland and chaparral ESHA.

In past permit actions, the Commission has also required that new development located in highly visible, scenic areas be restricted in height in order to protect visual resources. In this case, the applicant has already narrowed the house significantly and stepped the house into the hillside so that the residence does not encroach upon or cause the removal of any oak trees onsite. The resulting proposal is a five story residential structure that includes the garage as the first story. While the proposed height of the residence conforms to the maximum 35-foot height limit contained in the Malibu/Santa Monica Mountains Land Use Plan, the proposed structure will adversely impact scenic view and visual resources from public viewing areas. The Commission finds that the proposed residential structure could be reduced by 10 feet in height in order to reduce the public visibility of the residence, while still allowing a 545 sq. ft. garage and 3 stories and 2,767 sq. ft. of livable residential space if the proposed second floor mezzanine is converted into livable space. The resulting building would be four stories in height and extend from 1,673 to a maximum of 1,722 feet above sea level.

The Commission staff has reviewed property data (Realquest, 2007) in the area surrounding the property to see whether the proposed development is in conformity with the character of the surrounding rural area. This analysis showed the development of several single family residences ranging in size from 830 sq. ft. to 4,500 sq. ft. in the area, with two thirds of the houses less than 2,200 sq. ft in size and one third between 2,200 sq. ft. and 4,500 sq. ft. The Commission finds that reduction of the height of the residence by 10 feet would modify the residence to contain at least 2,767 sq.ft. in livable space and a 545 sq. ft. garage that would conform to the scale and character of the surrounding area and reduce impacts to scenic vistas. As such, the Commission finds it necessary to impose **Special Condition Thirteen (13)** that requires the applicant to submit reviewed plans, for the review and approval of the Executive Director, that eliminate all developed located above elevation 1,722 feet above sea level, including the fifth story of the residential structure, including garage. The new residence and garage shall not exceed 35 feet in height from existing grade at any given location. The overall change in elevation from the lowest point of the first floor garage to top of the roof line shall not exceed 49 feet. The submitted plans may include development of the second story "mezzanine" into livable residential area. The redesigned residence shall also not encroach upon the protection zone of any oak trees onsite.

In response to recommendations from Commission staff to reduce the size and height of the residence, the applicant has proposed an alternative development plan where the

545 sq. ft. garage would be located next to the house along Piuma Road and the house would extend four stories from the dirt access road to above Piuma Road. This alternative, however, would require encroachment and possible removal of coast live oak trees in the area. Additionally, placement of the garage next to the house would increase the overall area along Piuma Road where views of the mountains north of the site would be blocked and would increase the visibility of the house from the Backbone Trail. Finally, placement of the garage next to the house instead of under it would extend the fuel modification area necessary for the residence and garage further eastward into chaparral and oak woodland ESHA. As described above, the removal of one story of the residence is the least environmentally damaging alternative to protect biological and visual resources in the area.

Since the project site will be visible from significant scenic areas, mitigation to address potential visual impacts is needed for the proposed residence. The visual impact of the proposed structures can be minimized by requiring these structures to be finished in a color consistent with the surrounding natural landscape and, further, by requiring that windows on the proposed residence be made of non-reflective glass. To ensure visual impacts associated with the colors of the structure and the potential glare of the window glass are minimized, the Commission requires the applicant to use colors compatible with the surrounding environment and non-glare glass, as detailed in **Special Condition Five (5)**.

Visual impacts can be further reduced by the use of appropriate and adequate landscaping. Therefore, **Special Condition Three (3)** requires the applicant to ensure that the vegetation on site remains visually compatible with the native flora of surrounding areas. Implementation of Special Condition Three (3) will soften the visual impact of the development from public view areas. To ensure that the final approved landscaping plans are successfully implemented, Special Condition Three (3) also requires the applicant to revegetate all disturbed areas in a timely manner and includes a monitoring component to ensure the successful establishment of all newly planted and landscaped areas over time.

In addition, the Commission has found that night lighting of areas in the Malibu/Santa Monica Mountains area creates a visual impact to nearby scenic roads and trails. In addition, night lighting may alter or disrupt feeding, nesting, and roosting activities of native wildlife species. The subject site contains environmentally sensitive habitat. Therefore, **Special Condition Six (6)** limits night lighting of the site in general; limits lighting to the developed area of the site; and specifies that lighting be shielded downward. The restriction on night lighting is necessary to protect the nighttime rural character of this portion of the Santa Monica Mountains consistent with the scenic and visual qualities of this coastal area.

Finally, regarding future developments or improvements, certain types of development on the property, normally associated with a single-family residence, which might otherwise be exempt, have the potential to impact scenic and visual resources in this area. It is necessary to ensure that any future development or improvements normally

associated with the entire property, which might otherwise be exempt, is reviewed by the Commission for compliance with the scenic resource policy, Section 30251 of the Coastal Act. **Special Condition Ten (10)**, the Future Development Restriction, will ensure that the Commission will have the opportunity to review future projects for compliance with the Coastal Act. Further, **Special Condition Eleven (11)** requires the applicant to record a deed restriction that imposes the terms and conditions of this permit as restrictions on use and enjoyment of the subject property and provides any prospective purchaser with recorded notice that the restrictions are imposed on the subject property. Finally, **Special Condition Twelve (12)** requires the applicant to record an open space conservation easement on all areas outside of the immediate development area of the residence in order to ensure that the remainder of the property remains open space. This easement is described in detail in Section E Environmentally Sensitive Habitat above.

Therefore, the Commission finds that the project, as conditioned, minimizes adverse effects to public views to and along the coast and minimizes the alteration of natural landforms. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30251 of the Coastal Act.

F. Local Coastal Program

Section 30604 of the Coastal Act states:

a) Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a local program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).

Section 30604(a) of the Coastal Act provides that the Commission shall issue a Coastal Development Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program, which conforms to Chapter 3 policies of the Coastal Act. The preceding sections provide findings that the proposed project will be in conformity with the provisions of Chapter 3 if certain conditions are incorporated into the projects and are accepted by the applicant. As conditioned, the proposed developments will not create adverse impacts and is found to be consistent with the applicable policies contained in Chapter 3. Therefore, the Commission finds that approval of the proposed developments, as conditioned, will not prejudice the County of Los Angeles' ability to prepare a Local Coastal Program for this area which is also consistent with the policies of Chapter 3 of the Coastal Act, as required by Section 30604(a).

H. California Environmental Quality Act

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed in detail above, project alternatives and mitigation measures have been considered and incorporated into the project. Five types of mitigation actions include those that are intended to avoid, minimize, rectify, reduce, or compensate for significant impacts of development. Mitigation measures required as part of this coastal development permit amendment include the avoidance of impacts to ESHA through clustering structures, prohibiting development outside of the approved development area as required by the granting of an open space and conservation easement and identifying an appropriate location for disposal of excess cut material. Mitigation measures required to minimize impacts include requiring drainage best management practices (water quality), interim erosion control (water quality and ESHA), limiting lighting (ESHA), restricting structure color (visual resources), and requiring future improvements to be considered through a CDP. Finally, the habitat impact mitigation condition is a measure required to compensate for impacts to ESHA. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.



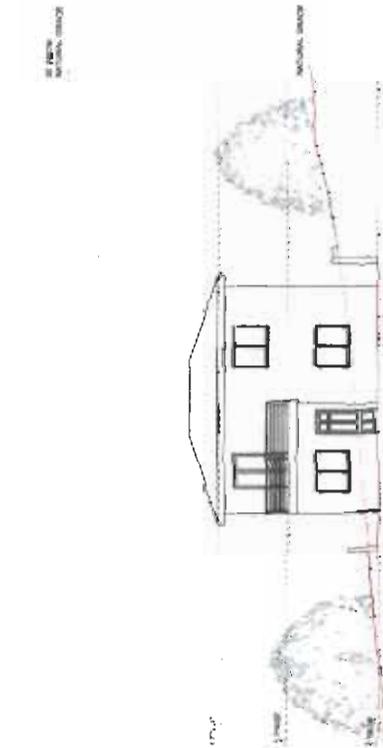
Exhibit 1
CDP 4-06-132
Project Area

Project Location

2.5 miles



NORTH



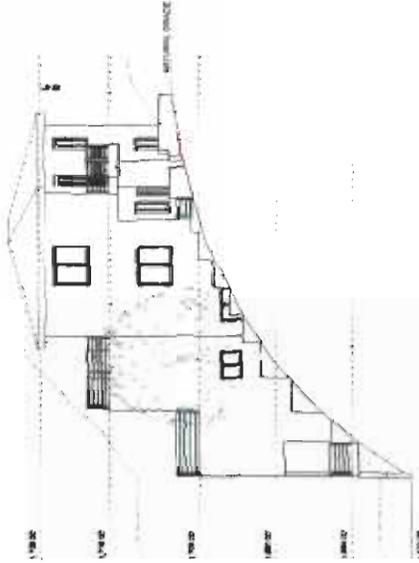
SOUTH

ELEVATIONS

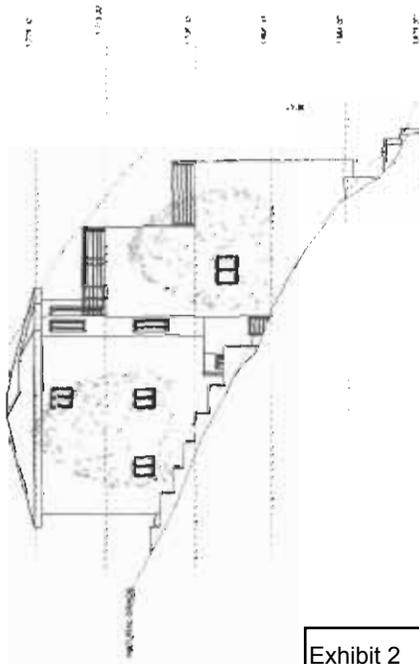
PIUMA
MEADOW
SANTA PIUMA RD
MILLIS CA 92028

1"=8'

A-03



WEST



EAST

Exhibit 2

CDP 4-06-132

Elevations

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
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MEMORANDUM

FROM: John Dixon, Ph.D.
Ecologist / Wetland Coordinator

TO: Ventura Staff

SUBJECT: Designation of ESHA in the Santa Monica Mountains

DATE: March 25, 2003

In the context of the Malibu LCP, the Commission found that the Mediterranean Ecosystem in the Santa Mountains is rare, and especially valuable because of its relatively pristine character, physical complexity, and resultant biological diversity. Therefore, areas of undeveloped native habitat in the Santa Monica Mountains that are large and relatively unfragmented may meet the definition of ESHA by virtue of their valuable roles in that ecosystem, regardless of their relative rarity throughout the state. This is the only place in the coastal zone where the Commission has recognized chaparral as meeting the definition of ESHA. The scientific background presented herein for ESHA analysis in the Santa Monica Mountains is adapted from the Revised Findings for the Malibu LCP that the Commission adopted on February 6, 2003.

