

CALIFORNIA COASTAL COMMISSION

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SOUTH CENTRAL COAST AREA
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RECORD PACKET COPY

Filed: 1/20/05
180th day: 7/19/05
Staff: J. Johnson *Smith*
Staff Report: 6/23/05
Hearing Date: 7/13/05
Comm Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-04-053

APPLICANT: Kevin Shepard

AGENT: Larry Goodwin

PROJECT LOCATION: 20520 Betton Drive, Topanga, Los Angeles County

PROJECT DESCRIPTION: Construct a two-story 28 foot high, 5,062 sq. ft. single family residence, attached 1,070 sq. ft. four car garage, patio, second floor deck, improve existing 280 foot long driveway, septic system, water storage tank, landscaping, temporary construction trailer, grade 3,400 cubic yards of cut, 50 cubic yards of fill, export 3,350 cubic yards of material to disposal site located outside the coastal zone.

Lot Area:	2.45 acres
Building Coverage:	3,474 sq/ft
Paved Coverage:	2,500 sq/ft
Landscape Coverage:	10,000 sq/ft
Parking Spaces:	8
Ht Above Finish Grade:	28 ft.

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends that the Commission determine that the proposed project with thirteen (13) Special Conditions addressing plans conforming to geologic recommendation, landscaping and erosion control plans, removal of natural vegetation, removal of excavated material, assumption of risk, future development restriction, color restriction, lighting restriction, deed restriction, drainage and polluted runoff control plan, removal of temporary construction trailer, habitat impact mitigation, and open space deed restriction, is consistent with the requirements of the California Coastal Act. The standard of review for this project are the Chapter 3 policies of the Coastal Act. The project site is located within the Tuna Canyon Significant Watershed, and includes native chaparral that is considered environmentally sensitive habitat. The site is accessed from Tuna Canyon Road by private paved roadways existing nearby to the subject site. An existing dirt driveway leading from Betton Drive about 280 feet long is proposed to be improved to access the proposed building pad.

LOCAL APPROVALS RECEIVED: Approval in Concept: Los Angeles County Regional Planning Department dated 4/20/2004; Los Angeles County Department of Health Services, dated 12/30/2004; Coastal Commission Approval, Los Angeles County Fire Department, dated 7/27/2004; Final Fuel Modification Plan, County of Los Angeles, Fire Department dated 6/16/2004.

SUBSTANTIVE FILE DOCUMENTS: Los Angeles County Environmental Review Board Meeting Minutes dated January 26, 2004; Biological Survey for Shepard Residence 20520 Betton Drive, Topanga by Stephen Nelson, Consulting Biologist, dated September 2003; Preliminary Geologic & Soils Engineering Investigation, by Subsurface Designs, Inc., dated November 18, 2003; Coastal Permit No. 4-03-085, WF Trust.

STAFF RECOMMENDATION:

MOTION: I move that the Commission approve Coastal Development Permit No. 4-04-053 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.

I. Resolution for Approval with Conditions

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 RECOMMENDATION

By acceptance of this permit, the applicant agrees to comply with the recommendations contained in the Preliminary Geologic and Soils Engineering Investigation, by Subsurface Designs Inc., dated November 18, 2003. These recommendations to be incorporated into all final design and construction plans include recommendations concerning grading and earthwork, foundations, retaining walls, floor slabs, drainage and maintenance.

The final plans approved by the consultants 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. LANDSCAPE, EROSION CONTROL AND FUEL MODIFICATION PLANS

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit final revised 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 erosion control plans shall be reviewed and approved by the consulting engineering geologist to ensure that the plans are in conformance with the consultants' recommendations. The plans shall incorporate the criteria set forth below. All development shall conform to the approved final revised landscaping and erosion control plans:

A) Landscaping and Erosion Control Plans

- 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. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Exotic Pest Plant Council, or as may be identified from time to time 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 within the property. Within the 20-foot radius of the fuel modification area surrounding the residence non-native orchards, gardens, and vineyards may be planted using agricultural production methods that do not use pesticides and minimizes the use of fertilizers.

All cut and fill slopes shall be stabilized with planting at the completion of final grading. Planting should primarily be of native plant species indigenous to the Santa Monica Mountains using accepted planting procedures, consistent with fire safety requirements. Such planting shall be adequate to provide 90 percent coverage within two (2) years, and this requirement shall apply to all disturbed soils. The landscape plan shall be designed with vertical elements to partially screen and soften the visual impact of the structures with trees and shrubs as viewed from the public roads located to the west and north, from public lands located to the east, and from the Tuna Canyon Trail located to the west and south of the project site. The only fencing allowed on the property is within 50 feet of the structure and along the driveway and an entry gate from Betton Drive to access the building pad.

- 2) 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.
- 3) 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
- 4) Vegetation within 20 feet of the proposed residence 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 final 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 final fuel modification plan, as revised, has been reviewed and approved by the Los Angeles County Fire Department, Forestry Division, Fire Prevention Bureau. Any irrigated lawn, turf and ground cover planted within the

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

- 5) The final drainage/erosion control plan shall be implemented within 30 days of completion of final grading; by acceptance of this permit, the applicant agrees to maintain the drainage devices on a yearly basis in order to ensure that the system functions properly. Should the devices fail or any erosion result from the drainage from the project, the applicant or successor in interests shall be responsible for any necessary repairs and restoration.
- 6) The use of Rodenticides containing any anticoagulant compounds (including, but not limited to, Bromadiolone or Diphacinone) shall not be used.
- 7) The existing secondary dirt road on the east and southern portion of the subject parcel shall be regarded as needed and restored with native plant species in the areas beyond the building pad, proposed driveway, and septic system. An irrigation plan shall be designed and irrigation installed to ensure success of these plantings.