For habitats in the Santa Monica Mountains, particularly coastal sage scrub and chaparral, there are three site-specific tests to determine whether an area is ESHA because of its especially valuable role in the ecosystem. First, is the habitat properly identified, for example as coastal sage scrub or chaparral? The requisite information for this test generally should be provided by a site-specific biological assessment. Second, is the habitat largely undeveloped and otherwise relatively pristine? Third, is the habitat part of a large, contiguous block of relatively pristine native vegetation? This should be documented with an aerial photograph from our mapping unit (with the site delineated) and should be attached as an exhibit to the staff report. For those habitats that are absolutely rare or that support individual rare species, it is not necessary to find that they are relatively pristine, and are neither isolated nor fragmented.

**Designation of Environmentally Sensitive Habitat in the
Santa Monica Mountains**

The Coastal Act provides a definition of "environmentally sensitive area" as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

Exhibit 4

CDP 4-06-132

ESHA Findings

There are three important elements to the definition of ESHA. First, a geographic area can be designated ESHA either because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as ESHA, the species or habitat must be either rare or it must be especially valuable. Finally, the area must be easily disturbed or degraded by human activities.

The first test of ESHA is whether a habitat or species is rare. Rarity can take several forms, each of which is important. Within the Santa Monica Mountains, rare species and habitats often fall within one of two common categories. Many rare species or habitats are globally rare, but locally abundant. They have suffered severe historical declines in overall abundance and currently are reduced to a small fraction of their original range, but where present may occur in relatively large numbers or cover large local areas. This is probably the most common form of rarity for both species and habitats in California and is characteristic of coastal sage scrub, for example. Some other habitats are geographically widespread, but occur everywhere in low abundance. California's native perennial grasslands fall within this category.

A second test for ESHA is whether a habitat or species is especially valuable. Areas may be valuable because of their "special nature," such as being an unusually pristine example of a habitat type, containing an unusual mix of species, supporting species at the edge of their range, or containing species with extreme variation. For example, reproducing populations of valley oaks are not only increasingly rare, but their southernmost occurrence is in the Santa Monica Mountains. Generally, however, habitats or species are considered valuable because of their special "role in the ecosystem." For example, many areas within the Santa Monica Mountains may meet this test because they provide habitat for endangered species, protect water quality, provide essential corridors linking one sensitive habitat to another, or provide critical ecological linkages such as the provision of pollinators or crucial trophic connections. Of course, all species play a role in their ecosystem that is arguably "special." However, the Coastal Act requires that this role be "especially valuable." This test is met for relatively pristine areas that are integral parts of the Santa Monica Mountains Mediterranean ecosystem because of the demonstrably rare and extraordinarily special nature of that ecosystem as detailed below.

Finally, ESHAs are those areas that could be easily disturbed or degraded by human activities and developments. Within the Santa Monica Mountains, as in most areas of southern California affected by urbanization, all natural habitats are in grave danger of direct loss or significant degradation as a result of many factors related to anthropogenic changes.

Ecosystem Context of the Habitats of the Santa Monica Mountains

The Santa Monica Mountains comprise the largest, most pristine, and ecologically complex example of a Mediterranean ecosystem in coastal southern California.

California's coastal sage scrub, chaparral, oak woodlands, and associated riparian areas have analogues in just a few areas of the world with similar climate. Mediterranean ecosystems with their wet winters and warm dry summers are only found in five localities (the Mediterranean coast, California, Chile, South Africa, and south and southwest Australia). Throughout the world, this ecosystem with its specially adapted vegetation and wildlife has suffered severe loss and degradation from human development. Worldwide, only 18 percent of the Mediterranean community type remains undisturbed¹. However, within the Santa Monica Mountains, this ecosystem is remarkably intact despite the fact that it is closely surrounded by some 17 million people. For example, the 150,000 acres of the Santa Monica Mountains National Recreation Area, which encompasses most of the Santa Monica Mountains, was estimated to be 90 percent free of development in 2000². Therefore, this relatively pristine area is both large and mostly unfragmented, which fulfills a fundamental tenet of conservation biology³. The need for large contiguous areas of natural habitat in order to maintain critical ecological processes has been emphasized by many conservation biologists⁴.

In addition to being a large single expanse of land, the Santa Monica Mountains ecosystem is still connected, albeit somewhat tenuously, to adjacent, more inland ecosystems⁵. Connectivity among habitats within an ecosystem and connectivity among ecosystems is very important for the preservation of species and ecosystem integrity. In a recent statewide report, the California Resources Agency⁶ identified wildlife corridors and habitat connectivity as the top conservation priority. In a letter to governor Gray Davis, sixty leading environmental scientists have endorsed the

¹ National Park Service. 2000. Draft general management plan & environmental impact statement. Santa Monica Mountains National Recreation Area – California.

² Ibid.

³ Harris, L. D. 1988. Edge effects and conservation of biotic diversity. *Conserv. Biol.* 330-332. Soule, M. E., D. T. Bolger, A. C. Alberts, J. Wright, M. Sorice and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. *Conserv. Biol.* 2: 75-92. Yahner, R. H. 1988. Changes in wildlife communities near edges. *Conserv. Biol.* 2:333-339. Murphy, D. D. 1989. Conservation and confusion: Wrong species, wrong scale, wrong conclusions. *Conservation Biol.* 3:82-84.

⁴ Crooks, K. 2000. Mammalian carnivores as target species for conservation in Southern California. p. 105-112 in: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Sauvajot, R. M., E. C. York, T. K. Fuller, H. Sharon Kim, D. A. Kamradt and R. K. Wayne. 2000. Distribution and status of carnivores in the Santa Monica Mountains, California: Preliminary results from radio telemetry and remote camera surveys. p 113-123 in: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Beier, P. and R. F. Noss. 1998. Do habitat corridors provide connectivity? *Conserv. Biol.* 12:1241-1252. Beier, P. 1996. Metapopulation models, tenacious tracking and cougar conservation. In: *Metapopulations and Wildlife Conservation*, ed. D. R. McCullough. Island Press, Covelo, California, 429p.

⁵ The SMM area is linked to larger natural inland areas to the north through two narrow corridors: 1) the Conejo Grade connection at the west end of the Mountains and 2) the Simi Hills connection in the central region of the SMM (from Malibu Creek State Park to the Santa Susanna Mountains).

⁶ California Resources Agency. 2001. Missing Linkages: Restoring Connectivity to the California Landscape. California Wilderness Coalition, Calif. Dept of Parks & Recreation, USGS, San Diego Zoo and The Nature Conservancy. Available at: <http://www.calwild.org/pubs/reports/linkages/index.htm>

conclusions of that report⁷. The chief of natural resources at the California Department of Parks and Recreation has identified the Santa Monica Mountains as an area where maintaining connectivity is particularly important⁸.

The species most directly affected by large scale connectivity are those that require large areas or a variety of habitats, e.g., gray fox, cougar, bobcat, badger, steelhead trout, and mule deer⁹. Large terrestrial predators are particularly good indicators of habitat connectivity and of the general health of the ecosystem¹⁰. Recent studies show that the mountain lion, or cougar, is the most sensitive indicator species of habitat fragmentation, followed by the spotted skunk and the bobcat¹¹. Sightings of cougars in both inland and coastal areas of the Santa Monica Mountains¹² demonstrate their continued presence. Like the "canary in the mineshaft," an indicator species like this is good evidence that habitat connectivity and large scale ecological function remains in the Santa Monica Mountains ecosystem.

The habitat integrity and connectivity that is still evident within the Santa Monica Mountains is extremely important to maintain, because both theory and experiments over 75 years in ecology confirm that large spatially connected habitats tend to be more stable and have less frequent extinctions than habitats without extended spatial structure¹³. Beyond simply destabilizing the ecosystem, fragmentation and disturbance

⁷ Letters received and included in the September 2002 staff report for the Malibu LCP.

⁸ Schoch, D. 2001. Survey lists 300 pathways as vital to state wildlife. Los Angeles Times. August 7, 2001.

⁹ Martin, G. 2001. Linking habitat areas called vital for survival of state's wildlife Scientists map main migration corridors. San Francisco Chronicle, August 7, 2001.

¹⁰ Noss, R. F., H. B. Quigley, M. G. Hornocker, T. Merrill and P. C. Paquet. 1996. Conservation biology and carnivore conservation in the Rocky Mountains. *Conserv. Biol.* 10: 949-963. Noss, R. F. 1995. Maintaining ecological integrity in representative reserve networks. World Wildlife Fund Canada.

¹¹ Sauvajot, R. M., E. C. York, T. K. Fuller, H. Sharon Kim, D. A. Kamradt and R. K. Wayne. 2000. Distribution and status of carnivores in the Santa Monica Mountains, California: Preliminary results from radio telemetry and remote camera surveys. p 113-123 in: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Beier, P. 1996. Metapopulation models, tenacious tracking and cougar conservation. In: *Metapopulations and Wildlife Conservation*, ed. D. R. McCullough. Island Press, Covelo, California, 429p.