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 should grading take place during the rainy season (November 1 - March 31) the applicant shall install or construct temporary sediment basins (including debris basins, de-silting basins or silt traps), temporary drains and swales, sand bag barriers, silt fencing, stabilize any stockpiled fill with geo-fabric covers or other appropriate cover, install geo-textiles or mats on all cut or fill slopes and close and stabilize open trenches as soon as possible. These erosion measures shall be required on the project site prior to or concurrent with the initial grading operations and maintained through out 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 the coastal zone or to a site within the coastal zone 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 geo-textiles 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

Five (5) years from the date of completion of the proposed development, 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 assesses the on-site landscaping and certifies whether it 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.

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 these permits, the applicant, or successors in interest, shall submit a revised or supplemental landscape plan for the review and approval of the Executive Director. The supplemental landscaping plan must be prepared by a licensed landscape architect or 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. The permittee shall implement the remedial measures specified in the approved supplemental landscape plan.

3. REMOVAL OF NATURAL VEGETATION

Removal of natural vegetation for the purpose of fuel modification within the 20-foot zone surrounding the proposed structure 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 20-200 foot fuel modification zone shall not occur until commencement of construction of the structure approved pursuant to this permit.

4. REMOVAL OF EXCAVATED MATERIAL

The applicant is authorized to carry out his proposal to remove excess excavated or cut material consisting of 3,350 cubic yards of material from the project site and transport this material to an appropriate disposal site located outside of the Coastal Zone, or an approved site located in the Coastal Zone with a valid coastal development permit for disposal of fill material.

5. ASSUMPTION OF RISK, WAIVER OF LIABILITY AND INDEMNITY

By acceptance of this permit; the applicant acknowledges and agrees (i) That the site maybe subject to hazards from wildfire; (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 Commissions 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.

6. FUTURE DEVELOPMENT RESTRICTION

This permit is only for the development described in Coastal Development Permit No. 4-04-053. 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 the entire property. Accordingly, any future improvements to the entire property, including but not limited to the residence, garage, fencing, gates, grading, and clearing of vegetation, other than as provided for in the approved fuel modification landscape and erosion control plan prepared pursuant to Special Condition Number Two (2), shall require an amendment to Permit No. 4-04-053 from the Commission or shall require an additional coastal development permit from the Commission or from the applicable certified local government.

7. COLOR RESTRICTION

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, including the water tank authorized by the approval of coastal development, permit 4-04-053. The palette samples shall be presented in a format not to exceed 8 1/2" X 11" X 1/2" in size. The palette shall include the colors proposed for the all of the roofs, trims, exterior surfaces, driveway surface, retaining walls (visible to exterior), drainage swales, or 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, concrete, or light shades, galvanized steel, and no bright tones. All windows shall be comprised of non-glare glass.

The approved structures shall be colored 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. 4-04-053 if such changes are specifically authorized by the Executive Director as complying with this special condition.

8. LIGHTING RESTRICTION

A. The only outdoor night lighting allowed on the subject parcel are limited to the following to minimize night time intrusion of light and disruption of wildlife traversing this area at night within this rural area:

1. The minimum necessary to light walkways used for entry and exit to the structures, including parking areas and driveways, on the site. This lighting shall be limited to fixtures that do not exceed two feet in height, that are directed downward, and use incandescent bulbs that do not exceed 60 watts, or energy

efficient bulbs such as compact florescent that do not exceed a 12 watt rating, or bulbs generating the equivalent amount of lumens, unless a higher wattage is authorized by the Executive Director.

2. Security lighting attached to the residence and garages that are controlled by motion detectors is limited to incandescent bulbs that do not exceed 60 watts, or energy efficient bulbs such as compact florescent that do not exceed a 12 watt rating, or bulbs generating the equivalent amount of Lumens, unless a higher wattage is authorized by the Executive Director.
 3. The minimum lighting necessary for safe vehicular use of the driveway. That lighting shall be limited to incandescent bulbs that do not exceed 60 watts, or energy efficient bulbs such as compact florescent that do not exceed a 12-watt rating, or bulbs generating the equivalent amount of lumens, unless a higher wattage is authorized by the Executive Director.
- B. No lighting on the remainder of the parcel, including the slopes and other areas, and no lighting for aesthetic purposes is allowed.

9. 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 a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to these permits, 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 (hereinafter referred to as the "Standard and Special Conditions"); and (2) imposing all Standard and Special Conditions of these permits as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the applicant's entire parcel or parcels. 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.

10. DRAINAGE AND POLLUTED RUNOFF CONTROL PLAN

Prior to the 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 stormwater from each runoff event, 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, 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 amendment(s) or new Coastal Development Permit(s) are required to authorize such work.

11. REMOVAL OF TEMPORARY CONSTRUCTION TRAILER

With the acceptance of this coastal permit, the applicants agree that the temporary construction trailer on the site shall be removed within two years of the issuance of this coastal development permit or within thirty (30) days of the applicants receipt of the Certificate of Occupancy for the proposed residence from the County of Los Angeles, whichever is less, to a site located outside the Coastal Zone or a site with a valid coastal development permit for the installation of the trailer.

12. 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 habitat (ESHA) that will be disturbed by the proposed development, including by fuel modification requirements on the project site (based on the final fuel modification plan approved by the Los Angeles County Fire Department). The chaparral areas on the site shall be delineated on a detailed map, to scale, illustrating the subject parcel boundaries. The delineation map shall indicate the total acreage for all chaparral onsite that will be impacted by the proposed development, including the fuel modification areas. The existing graded pad and driveway is excluded from the total acreage of ESHA impacted. 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 ESHA from the proposed development and fuel modification 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 area. The habitat restoration area may either be onsite or offsite within the coastal zone in the City of Malibu or 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 agrees to the restoration work, maintenance and monitoring required by this condition and agrees 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. A 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 amendment to the coastal development permit for an alternative mitigation program.

The habitat restoration plan shall be implemented 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 owner of the habitat restoration area shall execute and record a 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 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 issuance of the coastal development permit, the applicant shall execute and record an open space deed restriction in a form and content acceptable to the Executive Director, over a 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 is 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 Santa Monica Mountains Conservancy to mitigate adverse impacts to chaparral habitat ESHA. The fee shall be calculated as follows:

1. Development Area, Irrigated Fuel Modification Zones

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 Santa Monica Mountains Conservancy, 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 Santa Monica Mountains Conservancy. The fee shall be used for the acquisition or permanent preservation of chaparral habitat in the Santa Monica Mountains coastal zone.

13. OPEN SPACE RESTRICTION

No development, as defined in Section 30106 of the Coastal Act, grazing, or agricultural activities shall occur in the Open Space Area as described and depicted in an Exhibit attached to the Notice of Intent to Issue Permit (NOI) that the Executive Director issues for this permit except for:

- a. Fuel modification required by the Los Angeles county Fire Department undertaken in accordance with the final approved fuel modification plan required by Special Condition Two (2) and included in Exhibit 13;
- b. Drainage and polluted runoff control activities pursuant to Special Condition Two (2) and Special Condition Ten (10);
- c. Planting of native vegetation and other restoration activities as required by Special Condition No. Two (2), and if additional plantings or other restoration activities are approved by the Commission as an amendment to this coastal development permit or a new coastal development permit; and
- d. Existing easements for roads, trails, and utilities.

PRIOR TO THE ISSUANCE BY THE EXECUTIVE DIRECTOR OF THE NOI FOR THIS PERMIT, the applicant shall submit for the review and approval of the Executive Director, and upon such approval, for attachment as an Exhibit to the NOI, a formal legal description and graphic depiction, prepared by a licensed surveyor, of the portion of the subject property affected by this condition, as generally described on Exhibit 14 attached to the findings in support of approval of this permit.

IV. Findings and Declarations

A. Project Description

The project site is located within a partially developed 16-lot subdivision created in the 1960's prior to the effective date of the Coastal Act in 1977. The site is located about two miles inland, northwest of Tuna Canyon, and southwest of Fernwood area in an unincorporated area of Los Angeles County known as Topanga. The 2.45 acre parcel is accessed about one third of a mile to the south of Tuna Canyon Road, along Skyhawk Lane, Chard Avenue (also known as Hawks Nest Trail), and along Betton Drive (Exhibits 1 and 2).

The applicant proposes to construct a two story, 28 foot high, 5,062 sq. ft. single family residence, attached 1,070 sq. ft. four car garage, patio, second floor deck, improve existing 280 foot long driveway, septic system, water storage tank, landscaping, temporary construction trailer, grade 3,400 cubic yards of cut, 50 cubic yards of fill, export 3,350 cubic yards of material to disposal site located outside the coastal zone. (Exhibits 3 - 10).

Existing development within the vicinity of the proposed project includes an existing residence on a neighboring parcel to the west, a residence under construction on a parcel further to the west on Fabuco Road, and another existing residence on a parcel northwest of the project site on Fabuco Road. There are two approved residences, one on a parcel located to the south on Fabuco Road and the second on a parcel located to the west on Betton Drive. In addition, to the east there are undeveloped lands owned by the National Park Service. The applicant is proposing development on the western

portion of the parcel on the opposite side of the subject parcel from the National Park Service lands (Exhibit 11).

The building site for the proposed residence and garage is along the crest of an irregular ridge within the northern portion of the 2.45 acre parcel. Slopes descend in all directions from the proposed building site that will be cut into the crest of the ridge. Slopes descend from the ridge to neighboring parcels ranging from gradients of about 1 ½ :1 (33 degrees) to 2:1 (26 degrees). The maximum relief within the property is about 90 vertical feet across a horizontal distance of about 200 feet. The elevation of the property ranges from 1,660-foot elevation on the south to 1,720-foot elevation at the crest of the ridge.

The applicant proposes to use water provided by the Los Angeles County Waterworks District No. 29. The applicant also proposes to install a 5,500 gallon water tank for fire protection which will be connected to a proposed fire hydrant. The tank will be buried into the slope northwest of the proposed residence.

Further, the County of Los Angeles Environmental Review Board (ERB) reviewed this project on January 26, 2004. The ERB meetings are working sessions where the appointed ERB members serve in an advisory capacity to the Regional Planning Commission (or the County decision makers) providing recommendations on whether or not the project conforms to the policies of the County LUP. The ERB evaluation and recommendation to the County decision makers (the Regional Planning staff in this case) concluded that the proposed project was consistent with the policies of the County LUP after modifications (Exhibit 12). The ERB recommended to the County decision makers that the proposed project was consistent after modification with project modifications addressing a revised fuel modification and landscape plan by eliminating Zone B and replacing it with an expanded Zone C to lessen potential erosion and impacts to native vegetation, revisions in the plant species and use of irrigation as identified in the landscape plan, the use of wood chips and mulch from chipping existing on-site vegetation, low intensity exterior lighting to be directed downward, the use of earth tone colors for house exterior and generally concern about continuing cumulative impacts generated by residence constructed within upper Tuna Canyon Watershed. The applicant has received an "Approval in Concept" from the County of Los Angeles Department of Regional Planning on 4/20/04 for the proposed residence, garage and driveway improvements. In addition, the proposed project also received a Final Fuel Modification Plan Approval dated 7/02/03, by the Los Angeles County Fire Department (Exhibit 13).

Although the subject parcel is located within Tuna Canyon Significant Watershed, the project site is located about one thousand (1,000) feet from one tributary of Tuna Canyon Creek to the east and about 1,000 feet to the south of the second tributary of Tuna Canyon Creek which has been designated Environmentally Sensitive Habitat Area (ESHA) by the Certified Malibu/Santa Monica Mountains Land Use Plan. In addition, ESHA is also located on the southern portion of the parcel, where undisturbed native chaparral is located. The ESHA is proposed to be removed as part of the Fuel Modification Plan, within Zone A, and thinned as part of the Fuel Modification Plan,

Zone B and Zone C. The Los Angeles County Fire Department required that the Final Fuel Modification Plan include all three Zones A, B, and C, as the project site is located on the top of a small ridge requiring the typical fuel modification to adequately protect the proposed development. This issue is discussed further below.