¹² Recent sightings of mountain lions include: Temescal Canyon (pers. com., Peter Brown, Facilities Manager, Calvary Church), Topanga Canyon (pers. com., Marti Witter, NPS), Encinal and Trancas Canyons (pers. com., Pat Healy), Stump Ranch Research Center (pers. com., Dr. Robert Wayne, Dept. of Biology, UCLA). In May of 2002, the NPS *photographed* a mountain lion at a trip camera on the Back Bone Trail near Castro Crest – Seth Riley, Eric York and Dr. Ray Sauvajot, National Park Service, SMMNRA.

¹³ Gause, G. F. 1934. The struggle for existence. Baltimore, William and Wilkins 163 p. (also reprinted by Hafner, N.Y. 1964). Gause, G. F., N. P. Smaragdova and A. A. Witt. 1936. Further studies of interaction between predators and their prey. *J. Anim. Ecol.* 5:1-18. Huffaker, C. B. 1958. Experimental studies on predation: dispersion factors and predator-prey oscillations. *Hilgardia* 27:343-383. Luckinbill, L. S. 1973. Coexistence in laboratory populations of *Paramecium aurelia* and its predator *Didinium nasutum*. *Ecology* 54:1320-1327. Allen, J. C., C. C. Brewster and D. H. Slone. 2001. Spatially explicit ecological models: A spatial convolution approach. *Chaos, Solitons and Fractals.* 12:333-347.

can even cause unexpected and irreversible changes to new and completely different kinds of ecosystems (habitat conversion)¹⁴.

As a result of the pristine nature of large areas of the Santa Monica Mountains and the existence of large, unfragmented and interconnected blocks of habitat, this ecosystem continues to support an extremely diverse flora and fauna. The observed diversity is probably a function of the diversity of physical habitats. The Santa Monica Mountains have the greatest geological diversity of all major mountain ranges within the transverse range province. According to the National Park Service, the Santa Monica Mountains contain 40 separate watersheds and over 170 major streams with 49 coastal outlets¹⁵. These streams are somewhat unique along the California coast because of their topographic setting. As a "transverse" range, the Santa Monica Mountains are oriented in an east-west direction. As a result, the south-facing riparian habitats have more variable sun exposure than the east-west riparian corridors of other sections of the coast. This creates a more diverse moisture environment and contributes to the higher biodiversity of the region. The many different physical habitats of the Santa Monica Mountains support at least 17 native vegetation types¹⁶ including the following habitats considered sensitive by the California Department of Fish and Game: native perennial grassland, coastal sage scrub, red-shank chaparral, valley oak woodland, walnut woodland, southern willow scrub, southern cottonwood-willow riparian forest, sycamore-alder woodland, oak riparian forest, coastal salt marsh, and freshwater marsh. Over 400 species of birds, 35 species of reptiles and amphibians, and more than 40 species of mammals have been documented in this diverse ecosystem. More than 80 sensitive species of plants and animals (listed, proposed for listing, or species of concern) are known to occur or have the potential to occur within the Santa Monica Mountains Mediterranean ecosystem.

The Santa Monica Mountains are also important in a larger regional context. Several recent studies have concluded that the area of southern California that includes the Santa Monica Mountains is among the most sensitive in the world in terms of the number of rare endemic species, endangered species and habitat loss. These studies have designated the area to be a local hot-spot of endangerment in need of special protection¹⁷.

Therefore, the Commission finds that the Santa Monica Mountains ecosystem is itself rare and especially valuable because of its special nature as the largest, most pristine,

¹⁴ Scheffer, M., S. Carpenter, J. A. Foley, C. Folke and B. Walker. 2001. Catastrophic shifts in ecosystems. *Nature* 413:591-596.

¹⁵ NPS. 2000. op.cit.

¹⁶ From the NPS report (2000 op. cit.) that is based on the older Holland system of subjective classification. The data-driven system of Sawyer and Keeler-Wolf results in a much larger number of distinct "alliances" or vegetation types.

¹⁷ Myers, N. 1990. The biodiversity challenge: Expanded hot-spots analysis. *Environmentalist* 10:243-256. Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. A. B. da Fonseca and J. A. Kent. 2000. Biodiversity hot-spots for conservation priorities. *Nature* 403:853-858. Dobson, A. P., J. P. Rodriguez, W. M. Roberts and D. S. Wilcove. 1997. Geographic distribution of endangered species in the United States. *Science* 275:550-553.

physically complex, and biologically diverse example of a Mediterranean ecosystem in coastal southern California. The Commission further finds that because of the rare and special nature of the Santa Monica Mountains ecosystem, the ecosystem roles of substantially intact areas of the constituent plant communities discussed below are "especially valuable" under the Coastal Act.

Major Habitats within the Santa Monica Mountains

The most recent vegetation map that is available for the Santa Monica Mountains is the map that was produced for the National Park Service in the mid-1990s using 1993 satellite imagery supplemented with color and color infrared aerial imagery from 1984, 1988, and 1994 and field review¹⁸. The minimum mapping unit was 5 acres. For that map, the vegetation was mapped in very broad categories, generally following a vegetation classification scheme developed by Holland¹⁹. Because of the mapping methods used the degree of plant community complexity in the landscape is not represented. For example, the various types of "ceanothus chaparral" that have been documented were lumped under one vegetation type referred to as "northern mixed chaparral." Dr. Todd Keeler-Wolf of the California Department of Fish and Game is currently conducting a more detailed, quantitative vegetation survey of the Santa Monica Mountains.

The National Park Service map can be used to characterize broadly the types of plant communities present. The main generic plant communities present in the Santa Monica Mountains²⁰ are: coastal sage scrub, chaparral, riparian woodland, coast live oak woodland, and grasslands.

Riparian Woodland

Some 49 streams connect inland areas with the coast, and there are many smaller drainages as well, many of which are "blue line." Riparian woodlands occur along both perennial and intermittent streams in nutrient-rich soils. Partly because of its multi-layered vegetation, the riparian community contains the greatest overall biodiversity of all the plant communities in the area²¹. At least four types of riparian communities are discernable in the Santa Monica Mountains: walnut riparian areas, mulefat-dominated riparian areas, willow riparian areas and sycamore riparian woodlands. Of these, the

¹⁸ Franklin, J. 1997. Forest Service Southern California Mapping Project, Santa Monica Mountains National Recreation Area, Task 11 Description and Results, Final Report. June 13, 1997, Dept. of Geography, San Diego State University, USFS Contract No. 53-91S8-3-TM45.

¹⁹ Holland R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, Dept. of Fish and Game, Natural Heritage Division, Sacramento, CA. 95814.

²⁰ National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000. (Fig. 11 in this document.)

²¹ Ibid.

sycamore riparian woodland is the most diverse riparian community in the area. In these habitats, the dominant plant species include arroyo willow, California black walnut, sycamore, coast live oak, Mexican elderberry, California bay laurel, and mule fat. Wildlife species that have been observed in this community include least Bell's vireo (a State and federally listed species), American goldfinches, black phoebes, warbling vireos, bank swallows (State listed threatened species), song sparrows, belted kingfishers, raccoons, and California and Pacific tree frogs.

Riparian communities are the most species-rich to be found in the Santa Monica Mountains. Because of their multi-layered vegetation, available water supply, vegetative cover and adjacency to shrubland habitats, they are attractive to many native wildlife species, and provide essential functions in their lifecycles²². During the long dry summers in this Mediterranean climate, these communities are an essential refuge and oasis for much of the areas' wildlife.

Riparian habitats and their associated streams form important connecting links in the Santa Monica Mountains. These habitats connect all of the biological communities from the highest elevation chaparral to the sea with a unidirectional flowing water system, one function of which is to carry nutrients through the ecosystem to the benefit of many different species along the way.

The streams themselves provide refuge for sensitive species including: the coast range newt, the Pacific pond turtle, and the steelhead trout. The coast range newt and the Pacific pond turtle are California Species of Special Concern and are proposed for federal listing²³, and the steelhead trout is federally endangered. The health of the streams is dependent on the ecological functions provided by the associated riparian woodlands. These functions include the provision of large woody debris for habitat, shading that controls water temperature, and input of leaves that provide the foundation of the stream-based trophic structure.

The importance of the connectivity between riparian areas and adjacent habitats is illustrated by the Pacific pond turtle and the coast range newt, both of which are sensitive and both of which require this connectivity for their survival. The life history of the Pacific pond turtle demonstrates the importance of riparian areas and their associated watersheds for this species. These turtles require the stream habitat during the wet season. However, recent radio tracking work²⁴ has found that although the Pacific pond turtle spends the wet season in streams, it also requires upland habitat for refuge during the dry season. Thus, in coastal southern California, the Pacific pond turtle requires both streams and intact adjacent upland habitats such as coastal sage

²² Walter, Hartmut. Bird use of Mediterranean habitats in the Santa Monica Mountains, Coastal Commission Workshop on the Significance of Native Habitats in the Santa Monica Mountains. CCC Hearing, June 13, 2002, Queen Mary Hotel.

²³ USFWS. 1989. Endangered and threatened wildlife and plants; animal notice of review. Fed. Reg. 54:554-579. USFWS. 1993. Endangered and threatened wildlife and plants; notice of 1-year petition finding on the western pond turtle. Fed. Reg. 58:42717-42718.

²⁴ Rathbun, G.B., N.J. Scott and T.G. Murphy. 2002. Terrestrial habitat use by Pacific pond turtle in a Mediterranean climate. *Southwestern Naturalist*. (in Press).

scrub, woodlands or chaparral as part of their normal life cycle. The turtles spend about four months of the year in upland refuge sites located an average distance of 50 m (but up to 280 m) from the edge of the creek bed. Similarly, nesting sites where the females lay eggs are also located in upland habitats an average of 30 m (but up to 170 m) from the creek. Occasionally, these turtles move up to 2 miles across upland habitat²⁵. Like many species, the pond turtle requires both stream habitats and the upland habitats of the watershed to complete its normal annual cycle of behavior. Similarly, the coast range newt has been observed to travel hundreds of meters into upland habitat and spend about ten months of the year far from the riparian streambed²⁶. They return to the stream to breed in the wet season, and they are therefore another species that requires both riparian habitat and adjacent uplands for their survival.