B. Environmentally Sensitive Resource Areas

Section 30250(a) of the Coastal Act provides that new development be located within or near existing developed areas able to accommodate it, or in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources:

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

Section 30105.5 of the Coastal Act defines the term "cumulatively," as it is used in Section 30250(a), to mean that:

the incremental effects of an individual project shall be reviewed in conjunction with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Sections 30230 and 30231 of the Coastal Act are designed to protect and enhance, or restore where feasible, marine resources and the biologic productivity and quality of coastal waters, including streams.

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 of the Coastal Act states that:

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.

In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas must be protected against disruption of habitat values:

(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.

Sections 30230 and 30231 of the Coastal Act require that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through among other means, minimizing adverse effects of waste water discharge and entrainment, 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, Sections 30107.5 and 30240 of the Coastal Act state that environmentally sensitive habitat areas must be protected against disruption of habitat values. Therefore, when considering any area, such as the Santa Monica Mountains, with regard to an ESHA determination one must focus on three main questions:

- 1) Is a habitat or species rare or especially valuable?
- 2) Does the habitat or species have a special nature or role in the ecosystem?
- 3) Is the habitat or species 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 15, 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.

For any specific property within the Santa Monica Mountains, it is necessary to meet three tests in order to assign the ESHA designation. First, is the habitat properly identified, for example as coastal sage scrub or chaparral? Second, is the habitat undeveloped and otherwise relatively pristine? Third, is the habitat part of a large, contiguous block of relatively pristine native vegetation?

The applicant proposes to construct a two story 28 foot high, 5,062 sq. ft. single family residence, attached 1,070 sq. ft. four car garage, patio, second floor deck, improve existing 280 foot long driveway, septic system, water storage tank, landscaping, temporary construction trailer, grade 3,400 cubic yards of cut, 50 cubic yards of fill, export 3,350 cubic yards of material to disposal site located outside the coastal zone (Exhibits 3 – 10).

The proposed grading is necessary to cut a pad into the western portion of a small ridge for the proposed building pad and to widen and realign the existing driveway to the pad. The size of the building pad, as measured from the top of the cut slope to the bottom of the fill slope, not including the fire truck hammerhead turnaround area, is about 9,750 sq. ft.

The project site is designated as part of the Tuna Canyon Significant Watershed in the certified Malibu/Los Angeles County Land Use Plan. The Tuna Canyon Significant Watershed Area includes about 1,524 acres of land in the coastal Santa Monica Mountains within the watersheds of Tuna and Pena Canyons. The terrain is extremely steep, generally greater than 30% slope, and rugged in this canyon. The majority of the subject site and the surrounding 16-lot subdivision includes flat and sloping land with gentle to moderate slopes. The site elevation extends about 60 feet ranging from about 1,660 to 1,720 feet above sea level. The proposed building pad will utilize a stepped two-level design cut into the top of the ridge at about the 1,705 – 1710-foot elevation levels. Commission staff has reviewed and analyzed historic aerial photographs of the building site and its immediate vicinity and determined that the western portion of the proposed building pad and the driveway have been disturbed by previous grading that occurred prior to the 1977 effective date of the Coastal Act. Covering the majority of the subject parcel there is relatively undisturbed native chaparral on the southern and eastern portion of the property. The native vegetation has essentially recovered from the 1993 Malibu wildfire that burned the subject site and surrounding area. The proposed project with a 9,750 sq. ft. building pad will directly disturb a portion of this chaparral which is considered Environmentally Sensitive Habitat Area (ESHA) (James – we need to clarify here whether the loss of ESHA will result from the grading for the proposed pad or only from the implementation of the fuel mod plan). The Los Angeles County Fire Department approved a typical Final Fuel Modification Plan with a Zone A which will require the removal and replanting of native plants within Zone A between the structures and up to 20 feet from the structure and a Zone B extending to 100 feet from

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

the structures. In addition, a portion of Zone C. will require the thinning of this chaparral up to 200 feet from the proposed structure; however, in this case, the subject parcel is located adjacent to property owned by the National Park Service. The National Park Service has a policy prohibiting vegetation clearance for the purpose of fuel modification to allow private development on adjoining property. Staff contacted the National Park Service and confirmed this policy applies in this case. The County of Los Angeles approved a Final Fuel Modification Plan without any Zone C fuel modification on the adjoining National Park Service property (Exhibit 13).

The subject site is located within the watershed of Tuna Creek, which is designated as a sensitive resource area in the certified Malibu/Santa Monica Mountains Land Use Plan. A tributary stream of Tuna Canyon Creek is located approximately 1,000 ft. to the east of the proposed residence and a second tributary of Tuna Canyon Creek, which is designated as a Environmentally Sensitive Habitat (ESHA) by the Certified Malibu/Santa Monica Mountains Land Use Plan, is located approximately 1,000 ft. to the south of the proposed residence. In addition, the southern portion of the parcel is vegetated with undisturbed native chaparral. The chaparral habitat on site is contiguous with a larger area undisturbed chaparral that extends offsite onto other properties in the vicinity, including the adjacent undeveloped parcels owned by National Parks Service to the east.

The applicant submitted a biological survey of the subject parcel by Steven Nelson for the project site dated September 2003. This survey states that:

The project site is vegetated almost exclusively with a mixed chaparral plant community. The dominant plant species consist of large evergreen shrubs that grow to 6 feet or higher and form a closed canopy. These species include chamise (Adenostoma fasciculatum) which dominates the vegetation, as well as laurel sumac (Malosma laurina), black sage (Salvia mellifera), and big-pod ceanothus (Ceanothus megacarpus). Intermixed with these larger shrubs are isolated patches of scrub vegetation including deerweed (Lotus scoparius) and California buckwheat (Erigonium fasciculatum). The groundcover throughout the chaparral on site consists largely of leaf litter. Of note, no oak trees were observed on the property.

The pattern of mixed chaparral on site is broken by past fuel modification in the western portions of the parcel and along an existing unimproved drive/vehicle trail that leads from Betton Drive in an southerly direction onto the small knob on the property. Past clearing for fire control and openings in the dense shrub canopy along this road have allowed the establishment of ruderal vegetation consisting non-native annual grasses and forbs. These include brome grasses (Bromus sp.), wild oats (Avena sp.) and red stemmed filaree (Eridium cicutarium).

The biological survey contains recommendations to minimize adverse effects of the project to the functions and values of the watershed. The report submitted by the applicant states that this is best done by minimizing the removal of native vegetation on site, providing buffer areas between new development and surrounding habitat areas from "edge effects" (i.e., excessive noise, night lighting, etc.) and protecting downstream areas from erosion and siltation. Specific measures to accomplish these objectives and that have or should be considered for the project, include:

1. **Erosion Control** – The house and attendant structures are planned to be constructed on the most suitable topography on site. It is understood that the house is proposed on the small knob on site and, to the extent possible, the existing unimproved access driveway will be widened and improved. However, if this is deemed not to be feasible (due to excessive grading or other engineering constraints), a new driveway alignment should be designed so as to entail minimal removal of native vegetation. These features of the project should be followed through in order to minimize the amount of grading required for the project.
2. **Siltation Control** – During final grading engineering and landscaping planning, design criteria should be incorporated to minimize hard impervious surfaces and to control storm water runoff. Such design measures are intended to reduce the amount and velocity of runoff thereby minimizing the risk of downstream erosion and siltation that may otherwise degrade or destroy significant riparian habitats within the watershed.
3. **Landscape Design** – Native species of plants should be used for landscaping as well as fuel modification zones. In preparing a plant palette for the project, sources such as the list of native landscaping plants published by the California Native Plant Society should be consulted and used as a guideline by the landscape architect.
4. **Wildlife** – To reduce disturbances to wildlife, all exterior lighting should be directed downward and of low intensity to avoid light and glare from “spilling-over” into nearby habitat areas. In addition, fencing should be limited to the immediate perimeter of the house and yard, including the pool area, if proposed. This will allow wildlife to continue to move across the property to the extent that they do under existing conditions.”

These measures suggested by the applicant's consultant to minimize the projects adverse effects in a manner that it will be compatible with the functions and values of this significant watershed are incorporated into the proposed project as required by **Special Condition No. Two**, which addresses landscape, erosion control and fuel modifications plans and limits fencing on site, by **Special Condition No. Eight** which addresses exterior lighting restriction, and by **Special Condition No. Ten** which addresses a drainage and polluted runoff control plan.

The applicant's biological consultant notes that the project site is vegetated almost exclusively with “mixed chaparral”, primarily consisting of large evergreen shrubs that grow to six feet or higher and form a closed canopy. However, the applicant's biological consultant also asserts that “the mixed chaparral dominating the site is not considered sensitive. However, Commission staff visited the subject property on June 7, 2005 and confirmed that the project site is predominately vegetated with relatively undisturbed mixed chaparral. In addition, staff notes that the chaparral habitat on the subject site is part of a larger unfragmented block of relatively undisturbed chaparral habitat that extends onto neighboring National Park Service properties to the east. In past Commission permit actions and in its adoption of the Malibu Local Coastal Program, the Commission has found that areas in the Santa Monica Mountains that are vegetated

with relatively undisturbed coastal sage scrub and chaparral, where such vegetated areas are part of a larger unfragmented block of habitat, constitute ESHA under the Coastal Act.

Therefore, in this case, due to the important ecosystem roles of coastal sage scrub and chaparral in the Santa Monica Mountains (detailed in Exhibit 15), and, as discussed in detail above, the fact that a portion of the subject site is relatively undisturbed and part of a large, unfragmented block of habitat, the Commission finds that the mixed chaparral located on the project site (excluding the driveways and building pad) meets the definition of ESHA under the Coastal Act.

The proposed residence and a portion of the associated graded pad is proposed to be located on an existing disturbed area on the project site which was previously graded prior to the effective date of the Coastal Act, and does not currently support ESHA. The applicant is proposing no development or fuel modification on the adjoining National Park Service property.

As explained above, the project site and the surrounding area (excluding the driveways and building pad that were graded prior to the effective date of the Coastal Act) constitutes an environmentally sensitive habitat area (ESHA) pursuant to Section 30107.5. Section 30240 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 and garage on the parcel. The development is proposed to be located on a portion of the existing building pad that was graded prior to the effective date of the Coastal Act which does not support ESHA. However, the construction of a residence in that location will still require the removal of chaparral ESHA as a result of expanding the existing building pad by cutting into the ridge and as a result of the fuel modification for fire protection purposes within the Zone A 20 feet from the structure and the thinning of chaparral ESHA up to a maximum of 200 feet from the structures within Zones B and C. As single-family residences do not have to be located within ESHAs to function, the Commission does not consider single-family residences to be a use 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.

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. 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 on March 31, 2004 for an undisclosed amount of money. The Grant Deed recorded in March 2004 indicates that the documentary transfer tax is not of public record. The lot was designated in the County's certified Land Use Plan in 1986 for residential use. At the time the applicant purchased the lot, the County's certified Land Use Plan did not designate the vegetation on the site as ESHA. Based on these facts the applicant had reason to believe that they had purchased a lot 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 feasible and would not provide the owner an economic return on the investment. The lot is 2.45 acres, and is located adjacent to other residentially developed and vacant parcels. There is no indication that a public agency would consider it a priority to purchase this lot. 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 on the property 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 the applicant's proposed septic system, ensuring that the system 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 taking the property.

As discussed above, the proposed development will be approved within ESHA in order to provide an economically viable use. Given that the southern and eastern portion of the site with the exception of the previously disturbed and graded building pad and driveways areas contains ESHA, there will be significant impacts to ESHA resulting from the required fuel modification area around the approved structure. The following discussion of ESHA impacts from new development and fuel modification is based on the findings of the Malibu LCP².