Riparian habitats in California have suffered serious losses and such habitats in southern California are currently very rare and seriously threatened. In 1989, Faber estimated that 95-97% of riparian habitat in southern California was already lost²⁷. Writing at the same time as Faber, Bowler asserted that, "[t]here is no question that riparian habitat in southern California is endangered."²⁸ In the intervening 13 years, there have been continuing losses of the small amount of riparian woodlands that remain. Today these habitats are, along with native grasslands and wetlands, among the most threatened in California.

In addition to direct habitat loss, streams and riparian areas have been degraded by the effects of development. For example, the coast range newt, a California Species of Special Concern has suffered a variety of impacts from human-related disturbances²⁹. Human-caused increased fire frequency has resulted in increased sedimentation rates, which exacerbates the cannibalistic predation of adult newts on the larval stages.³⁰ In addition impacts from non-native species of crayfish and mosquito fish have also been documented. When these non-native predators are introduced, native prey organisms are exposed to new mortality pressures for which they are not adapted. Coast range newts that breed in the Santa Monica Mountain streams do not appear to have adaptations that permit co-occurrence with introduced mosquito fish and crayfish³¹. These introduced predators have eliminated the newts from streams where they previously occurred by both direct predation and suppression of breeding.

²⁵ Testimony by R. Dagit, Resource Conservation District of the Santa Monica Mountains at the CCC Habitat Workshop on June 13, 2002.

²⁶ Dr. Lee Kats, Pepperdine University, personal communication to Dr J. Allen, CCC.

²⁷ Faber, P.A., E. Keller, A. Sands and B.M. Massey. 1989. The ecology of riparian habitats of the southern California coastal region: a community profile. U.S. Fish and Wildlife Service Biological Report 85(7.27) 152pp.

²⁸ Bowler, P.A. 1989. Riparian woodland: An endangered habitat in southern California. Pp 80-97 in Schoenherr, A.A. (ed.) Endangered plant communities of southern California. Botanists Special Publication No. 3.

²⁹ Gamradt, S.C., L.B. Kats and C.B. Anzalone. 1997. Aggression by non-native crayfish deters breeding in California newts. *Conservation Biology* 11(3):793-796.

³⁰ Kerby, L.J., and L.B. Kats. 1998. Modified interactions between salamander life stages caused by wildfire-induced sedimentation. *Ecology* 79(2):740-745.

³¹ Gamradt, S.C. and L.B. Kats. 1996. Effect of introduced crayfish and mosquitofish on California newts. *Conservation Biology* 10(4):1155-1162.

Therefore, because of the essential role that riparian plant communities play in maintaining the biodiversity of the Santa Monica Mountains, because of the historical losses and current rarity of these habitats in southern California, and because of their extreme sensitivity to disturbance, the native riparian habitats in the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

Coastal Sage Scrub and Chaparral

Coastal sage scrub and chaparral are often lumped together as "shrublands" because of their roughly similar appearance and occurrence in similar and often adjacent physical habitats. In earlier literature, these vegetation associations were often called soft chaparral and hard chaparral, respectively. "Soft" and "hard" refers to differences in their foliage associated with different adaptations to summer drought. Coastal sage scrub is dominated by soft-leaved, generally low-growing aromatic shrubs that die back and drop their leaves in response to drought. Chaparral is dominated by taller, deeper-rooted evergreen shrubs with hard, waxy leaves that minimize water loss during drought.

The two vegetation types are often found interspersed with each other. Under some circumstances, coastal sage scrub may even be successional to chaparral, meaning that after disturbance, a site may first be covered by coastal sage scrub, which is then replaced with chaparral over long periods of time.³² The existing mosaic of coastal sage scrub and chaparral is the result of a dynamic process that is a function of fire history, recent climatic conditions, soil differences, slope, aspect and moisture regime, and the two habitats should not be thought of as completely separate and unrelated entities but as different phases of the same process³³. The spatial pattern of these vegetation stands at any given time thus depends on both local site conditions and on history (e.g., fire), and is influenced by both natural and human factors.

In lower elevation areas with high fire frequency, chaparral and coastal sage scrub may be in a state of flux, leading one researcher to describe the mix as a "coastal sage-chaparral subclimax."³⁴ Several other researchers have noted the replacement of chaparral by coastal sage scrub, or coastal sage scrub by chaparral depending on fire history.³⁵ In transitional and other settings, the mosaic of chaparral and coastal sage

³² Cooper, W.S. 1922. The broad-sclerophyll vegetation of California. Carnegie Institution of Washington Publication 319. 124 pp.

³³ Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. (See attached comment document in Appendix).

³⁴ Hanes, T.L. 1965. Ecological studies on two closely related chaparral shrubs in southern California. Ecological Monographs 41:27-52.

³⁵ Gray, K.L. 1983. Competition for light and dynamic boundary between chaparral and coastal sage scrub. Madrono 30(1):43-49. Zedler, P.H., C.R. Gautier and G.S. McMaster. 1983. Vegetation change in response to extreme events: The effect of a short interval between fires in California chaparral and coastal sage scrub. Ecology 64(4): 809-818.

scrub enriches the seasonal plant resource base and provides additional habitat variability and seasonality for the many species that inhabit the area.

Relationships Among Coastal Sage Scrub, Chaparral and Riparian Communities

Although the constituent communities of the Santa Monica Mountains Mediterranean ecosystem can be defined and distinguished based on species composition, growth habits, and the physical habitats they characteristically occupy, they are not independent entities ecologically. Many species of plants, such as black sage, and laurel sumac, occur in more than one plant community and many animals rely on the predictable mix of communities found in undisturbed Mediterranean ecosystems to sustain them through the seasons and during different portions of their life histories.

Strong evidence for the interconnectedness between chaparral, coastal scrub and other habitats is provided by "opportunistic foragers" (animals that follow the growth and flowering cycles across these habitats). Coastal scrub and chaparral flowering and growth cycles differ in a complimentary and sequential way that many animals have evolved to exploit. Whereas coastal sage scrub is shallow-rooted and responds quickly to seasonal rains, chaparral plants are typically deep-rooted having most of their flowering and growth later in the rainy season after the deeper soil layers have been saturated³⁶. New growth of chaparral evergreen shrubs takes place about four months later than coastal sage scrub plants and it continues later into the summer³⁷. For example, in coastal sage scrub, California sagebrush flowers and grows from August to February and coyote bush flowers from August to November³⁸. In contrast, chamise chaparral and bigpod ceanothus flower from April to June, buck brush ceanothus flowers from February to April, and hoaryleaf ceanothus flowers from March to April.

Many groups of animals exploit these seasonal differences in growth and blooming period. The opportunistic foraging insect community (e.g., honeybees, butterflies and moths) tends to follow these cycles of flowering and new growth, moving from coastal sage scrub in the early rainy season to chaparral in the spring³⁹. The insects in turn are followed by insectivorous birds such as the blue-gray gnatcatcher⁴⁰, bushtit, cactus wren, Bewick's wren and California towhee. At night bats take over the role of daytime insectivores. At least 12 species of bats (all of which are considered sensitive) occur in

³⁶ DeSimone, S. 2000. California's coastal sage scrub. *Fremontia* 23(4):3-8. Mooney, H.A. 1988. Southern coastal scrub. Chap. 13 in Barbour, M.G. and J. Majors; Eds. 1988. *Terrestrial vegetation of California*, 2nd Edition. Calif. Native Plant Soc. Spec. Publ. #9.

³⁷ Schoenherr, A. A. 1992. *A natural history of California*. University of California Press, Berkeley. 772p.

³⁸ Dale, N. 2000. Flowering plants of the Santa Monica Mountains. California Native Plant Society, 1722 J Street, Suite 17, Sacramento, CA 95814.

³⁹ Ballmer, G. R. 1995. What's bugging coastal sage scrub. *Fremontia* 23(4):17-26.

⁴⁰ Root, R. B. 1967. The niche exploitation pattern of the blue-gray gnatcatcher. *Ecol. Monog.* 37:317-350.

the Santa Monica Mountains⁴¹. Five species of hummingbirds also follow the flowering cycle⁴².

Many species of 'opportunistic foragers', which utilize several different community types, perform important ecological roles during their seasonal movements. The scrub jay is a good example of such a species. The scrub jay is an omnivore and forages in coastal sage scrub, chaparral, and oak woodlands for insects, berries and notably acorns. Its foraging behavior includes the habit of burying acorns, usually at sites away from the parent tree canopy. Buried acorns have a much better chance of successful germination (about two-fold) than exposed acorns because they are protected from desiccation and predators. One scrub jay will bury approximately 5000 acorns in a year. The scrub jay therefore performs the function of greatly increasing recruitment and regeneration of oak woodland, a valuable and sensitive habitat type⁴³.

Like the scrub jay, most of the species of birds that inhabit the Mediterranean ecosystem in the Santa Monica Mountains require more than one community type in order to flourish. Many species include several community types in their daily activities. Other species tend to move from one community to another seasonally. The importance of maintaining the integrity of the multi-community ecosystem is clear in the following observations of Dr. Hartmut Walter of the University of California at Los Angeles:

"Bird diversity is directly related to the habitat mosaic and topographic diversity of the Santa Monicas. Most bird species in this bio-landscape require more than one habitat for survival and reproduction." "A significant proportion of the avifauna breeds in the wooded canyons of the Santa Monicas. Most of the canyon breeders forage every day in the brush- and grass-covered slopes, ridges and mesas. They would not breed in the canyons in the absence of the surrounding shrublands. Hawks, owls, falcons, orioles, flycatchers, woodpeckers, warblers, hummingbirds, etc. belong to this group. Conversely, some of the characteristic chaparral birds such as thrashers, quails, and wrentits need the canyons for access to shelter, protection from fire, and water. The regular and massive movement of birds between riparian corridors and adjacent shrublands has been demonstrated by qualitative and quantitative observations by several UCLA students⁴⁴."

Thus, the Mediterranean ecosystem of the Santa Monica Mountains is a mosaic of vegetation types linked together ecologically. The high biodiversity of the area results

⁴¹ Letter from Dr. Marti Witter, NPS, dated Sept. 13, 2001, in letters received and included in the September 2002 staff report for the Malibu LCP.

⁴² National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701

⁴³ Borchert, M. I., F. W. Davis, J. Michaelsen and L. D. Oyler. 1989. Interactions of factors affecting seedling recruitment of blue oak (*Quercus douglasii*) in California. *Ecology* 70:389-404. Bossema, I. 1979. Jays and oaks: An eco-ethological study of a symbiosis. *Behavior* 70:1-118. Schoenherr, A. A. 1992. A natural history of California. University of California Press, Berkeley. 772p.

⁴⁴ Walter, Hartmut. Bird use of Mediterranean habitats in the Santa Monica Mountains, Coastal Commission Workshop on the Significance of Native Habitats in the Santa Monica Mountains. CCC Hearing, June 13, 2002, Queen Mary Hotel.

from both the diversity and the interconnected nature of this mosaic. Most raptor species, for example, require large areas and will often require different habitats for perching, nesting and foraging. Fourteen species of raptors (13 of which are considered sensitive) are reported from the Santa Monica Mountains. These species utilize a variety of habitats including rock outcrops, oak woodlands, riparian areas, grasslands, chaparral, coastal sage scrub, estuaries and freshwater lakes⁴⁵.

When the community mosaic is disrupted and fragmented by development, many chaparral-associated native bird species are impacted. In a study of landscape-level fragmentation in the Santa Monica Mountains, Stralberg⁴⁶ found that the ash-throated flycatcher, Bewick's wren, wrentit, blue-gray gnatcatcher, California thrasher, orange-crowned warbler, rufous-crowned sparrow, spotted towhee, and California towhee all decreased in numbers as a result of urbanization. Soule⁴⁷ observed similar effects of fragmentation on chaparral and coastal sage scrub birds in the San Diego area.

In summary, all of the vegetation types in this ecosystem are strongly linked by animal movement and foraging. Whereas classification and mapping of vegetation types may suggest a snapshot view of the system, the seasonal movements and foraging of animals across these habitats illustrates the dynamic nature and vital connections that are crucial to the survival of this ecosystem.

Coastal Sage Scrub

"Coastal sage scrub" is a generic vegetation type that is inclusive of several subtypes⁴⁸. In the Santa Monica Mountains, coastal sage scrub is mostly of the type termed "Venturan Coastal Sage Scrub." In general, coastal sage scrub is comprised of dominant species that are semi-woody and low-growing, with shallow, dense roots that enable them to respond quickly to rainfall. Under the moist conditions of winter and spring, they grow quickly, flower, and produce light, wind-dispersed seeds, making them good colonizers following disturbance. These species cope with summer drought by dying back, dropping their leaves or producing a smaller summer leaf in order to reduce water loss. Stands of coastal sage scrub are much more open than chaparral and contain a greater admixture of herbaceous species. Coastal sage scrub is generally restricted to drier sites, such as low foothills, south-facing slopes, and shallow soils at higher elevations.

⁴⁵ National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701. and Letter from Dr. Marti Witter, NPS, Dated Sept. 13, 2001, in letters received and included in the September 2002 staff report for the Malibu LCP.

⁴⁶ Stralberg, D. 2000. Landscape-level urbanization effects on chaparral birds: A Santa Monica Mountains case study. p 125-136 in: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62.

⁴⁷ Soule, M. E, D. T. Bolger, A. C. Alberts, J. Wright, M. Soric and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. *Conserv. Biol.* 2: 75-92.

⁴⁸ Kirkpatrick, J.B. and C.F. Hutchinson. 1977. The community composition of Californian coastal sage scrub. *Vegetatio* 35:21-33; Holland, 1986. op.cit.; Sawyer and Keeler-Wolf, 1995, op.cit.

The species composition and structure of individual stands of coastal sage scrub depend on moisture conditions that derive from slope, aspect, elevation and soil type. Drier sites are dominated by more drought-resistant species (e.g., California sagebrush, coast buckwheat, and *Opuntia* cactus). Where more moisture is available (e.g., north-facing slopes), larger evergreen species such as toyon, laurel sumac, lemonade berry, and sugar bush are common. As a result, there is more cover for wildlife, and movement of large animals from chaparral into coastal sage scrub is facilitated in these areas. Characteristic wildlife in this community includes Anna's hummingbirds, rufous-sided towhees, California quail, greater roadrunners, Bewick's wrens, coyotes, and coast horned lizards⁴⁹, but most of these species move between coastal sage scrub and chaparral during their daily activities or on a seasonal basis.

Of the many important ecosystem roles performed by the coastal sage scrub community, five are particularly important in the Santa Monica Mountains. Coastal sage scrub provides critical linkages between riparian corridors, provides essential habitat for species that require several habitat types during the course of their life histories, provides essential habitat for local endemics, supports rare species that are in danger of extinction, and reduces erosion, thereby protecting the water quality of coastal streams.

Riparian woodlands are primary contributors to the high biodiversity of the Santa Monica Mountains. The ecological integrity of those riparian habitats not only requires wildlife dispersal along the streams, but also depends on the ability of animals to move from one riparian area to another. Such movement requires that the riparian corridors be connected by suitable habitat. In the Santa Monica Mountains, coastal sage scrub and chaparral provide that function. Significant development in coastal sage scrub would reduce the riparian corridors to linear islands of habitat with severe edge effects⁵⁰, reduced diversity, and lower productivity.

Most wildlife species and many species of plants utilize several types of habitat. Many species of animals endemic to Mediterranean habitats move among several plant communities during their daily activities and many are reliant on different communities either seasonally or during different stages of their life cycle. Without an intact mosaic of coastal sage scrub, chaparral, and riparian community types, many species will not thrive. Specific examples of the importance of interconnected communities, or habitats, were provided in the discussion above. This is an essential ecosystem role of coastal sage scrub.

A characteristic of the coastal sage scrub vegetation type is a high degree of endemism. This is consonant with Westman's observation that 44 percent of the species he sampled in coastal sage scrub occurred at only one of his 67 sites, which were

⁴⁹ National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000.

⁵⁰ Environmental impacts are particularly severe at the interface between development and natural habitats. The greater the amount of this "edge" relative to the area of natural habitat, the worse the impact.

distributed from the San Francisco Bay area to Mexico⁵¹. Species with restricted distributions are by nature more susceptible to loss or degradation of their habitat. Westman said of this unique and local aspect of coastal sage scrub species in California:

"While there are about 50 widespread sage scrub species, more than half of the 375 species encountered in the present study of the sage scrub flora are rare in occurrence within the habitat range. In view of the reduction of the area of coastal sage scrub in California to 10-15% of its former extent and the limited extent of preserves, measures to conserve the diversity of the flora are needed."⁵²

Coastal sage scrub in southern California provides habitat for about 100 rare species⁵³, many of which are also endemic to limited geographic regions⁵⁴. In the Santa Monica Mountains, rare animals that inhabit coastal sage scrub⁵⁵ include the Santa Monica shieldback katydid, silvery legless lizard, coastal cactus wren, Bell's sparrow, San Diego desert woodrat, southern California rufous-crowned sparrow, coastal western whiptail, and San Diego horned lizard. Some of these species are also found in chaparral⁵⁶. Rare plants found in coastal sage scrub in the Santa Monica Mountains include Santa Susana tarplant, Coulter's saltbush, Blockman's dudleya, Braunton's milkvetch, Parry's spineflower, and Plummer's mariposa lily⁵⁷. A total of 32 sensitive species of reptiles, birds and mammals have been identified in this community by the National Park Service.⁵⁸

One of the most important ecological functions of coastal sage scrub in the Santa Monica Mountains is to protect water quality in coastal streams by reducing erosion in the watershed. Although shallow rooted, the shrubs that define coastal sage scrub have dense root masses that hold the surface soils much more effectively than the exotic annual grasses and forbs that tend to dominate in disturbed areas. The native shrubs of this community are resistant not only to drought, as discussed above, but well adapted to fire. Most of the semi-woody shrubs have some ability to crown sprout after

⁵¹ Westman, W.E. 1981. Diversity relations and succession in Californian coastal sage scrub. *Ecology* 62:170-184.

⁵² Ibid.

⁵³ Atwood, J. L. 1993. California gnatcatchers and coastal sage scrub: The biological basis for endangered species listing. pp.149-166 *In: Interface Between Ecology and Land Development in California*. Ed. J. E. Keeley, So. Calif. Acad. of Sci., Los Angeles. California Department of Fish and Game (CDFG). 1993. The Southern California Coastal Sage Scrub (CSS) Natural Communities Conservation Plan (NCCP). CDFG and Calif. Resources Agency, 1416 9th St., Sacramento, CA 95814.

⁵⁴ Westman, W.E. 1981. *op. cit.*

⁵⁵ Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.

⁵⁶ O'Leary J.F., S.A. DeSimone, D.D. Murphy, P.F. Brussard, M.S. Gilpin, and R.F. Noss. 1994. Bibliographies on coastal sage scrub and related malacophyllous shrublands of other Mediterranean-type climates. *California Wildlife Conservation Bulletin* 10:1-51.

⁵⁷ Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.

⁵⁸ NPS, 2000, *op. cit.*

fire. Several CSS species (e.g., *Eriogonum cinereum*) in the Santa Monica Mountains and adjacent areas resprout vigorously and other species growing near the coast demonstrate this characteristic more strongly than do individuals of the same species growing at inland sites in Riverside County.⁵⁹ These shrub species also tend to recolonize rapidly from seed following fire. As a result they provide persistent cover that reduces erosion.

In addition to performing extremely important roles in the Mediterranean ecosystem, the coastal sage scrub community type has been drastically reduced in area by habitat loss to development. In the early 1980's it was estimated that 85 to 90 percent of the original extent of coastal sage scrub in California had already been destroyed.⁶⁰ Losses since that time have been significant and particularly severe in the coastal zone.