In past permit actions, the Commission has limited development within or adjacent to chaparral ESHA to a 10,000 sq. ft. development area, excluding driveways and fire turn around areas. In addition, the Table 1 policies of the certified Malibu/Santa Monica Mountains Land Use Plan, which is used by the Commission as guidance in its permit actions, also limits the size of building pads for new development to no more than 10,000 sq. ft. in total size. In this case, not including the area of the driveway and turnaround, or the proposed septic system, the proposed development area for the residence and associated improvements is approximately 9,750 sq. ft. in size. This conforms to the maximum development area of 10,000 sq. ft. that the Commission has typically allowed in similar situations on sites containing ESHA. However, given the location of ESHA on the site, there will still be significant impacts to ESHA resulting from construction of the residence and the required fuel modification area around the approved structure. The following discussion of ESHA impacts from new development and fuel modification is based on the findings of the Malibu LCP³.

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

² Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.

³ Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.

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 100 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 200 feet. This zone would primarily retain existing native vegetation, with the exception of high fuel species such as chemise, 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 structure 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 lots, except for Zone A which is located entirely on the subject site. However, in this case, although the typical fuel modification zone on this parcel would extend from the approved structures up to 200 feet into chaparral ESHA to the east on adjoining parcels owned by the National Park Service, the National Park Service has informed the Commission staff that no vegetation clearance is authorized on National Park Service land. In this case, the required fuel modification zone will extend from the approved structures as generally shown on Exhibit 13, into chaparral ESHA. The proposed development lies upslope from a blueline stream, which sustains a riparian corridor offsite in Tuna Canyon Creek. The applicant submitted a Final Fuel Modification Plan approved by the Los Angeles Co. Fire Dept. dated 6/14/04, which notes that a portion of the chaparral ESHA located within the 200 foot fuel modification area along the north, west, south and east slopes of the parcel will need to be thinned as a result of the development of the project. To the west is an existing residence (Coastal Permit No. 4-96-026, Jason) with an overlapping fuel modification area on the subject parcel. To the southwest is a vacant parcel where the applicant's Zone C fuel modification area will overlap. To the east, the applicant's Zone C and a small portion of Zone B fuel modification areas do not overlap onto lands owned by the National Park Service. The Final Fuel Modification Plan does not require any fuel modification on the adjoining National Park Service property. As noted above, the National Park Service has informed the Commission staff that no vegetation clearance is authorized on National Park Service land. Further, the National Park Service has previously informed Commission staff that it will not allow any fuel modification on National Park Service lands (Coastal Permit No. 4-04-063, Ramirez Canyon LLC). In this case, the applicant is proposing no development or fuel modification on the adjoining National Park Service property. Therefore, impacts to sensitive chaparral habitat will occur due to required fuel modification for the proposed development on a parcel located to the southwest of the subject parcel and not to the NPS parcel located to the east.

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 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 vegetation typical of coastal canyon slopes, and the down slope 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)⁴. 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 chaparral⁵.

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 area⁶. The Argentine ant competes with native harvester ants and carpenter ants displacing them from the habitat⁷. 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 developments⁸. 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 mutualisms⁹. 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 habitats¹⁰.

Studies in the Mediterranean vegetation of South Africa (equivalent to California shrubland with similar plant species) have shown how the invasive Argentine ant can

⁴ 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.

⁵ 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.

⁶ 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.

⁷ 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.

⁸ 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.

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. Bond, W. and P. Slingsby. Collapse of an Ant-Plant Mutualism: The Argentine Ant (*Iridomyrmex humilis*) and Myrmecochorous Proteaceae. *Ecology* 65(4):1031-1037.

¹⁰ Longcore, T.R. 1999. Terrestrial arthropods as indicators of restoration success in coastal sage scrub. Ph.D. Dissertation, University of California, Los Angeles.

disrupt the whole ecosystem.¹¹ 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 seeds¹².

While these impacts resulting from fuel modification 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 ESHA resulting from the removal, conversion, or modification of natural habitat for new development including fuel modification and brush thinning 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 Final Fuel Modification Plan (approved by the Los Angeles County Fire Department) shows the use of the standard three zones of vegetation modification. Zones "A" (setback zone) and "B" (irrigation zone) are shown in a radius extending approximately 100 feet from the proposed structures. A "C" Zone (thinning zone) is provided for a distance of 100 feet beyond the "A" and "B" zones, or to the property line. In these areas, brush clearance, extending a distance of 200 feet from the proposed residence, will be required on adjacent properties with the exception of lands owned by the National Park Service.

The ESHA area affected by the proposed development does not include the existing disturbed pad area or access road since those areas were previously graded and denuded of ESHA prior to the effective date of the Coastal Act. As such, the ESHA areas that will be impacted by the proposed project are fuel modification and brush clearance areas on the slopes beyond the edges of the disturbed area and access road. The precise area of the undisturbed chaparral ESHA that will be impacted by the proposed development has not been calculated by the applicant on the slopes within Fuel Modification Zones B and C and a portion of the building pad. Therefore, the Commission finds that it is necessary to require the applicant to confirm the area of the ESHA onsite that will be impacted by the proposed development including the areas affected by fuel modification and brush thinning activities, as required by **Special Condition No. Twelve (12)**.

In the certification of the Malibu LCP the Commission approved 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

¹¹ Christian, C. 2001. Consequences of a biological invasion reveal the importance of mutualism for plant communities. *Nature* 413:635-639.

¹² 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.

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 No. Twelve (12)**. 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 No. Twelve (12), 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 lot containing the habitat conservation area must be restricted from future development and permanently preserved. If the mitigation lot 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 No. Twelve (12), 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 coastal sage scrub 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 (the "A" zone required for fuel modification), and where vegetation will be significantly removed and any remaining vegetation will be subjected to supplemental irrigation (the "B" 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 "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. 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 less difficult to restore chaparral habitat when some of the native vegetation remains, rather than when all 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 the standard three zones of vegetation modification. Zones "A" (setback zone) and "B" (irrigation zone) are shown extending in a radius of approximately 100 feet from the proposed structures. A "C" Zone (thinning zone) is provided for a distance of 100 feet beyond the "A" and "B" zones, or to the property line. In these areas, brush clearance, extending a distance of 200 feet from the proposed residence, will be required on adjacent properties, with the exception of the adjacent lands owned by the National Park Service. As discussed above, the ESHA area affected by the proposed development does not include the disturbed area or access road since those areas were previously denuded of ESHA prior to the effective date of the Coastal Act. As such, the ESHA areas that will be impacted by the proposed project are the required fuel modification and brush clearance areas on the slopes beyond the edges of the graded pad and 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" and "B" Zones) and \$3,000 per acre of un-irrigated fuel modification area (zone "C") or brush clearance area.