Therefore, because of its increasing rarity, its important role in the functioning of the Santa Monica Mountains Mediterranean ecosystem, and its extreme vulnerability to development, coastal sage scrub within the Santa Monica Mountains meets the definition of ESHA under the Coastal Act.

Chaparral

Another shrub community in the Santa Monica Mountain Mediterranean ecosystem is chaparral. Like "coastal sage scrub," this is a generic category of vegetation. Chaparral species have deep roots (10s of ft) and hard waxy leaves, adaptations to drought that increase water supply and decrease water loss at the leaf surface. Some chaparral species cope more effectively with drought conditions than do desert plants⁶¹. Chaparral plants vary from about one to four meters tall and form dense, intertwining stands with nearly 100 percent ground cover. As a result, there are few herbaceous species present in mature stands. Chaparral is well adapted to fire. Many species regenerate mainly by crown sprouting; others rely on seeds which are stimulated to germinate by the heat and ash from fires. Over 100 evergreen shrubs may be found in chaparral⁶². On average, chaparral is found in wetter habitats than coastal sage scrub, being more common at higher elevations and on north facing slopes.

The broad category "northern mixed chaparral" is the major type of chaparral shown in the National Park Service map of the Santa Monica Mountains. However, northern mixed chaparral can be variously dominated by chamise, scrub oak or one of several species of manzanita or by ceanothus. In addition, it commonly contains woody vines and large shrubs such as mountain mahogany, toyon, hollyleaf redberry, and sugarbush⁶³. The rare red shank chaparral plant community also occurs in the Santa Monica Mountains. Although included within the category "northern mixed chaparral" in

⁵⁹ Dr. John O'Leary, SDSU, personal communication to Dr. John Dixon, CCC, July 2, 2002

⁶⁰ Westman, W.E. 1981. op. cit.

⁶¹ Dr. Stephen Davis, Pepperdine University. Presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.

⁶² Keely, J.E. and S.C. Keeley. Chaparral. Pages 166-207 in M.G. Barbour and W.D. Billings, eds. North American Terrestrial Vegetation. New York, Cambridge University Press.

⁶³ Ibid.

the vegetation map, several types of ceanothus chaparral are reported in the Santa Monica Mountains. Ceanothus chaparral occurs on stable slopes and ridges, and may be dominated by bigpod ceanothus, buck brush ceanothus, hoaryleaf ceanothus, or greenbark ceanothus. In addition to ceanothus, other species that are usually present in varying amounts are chamise, black sage, holly-leaf redberry, sugarbush, and coast golden bush⁶⁴.

Several sensitive plant species that occur in the chaparral of the Santa Monica Mountains area are: Santa Susana tarplant, Lyon's pentachaeta, marcescent dudleya, Santa Monica Mountains dudleya, Braunton's milk vetch and salt spring checkerbloom⁶⁵. Several occurring or potentially occurring sensitive animal species in chaparral from the area are: Santa Monica shieldback katydid, western spadefoot toad, silvery legless lizard, San Bernardino ring-neck snake, San Diego mountain kingsnake, coast patch-nosed snake, sharp-shinned hawk, southern California rufous-crowned sparrow, Bell's sparrow, yellow warbler, pallid bat, long-legged myotis bat, western mastiff bat, and San Diego desert woodrat.⁶⁶

Coastal sage scrub and chaparral are the predominant generic community types of the Santa Monica Mountains and provide the living matrix within which rarer habitats like riparian woodlands exist. These two shrub communities share many important ecosystem roles. Like coastal sage scrub, chaparral within the Santa Monica Mountains provides critical linkages among riparian corridors, provides essential habitat for species that require several habitat types during the course of their life histories, provides essential habitat for sensitive species, and stabilizes steep slopes and reduces erosion, thereby protecting the water quality of coastal streams.

Many species of animals in Mediterranean habitats characteristically move among several plant communities during their daily activities, and many are reliant on different communities either seasonally or during different stages of their life cycle. The importance of an intact mosaic of coastal sage scrub, chaparral, and riparian community types is perhaps most critical for birds. However, the same principles apply to other taxonomic groups. For example, whereas coastal sage scrub supports a higher diversity of native ant species than chaparral, chaparral habitat is necessary for the coast horned lizard, an ant specialist⁶⁷. Additional examples of the importance of an interconnected communities, or habitats, were provided in the discussion of coastal sage scrub above. This is an extremely important ecosystem role of chaparral in the Santa Monica Mountains.

Chaparral is also remarkably adapted to control erosion, especially on steep slopes. The root systems of chaparral plants are very deep, extending far below the surface and

⁶⁴ Ibid.

⁶⁵ Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.

⁶⁶ Ibid.

⁶⁷ A.V. Suarez. Ants and lizards in coastal sage scrub and chaparral. A presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.

penetrating the bedrock below⁶⁸, so chaparral literally holds the hillsides together and prevents slippage.⁶⁹ In addition, the direct soil erosion from precipitation is also greatly reduced by 1) water interception on the leaves and above ground foliage and plant structures, and 2) slowing the runoff of water across the soil surface and providing greater soil infiltration. Chaparral plants are extremely resistant to drought, which enables them to persist on steep slopes even during long periods of adverse conditions. Many other species die under such conditions, leaving the slopes unprotected when rains return. Since chaparral plants recover rapidly from fire, they quickly re-exert their ground stabilizing influence following burns. The effectiveness of chaparral for erosion control after fire increases rapidly with time⁷⁰. Thus, the erosion from a 2-inch rain-day event drops from 5 yd³/acre of soil one year after a fire to 1 yd³/acre after 4 years.⁷¹ The following table illustrates the strong protective effect of chaparral in preventing erosion.

Soil erosion as a function of 24-hour precipitation and chaparral age.

Years Since Fire	Erosion (yd ³ /acre) at Maximum 24-hr Precipitation of:		
	2 inches	5 inches	11 inches
1	5	20	180
4	1	12	140
17	0	1	28
50+	0	0	3

Therefore, because of its important roles in the functioning of the Santa Monica Mountains Mediterranean ecosystem, and its extreme vulnerability to development, chaparral within the Santa Monica Mountains meets the definition of ESHA under the Coastal Act.

Oak Woodland and Savanna

Coast live oak woodland occurs mostly on north slopes, shaded ravines and canyon bottoms. Besides the coast live oak, this plant community includes hollyleaf cherry, California bay laurel, coffeeberry, and poison oak. Coast live oak woodland is more

⁶⁸ Helmers, H., J.S. Horton, G. Juhren and J. O'Keefe. 1955. Root systems of some chaparral plants in southern California. *Ecology* 36(4):667-678. Kummerow, J. and W. Jow. 1977. Root systems of chaparral shrubs. *Oecologia* 29:163-177.

⁶⁹ Radtke, K. 1983. *Living more safely in the chaparral-urban interface*. General Technical Report PSW-67. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Berkeley, California. 51 pp.

⁷⁰ Kittredge, J. 1973. *Forest influences — the effects of woody vegetation on climate, water, and soil*. Dover Publications, New York. 394 pp. Longcore, T and C. Rich. 2002. *Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains*. (Table 1). The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. Vicars, M. (ed.) 1999. *FireSmart: protecting your community from wildfire*. Partners in Protection, Edmonton, Alberta.

⁷¹ *ibid.*

tolerant of salt-laden fog than other oaks and is generally found nearer the coast⁷². Coast live oak also occurs as a riparian corridor species within the Santa Monica Mountains.

Valley oaks are endemic to California and reach their southern most extent in the Santa Monica Mountains. Valley oaks were once widely distributed throughout California's perennial grasslands in central and coastal valleys. Individuals of this species may survive 400-600 years. Over the past 150 years, valley oak savanna habitat has been drastically reduced and altered due to agricultural and residential development. The understory is now dominated by annual grasses and recruitment of seedlings is generally poor. This is a very threatened habitat.

The important ecosystem functions of oak woodlands and savanna are widely recognized⁷³. These habitats support a high diversity of birds⁷⁴, and provide refuge for many species of sensitive bats⁷⁵. Typical wildlife in this habitat includes acorn woodpeckers, scrub jays, plain titmice, northern flickers, cooper's hawks, western screech owls, mule deer, gray foxes, ground squirrels, jackrabbits and several species of sensitive bats.

Therefore, because of their important ecosystem functions and vulnerability to development, oak woodlands and savanna within the Santa Monica Mountains met the definition of ESHA under the Coastal Act.

Grasslands

Grasslands consist of low herbaceous vegetation that is dominated by grass species but may also harbor native or non-native forbs.

California Perennial Grassland

Native grassland within the Santa Monica Mountains consists of perennial native needlegrasses: purple needlegrass, (*Nassella pulchra*), foothills needlegrass, (*Nassella lepida*) and nodding needlegrass (*Nassella cernua*). These grasses may occur in the same general area but they do not typically mix, tending to segregate based on slope

⁷² NPS 2000. op. cit.

⁷³ Block, W.M., M.L. Morrison, and J. Verner. 1990. Wildlife and oak-woodland interdependency. *Fremontia* 18(3):72-76. Pavlik, B.M., P.C. Muick, S. Johnson, and M. Popper. 1991. *Oaks of California*. Cachuma Press and California Oak Foundation, Los Olivos, California. 184 pp.

⁷⁴ Cody, M.L. 1977. Birds. Pp. 223-231 in Throver, N.J.W., and D.E. Bradbury (eds.). *Chile-California Mediterranean scrub atlas*. US/IBP Synthesis Series 2. Dowden, Hutchinson & Ross, Stroudsburg, Pennsylvania. National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701

⁷⁵ Miner, K.L., and D.C. Stokes. 2000. Status, conservation issues, and research needs for bats in the south coast bioregion. Paper presented at *Planning for biodiversity: bringing research and management together*, February 29, California State University, Pomona, California.

and substrate factors⁷⁶. Mixed with these native needlegrasses are many non-native annual species that are characteristic of California annual grassland⁷⁷. Native perennial grasslands are now exceedingly rare⁷⁸. In California, native grasslands once covered nearly 20 percent of the land area, but today are reduced to less than 0.1 percent⁷⁹. The California Natural Diversity Database (CNDDDB) lists purple needlegrass habitat as a community needing priority monitoring and restoration. The CNDDDB considers grasslands with 10 percent or more cover by purple needlegrass to be significant, and recommends that these be protected as remnants of original California prairie. Patches of this sensitive habitat occur throughout the Santa Monica Mountains where they are intermingled with coastal sage scrub, chaparral and oak woodlands.

Many of the raptors that inhabit the Santa Monica Mountains make use of grasslands for foraging because they provide essential habitat for small mammals and other prey. Grasslands adjacent to woodlands are particularly attractive to these birds of prey since they simultaneously offer perching and foraging habitat. Particularly noteworthy in this regard are the white-tailed kite, northern harrier, sharp-shinned hawk, Cooper's hawk, red-shouldered hawk, red-tailed hawk, golden eagle, American kestrel, merlin, and prairie falcon⁸⁰.

Therefore, because of their extreme rarity, important ecosystem functions, and vulnerability to development, California native perennial grasslands within the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

California Annual Grassland

The term "California annual grassland" has been proposed to recognize the fact that non-native annual grasses should now be considered naturalized and a permanent feature of the California landscape and should be acknowledged as providing important ecological functions. These habitats support large populations of small mammals and provide essential foraging habitat for many species of birds of prey. California annual grassland generally consists of dominant invasive annual grasses that are primarily of Mediterranean origin. The dominant species in this community include common wild oats (*Avena fatua*), slender oat (*Avena barbata*), red brome (*Bromus madritensis* ssp. *Rubens*), ripgut brome, (*Bromus diandrus*), and herbs such as black mustard (*Brassica nigra*), wild radish (*Raphanus sativus*) and sweet fennel (*Foeniculum vulgare*). Annual grasslands are located in patches throughout the Santa Monica Mountains in previously disturbed areas, cattle pastures, valley bottoms and along roadsides. While many of

⁷⁶ Sawyer, J. O. and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, 1722 J St., Suite 17, Sacramento, CA 95814.

⁷⁷ Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.

⁷⁸ Noss, R.F., E.T. LaRoe III and J.M. Scott. 1995. Endangered ecosystems of the United States: a preliminary assessment of loss and degradation. Biological Report 28. National Biological Service, U.S. Dept. of Interior.

⁷⁹ NPS 2000. op. cit.

⁸⁰ NPS 2000. op. cit.

these patches are dominated by invasive non-native species, it would be premature to say that they are never sensitive or do not harbor valuable annual native species. A large number of native forbs also may be present in these habitats⁸¹, and many native wildflowers occur primarily in annual grasslands. In addition, annual grasslands are primary foraging areas for many sensitive raptor species in the area.

Inspection of California annual grasslands should be done prior to any impacts to determine if any rare native species are present or if any rare wildlife rely on the habitat and to determine if the site meets the Coastal Act ESHA criteria.

Effects of Human Activities and Development on Habitats within the Santa Monica Mountains

The natural habitats of the Santa Monica Mountains are highly threatened by current development pressure, fragmentation and impacts from the surrounding megalopolis. The developed portions of the Santa Monica Mountains represents the extension of this urbanization into natural areas. About 54% of the undeveloped Santa Monica Mountains are in private ownership⁸², and computer simulation studies of the development patterns over the next 25 years predict a serious increase in habitat fragmentation⁸³. Development and associated human activities have many well-documented deleterious effects on natural communities. These environmental impacts may be both direct and indirect and include the effects of increased fire frequency, of fire clearance, of introduction of exotic species, and of night lighting.

Increased Fire Frequency

Since 1925, all the major fires in the Santa Monica Mountains have been caused by human activities⁸⁴. Increased fire frequency alters plant communities by creating conditions that select for some species over others. Strong resprouting plant species such as laurel sumac, are favored while non-sprouters like bigpod ceanothus, are at a disadvantage. Frequent fire recurrence before the non-sprouters can develop and reestablish a seed bank is detrimental, so that with each fire their chances for propagation are further reduced. Resprouters can be sending up new shoots quickly, and so they are favored in an increased fire frequency regime. Also favored are weedy and invasive species. Dr. Steven Davis in his abstract for a Coastal Commission

⁸¹ Holstein, G. 2001. Pre-agricultural grassland in Central California. *Madrono* 48(4):253-264. Stromberg, M.R., P. Kephart and V. Yadon. 2001. Composition, invasibility and diversity of coastal California grasslands. *Madrono* 48(4):236-252.

⁸² National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000.

⁸³ Swenson, J. J., and J. Franklin. 2000. The effects of future urban development on habitat fragmentation in the Santa Monica Mountains. *Landscape Ecol.* 15:713-730.

⁸⁴ NPS, 2000, op. cit.

Workshop stated⁸⁵ *"We have evidence that recent increases in fire frequency has eliminated drought-hardy non-sprouters from chaparral communities near Malibu, facilitating the invasion of exotic grasses and forbs that further exacerbate fire frequency."* Thus, simply increasing fire frequency from about once every 22 years (the historical frequency) to about once every 12 years (the current frequency) can completely change the vegetation community. This has cascading effects throughout the ecosystem.

Fuel Clearance

The removal of vegetation for fire protection in the Santa Monica Mountains is required by law in "Very High Fire Hazard Severity Zones"⁸⁶. Fuel removal is reinforced by insurance carriers⁸⁷. Generally, the Santa Monica Mountains are considered to be a high fire hazard severity zone. In such high fire hazard areas, homeowners must often resort to the California FAIR Plan to obtain insurance. Because of the high risk, all homes in "brush areas" are assessed an insurance surcharge if they have less than the recommended 200-foot fuel modification zone⁸⁸ around the home. The combination of insurance incentives and regulation assures that the 200-foot clearance zone will be applied universally⁸⁹. While it is not required that all of this zone be cleared of vegetation, the common practice is simply to disk this zone, essentially removing or highly modifying all native vegetation. For a new structure not adjacent to existing structures, this results in the removal or modification of a minimum of three acres of vegetation⁹⁰. While the directly impacted area is large, the effects of fuel modification extend beyond the 200-foot clearance area.

Effects of Fuel Clearance on Bird Communities

The impacts of fuel clearance on bird communities was studied by Stralberg who identified three ecological categories of birds in the Santa Monica Mountains: 1) local and long distance migrators (ash-throated flycatcher, Pacific-slope flycatcher, phainopepla, black-headed grosbeak), 2) chaparral-associated species (Bewick's wren, wrentit, blue-gray gnatcatcher, California thrasher, orange-crowned warbler, rufous-crowned sparrow, spotted towhee, California towhee) and 3) urban-associated species

⁸⁵ Davis, Steven. Effects of fire and other factors on patterns of chaparral in the Santa Monica Mountains, Coastal Commission Workshop on the Significance of Native Habitats in the Santa Monica Mountains. CCC Hearing, June 13, 2002, Queen Mary Hotel.

⁸⁶ 1996 Los Angeles County Fire Code Section 1117.2.1

⁸⁷ Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. Vicars, M. (ed.) 1999. FireSmart: protecting your community from wildfire. Partners in Protection, Edmonton, Alberta.

⁸⁸ Fuel Modification Plan Guidelines. Co. of Los Angeles Fire Department, Fuel Modification Unit, Prevention Bureau, Forestry Division, Brush Clearance Section, January 1998.

⁸⁹ Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024.

⁹⁰ Ibid.

(mourning dove, American crow, Western scrub-jay, Northern mockingbird)⁹¹. It was found in this study that the number of migrators and chaparral-associated species decreased due to habitat fragmentation while the abundance of urban-associated species increased. The impact of fuel clearance is to greatly increase this edge-effect of fragmentation by expanding the amount of cleared area and "edge" many-fold. Similar results of decreases in fragmentation-sensitive bird species are reported from the work of Bolger et al. in southern California chaparral⁹².

Effects of Fuel Clearance on Arthropod Communities

Fuel clearance and habitat modification may also disrupt native arthropod communities, and this can have surprising effects far beyond the cleared area on species seemingly unrelated to the direct impacts. A particularly interesting and well-documented example with ants and lizards illustrates this point. When non-native landscaping with intensive irrigation is introduced, the area becomes favorable for the invasive and non-native Argentine ant. This ant forms "super colonies" that can forage more than 650 feet out into the surrounding native chaparral or coastal sage scrub around the landscaped area⁹³. The Argentine ant competes with native harvester ants and carpenter ants displacing them from the habitat⁹⁴. These native ants are the primary food resource for the native coast horned lizard, a California "Species of Special Concern." As a result of Argentine ant invasion, the coast horned lizard and its native ant food resources are diminished in areas near landscaped and irrigated developments⁹⁵. In addition to specific effects on the coast horned lizard, there are other Mediterranean habitat ecosystem processes that are impacted by Argentine ant invasion through impacts on long-evolved native ant-plant mutualisms⁹⁶. The composition of the whole arthropod community changes and biodiversity decreases when habitats are subjected to fuel modification. In coastal sage scrub disturbed by fuel modification, fewer arthropod

⁹¹ Stralberg, D. 2000. Landscape-level urbanization effects on chaparral birds: a Santa Monica Mountains case study. Pp. 125-136 in Keeley, J.E., M. Baer-Keeley, and C.J. Fotheringham (eds.). *2nd interface between ecology and land development in California*. U.S. Geological Survey, Sacramento, California.

⁹² Bolger, D. T., T. A. Scott and J. T. Rotenberry. 1997. Breeding bird abundance in an urbanizing landscape in coastal Southern California. *Conserv. Biol.* 11:406-421.

⁹³ Suarez, A.V., D.T. Bolger and T.J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. *Ecology* 79(6):2041-2056.

⁹⁴ Holway, D.A. 1995. The distribution of the Argentine ant (*Linepithema humile*) in central California: a twenty-year record of invasion. *Conservation Biology* 9:1634-1637. Human, K.G. and D.M. Gordon. 1996. Exploitation and interference competition between the invasive Argentine ant, (*Linepithema humile*), and native ant species. *Oecologia* 105:405-412.