Should the applicant choose the in-lieu fee mitigation method, the fee shall be provided to the Mountains Recreation and Conservation Authority (MRCA) for the acquisition, permanent preservation, or restoration of natural habitat areas within the coastal zone.

This mitigation method is provided for in **Special Condition No. Twelve (12)**, subpart C for Zones B and C only.

The Commission has determined that in conjunction with siting new development to minimize impacts to ESHA, additional actions can be taken to minimize adverse impacts to ESHA. The Commission finds that the use of non-native and/or invasive plant species for residential landscaping results in both direct and indirect adverse effects to native plants species indigenous to the Malibu/Santa Monica Mountains area. Adverse effects from such landscaping result from the direct occupation or displacement of native plant communities by new development and associated non-native landscaping. Indirect adverse effects include offsite migration and colonization of native plant habitat by non-native/invasive plant species (which tend to outcompete native species) adjacent to new development. The Commission notes that the use of exotic plant species for residential landscaping has already resulted in significant adverse effects to native plant communities in the Malibu/Santa Monica Mountains area. Therefore, in order to minimize adverse effects to the indigenous plant communities of the Malibu/Santa Monica Mountains area, **Special Condition No. Two** requires that all landscaping consist primarily of native plant species and that invasive plant species shall not be used.

The Commission notes that streams and drainages, such as the drainage located downslope of the subject site, provide important habitat for riparian 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 habitat 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.

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, 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 No. Eight**, the Lighting Restriction, 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 area at night that are commonly found in this rural and relatively undisturbed area. 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 ESHA on this over 2.45 acre lot. Therefore, the Commission finds it is necessary to limit fencing to the building pad area within fifty (50) feet of the structure and along the main access driveway as required in **Special Condition No. Two**.

Also, 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 No. Six**, the future development restriction, has been required. Finally, **Special Condition No. Nine** 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. In addition, to permanently ensure that no further development occurs on the site outside of the proposed development area and that any potential purchasers of the subject property are aware of the restriction on open space and future development, **Special Condition No. Thirteen** prohibits all development outside of the proposed development area as shown in Exhibit 14, with the exception of fuel modification; existing driveway restoration; septic line & seepage pits; or the 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.

The applicant proposes a temporary construction trailer located on the existing graded driveway. The Commission finds it necessary to require the removal of this trailer to an appropriate disposal or relocation site within two years of the issuance of this Coastal Permit Amendment or within thirty (30) days of the applicant's receipt of the Certificate of Occupancy for the proposed residence from Los Angeles County, whichever is less, as required by **Special Condition Number Eleven**. The removal of this trailer is necessary to avoid the potential conversion to a second dwelling unit and potential cumulative impacts on public services such as road capacity, sewage disposal, water,

electricity as well as erosion and sedimentation impacts to the downstream Tuna Canyon Creek environmentally sensitive habitats.

Finally, 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. These species are a key component of chaparral and coastal sage scrub communities in the Santa Monica Mountains. Therefore, in order to avoid adverse impacts to sensitive predator species, **Special Condition No. Two** prohibits the use of any rodenticides containing anticoagulant compounds on the subject property.

Therefore for the reasons set forth above, the Commission finds that the proposed project, as conditioned, is consistent with Coastal Act Sections 30230, 30231, 30240 and 30250.

C. 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, 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 that:

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.

As described above, the proposed development consists of constructing a single family residence, attached garage, patio, septic system, water storage tank, landscaping, temporary construction trailer, improve an existing 280 foot long driveway, and grade 3,400 cubic yards of cut, 50 cubic yards of fill, export 3,350 cubic yards of material to disposal site located outside the coastal zone. The building pad for the residence, garage and driveway together with the drainage system will serve to convey drainage from the applicant's subject property and uphill areas into the watershed. The site is considered a "hillside" development, as the building site is located on a small ridge and the driveway improvements are located on gently sloping terrain all with soils that are susceptible to erosion.

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 therefore 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. Ten, 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 measure 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 Nos. Two, Three, and Four** are necessary to ensure the proposed development will not adversely impact water quality or coastal resources through erosion control, vegetation removal and excavated material offsite disposal.

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. Further, 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 coastal resources.

Therefore, the Commission finds that the proposed project, as conditioned to incorporate and maintain a drainage and polluted runoff control plan, is consistent with Section 30231 of the Coastal Act.

D. Geologic Stability and Hazards

Section 30253 of the Coastal Act states:

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.

The proposed development is located in the Malibu area which is generally considered to be subject to an unusually high number of natural hazards. Geologic hazards common to the Malibu area include landslides, erosion, and flooding. In addition, fire is an inherent threat to the indigenous chaparral community of the coastal mountains. Wild fires often denude hillsides in the Santa Monica Mountains of all existing vegetation, thereby contributing to an increased potential for erosion and landslides on property.

The Commission reviews the proposed project's risks to life and property in areas where there are geologic, flood and fire hazards. The applicant proposes to construct a residence and garage as identified above. Regarding the geologic hazard, the applicant submitted the following: Preliminary Geologic and Soils Engineering Investigation, by Subsurface Designs, dated November 18, 2003. This report concludes that:

It is the finding of this firm, based on the subsurface data, that the proposed residence and grading will not be affected by settlement, landsliding, or slippage. Further, the aforementioned development and grading will not have an adverse effect on off-site property.