⁹⁵ Fisher, R.N., A.V. Suarez and T.J. Case. 2002. Spatial patterns in the abundance of the coastal horned lizard. *Conservation Biology* 16(1):205-215. Suarez, A.V. J.Q. Richmond and T.J. Case. 2000. Prey selection in horned lizards following the invasion of Argentine ants in southern California. *Ecological Applications* 10(3):711-725.

⁹⁶ Suarez, A.V., D.T. Bolger and T.J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. *Ecology* 79(6):2041-2056. Bond, W. and P. Slingsby. Collapse of an Ant-Plant Mutualism: The Argentine Ant (*Iridomyrmex humilis*) and Myrmecochorous Proteaceae. *Ecology* 65(4):1031-1037.

predator species are seen and more exotic arthropod species are present than in undisturbed habitats⁹⁷.

Studies in the Mediterranean vegetation of South Africa (equivalent to California shrubland with similar plant species) have shown how the invasive Argentine ant can disrupt the whole ecosystem.⁹⁸ In South Africa the Argentine ant displaces native ants as they do in California. Because the native ants are no longer present to collect and bury seeds, the seeds of the native plants are exposed to predation, and consumed by seed eating insects, birds and mammals. When this habitat burns after Argentine ant invasion the large-seeded plants that were protected by the native ants all but disappear. So the invasion of a non-native ant species drives out native ants, and this can cause a dramatic change in the species composition of the plant community by disrupting long-established seed dispersal mutualisms. In California, some insect eggs are adapted to being buried by native ants in a manner similar to plant seeds⁹⁹.

Artificial Night Lighting

One of the more recently recognized human impacts on ecosystem function is that of artificial night lighting as it effects the behavior and function of many different types of organisms¹⁰⁰. For literally billions of years the only nighttime sources of light were the moon and stars, and living things have adapted to this previously immutable standard and often depend upon it for their survival. A review of lighting impacts suggests that whereas some species are unaffected by artificial night lighting, many others are severely impacted. Overall, most impacts are negative ones or ones whose outcome is unknown. Research to date has found negative impacts to plants, aquatic and terrestrial invertebrates, amphibians, fish, birds and mammals, and a detailed literature review can be found in the report by Longcore and Rich¹⁰¹.

Summary

In a past action, the Coastal Commission found¹⁰² that the Santa Monica Mountains Mediterranean Ecosystem, which includes the undeveloped native habitats of the Santa Monica Mountains, is rare and especially valuable because of its relatively pristine

⁹⁷ Longcore, T.R. 1999. Terrestrial arthropods as indicators of restoration success in coastal sage scrub. Ph.D. Dissertation, University of California, Los Angeles.

⁹⁸ Christian, C. 2001. Consequences of a biological invasion reveal the importance of mutualism for plant communities. *Nature* 413:635-639.

⁹⁹ Hughes, L. and M. Westoby. 1992. Capitula on stick insect eggs and elaiosomes on seeds: convergent adaptations for burial by ants. *Functional Ecology* 6:642-648.

¹⁰⁰ Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024.

¹⁰¹ Ibid, and Ecological Consequences of Artificial Night Lighting, Conference, February 23-24, 2002, UCLA Los Angeles, California.

¹⁰² Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.

character, physical complexity, and resultant biological diversity. The undeveloped native habitats within the Santa Monica Mountains that are discussed above are ESHA because of their valuable roles in that ecosystem, including providing a critical mosaic of habitats required by many species of birds, mammals and other groups of wildlife, providing the opportunity for unrestricted wildlife movement among habitats, supporting populations of rare species, and preventing the erosion of steep slopes and thereby protecting riparian corridors, streams and, ultimately, shallow marine waters.

The importance the native habitats in the Santa Monica Mountains was emphasized nearly 20 years ago by the California Department of Fish and Game¹⁰³. Commenting on a Draft Land Use Plan for the City of Malibu, the Regional Manager wrote that, "It is essential that large areas of land be reclassified to reflect their true status as ESHAs. One of the major needs of the Malibu LUP is that it should provide protection for entire drainages and not just stream bottoms." These conclusions were supported by the following observations:

"It is a fact that many of the wildlife species of the Santa Monica Mountains, such as mountain lion, deer, and raccoon, have established access routes through the mountains. They often travel to and from riparian zones and development such as high density residential may adversely affect a wildlife corridor.

Most animal species that exist in riparian areas will, as part of their life histories, also be found in other habitat types, including chapparal (sic) or grassland. For example, hawks nest and roost in riparian areas, but are dependent on large open areas for foraging. For the survival of many species, particularly those high on the food chain, survival will depend upon the presence of such areas. Such areas in the Santa Monica Mountains include grassland and coastal sage scrub communities, which have been documented in the SEA studies as supporting a wide diversity of plant and animal life."

This analysis by the Department of Fish and Game is consonant with the findings of the Commission in the case of the Malibu LCP, and with the conclusion that large contiguous areas of relatively pristine native habitat in the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

¹⁰³ Letter from F. A. Worthley, Jr. (CDFG) to N. Lucast (CCC) re Land Use Plan for Malibu dated March 22, 1983.

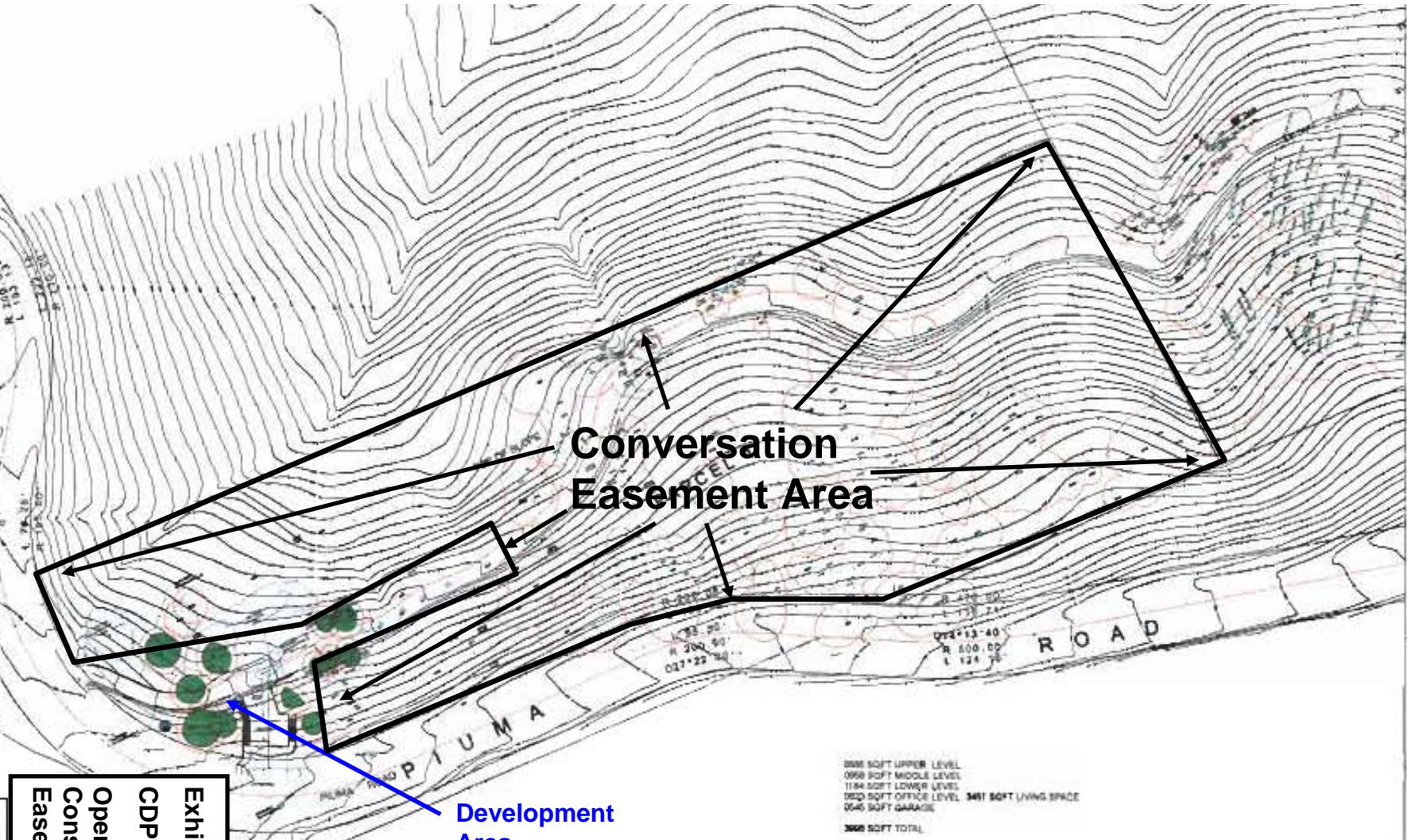


Exhibit 5
CDP 4-06-132
Open Space
Conservation
Easement

Conversation Easement Area

Development Area

0000 SOFT UPPER LEVEL
 0969 SOFT MIDDLE LEVEL
 1184 SOFT LOWER LEVEL
 0820 SOFT OFFICE LEVEL 3481 SOFT LIVING SPACE
 0545 SOFT GARAGE
3608 SOFT TOTAL

SITE PLAN

PIUMA MEADOW
 24800 PIUMA RD.
 WALLEN CA 90290



Puma Rd

Subject Lot

Puma Rd

150 yds

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Exhibit 6
CDP 4-06-132
Aerial Photo of Lot



Proposed
Location of
Residence

Proposed
Location
of Water
Tank

Dirt Access
Road

70 yds

Exhibit 7
CDP 4-06-132
Birds Eye View of
Building Site from
North Looking
South



Photo of building site from Piuma Road looking north. Top of flap represents proposed height of residence.



View of project site from Malibu Canyon Road and south of Piuma Ridgeline. A small portion of the top of the proposed residence will be visible over the ridgeline.



View of project site from Backbone Trail looking south at project site.

Exhibit 8
 CDP 4-06-132
 Birds Eye View of
 Building Site from
 North Looking
 South