The geologic and engineering consultants conclude that the proposed development is feasible and will be free from geologic hazard provided their recommendations are incorporated into the proposed development. This report included several recommendations that addressed the following issues: grading and earthwork, foundations, retaining walls, floor slabs, drainage and maintenance. To ensure that the recommendations of the consultants have been incorporated into all proposed development the Commission, as specified in **Special Condition Number One**, requires the applicant to comply with all the recommendations of the consulting geologist and engineer as conforming to all structural and site stability recommendations for the proposed projects. Final plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission. Any substantial changes to the proposed developments, as approved by the Commission, which may be recommended by the consultant shall require an amendment to the permit or a new coastal development permit.

Minimizing erosion of the site is important to reduce geological hazards on the site and minimize sediment deposition in the drainages leading to Tuna Canyon Creek. The applicant has submitted landscape and fuel modification plans for the proposed development. These plans incorporate the use of native species and illustrate how these materials will be used to provide erosion control to those areas of the site disturbed by development activities. These plans also illustrate that vegetation will be "thinned" rather than "cleared" for fuel modification purposes, thus allowing for the continued use of existing native plant materials for on site erosion control. The thinning, rather than complete removal, of native vegetation helps to retain the natural erosion control properties, such as extensive and deep root systems, provided by these species, as noted above, and as required by **Special Condition No. Two**.

In order to ensure that drainage from the residential building pad is conveyed from the site and into the watershed in a non-erosive manner and erosion is controlled and minimized during construction, the Commission finds it necessary to require the applicant to submit site drainage plans, as required by **Special Condition Number Two** and a polluted runoff control plan, as required by **Special Condition Number Ten**. Furthermore, the Commission finds it necessary to require the applicant, should the proposed improvements to the driveway access or the proposed drainage structures fail or result in erosion, to be solely responsible for any necessary repairs and restoration resulting from this failure along the entire section of the driveway subject to this permit. **Special Condition No. Two** provides for such maintenance of the access driveways and drainage structures.

In addition, to ensure that excess excavated material is moved off site so as not to contribute to unnecessary landform alternation and to minimize erosion and sedimentation from stockpiled excavated soil, 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 fill material, as specified in **Special Condition Four (4)**.

The Coastal Act also requires that new development minimize the risk to life and property in areas of high fire hazard. The Coastal Act also recognizes that new development may involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to establish who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the individual's right to use his property.

Vegetation in the coastal areas of 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. In fact, the property burned in the 1993 Malibu Fire. In addition, although the typical fuel modification zone on this parcel would extend from the approved structures up to 200 feet into chaparral ESHA to the east on adjoining parcels, in this case, the Commission notes that the adjacent parcels to the east of the subject site are owned by the National Park Service. The National Park Service has informed the Commission that no vegetation clearance is required or authorized on National Park Service land. As such, the Commission notes that the project site will have a reduced fuel modification zone. Through the waiver of liability, the applicant acknowledges and appreciates the nature of the fire hazard which exists on the site and which may affect the safety of the proposed development, as incorporated by **Special Condition No. Five**.

The Commission finds that only as conditioned is the proposed project consistent with Section 30253 of the Coastal Act.

E. Visual Resources.

Section 30251 of the Coastal Act states that:

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 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.

The applicant proposes to construct a two story 28 foot high, 5,062 sq. ft. single family residence, attached 1,070 sq. ft. four car garage, patio, second floor deck, improve existing 280 foot long driveway, septic system, water storage tank, landscaping, temporary construction trailer, grade 3,400 cubic yards of cut, 50 cubic yards of fill, export 3,350 cubic yards of material to disposal site located outside the coastal zone.

In the review of this project, the Commission reviews the publicly accessible locations where the proposed development is visible to assess potential visual impacts to the public. The Malibu/Santa Monica Mountains Land Use Plan protects visual resources in the Santa Monica Mountains. Tuna Canyon Road is recognized as a "second priority scenic area" which is given special treatment when evaluating potential impacts caused by new development.

The Commission examines the building site, the proposed grading, and the size of the building pad and structures. The development of the residence and garage raise two issues regarding the siting and design: one, whether or not public views from public roadways will be adversely impacted, or two, whether or not public views from public lands and trails will be impacted. It is important to note that two residences have been constructed and one is under construction in the immediate vicinity while two additional residences on nearby parcels have also been approved by the Commission but have not been constructed (Exhibit 11). Assuming these additional residences will be constructed, the subject project will be visible to the public from public locations within the context of a partially developed subdivision of 16 parcels.

The siting, size and grading for the building pad will be visible from limited portions of Tuna Canyon Road to the west and north and to the north from a portion of Saddle Peak Road. Tuna Canyon Road, a public roadway, encircles the vicinity of the project site to the south, west, and north. The site will not be visible from Tuna Canyon Road to the south as the topography drops steeply from the plateau to a narrow and steep canyon where Tuna Canyon Road and Creek are located. The improved driveway will be visible from these public roads to the north as the driveway ascends from Betton Drive to the building pad. The temporary trailer will be on site for a two year period or less. The proposed grading for the building site is modest as the building pad will be cut into the ridge and grading along the slope above the existing driveway is necessary to widen the driveway. This proposed grading is the minimum amount necessary to meet the emergency vehicle access requirements of the Los Angeles County Fire Department.

Regarding public lands, the National Park Service owns land located on adjacent parcels located as close as 100 feet to the east of the subject parcel. The proposed residence and garage will be visible from these public lands. Regarding public trails, an existing equestrian and hiking trail, the Tuna Canyon trail, is located about two thirds of a mile to one mile south and west of the project site. Due to the distance and

intervening topography and vegetation, public views of the project site will be partially visible from this trail.

Because the site will be visible from Tuna Canyon Road to the west and north, Saddle Peak Road to the north, public lands to the east, and from portions of the Tuna Canyon trail to the west and south, mitigation to address potential visual impacts is needed for the structures. The proposed two story split level residence, garage and the driveway will be less visually intrusive through the use of earth tones for the structures and roofs of the buildings, including the driveway surface, drainage swales, and retaining walls, and non-glare glass which helps the structures blend in with the natural setting. The Commission finds it necessary to impose **Special Condition No. Seven** to restrict the color of the subject structures to those compatible with the surrounding environment and prohibit the use of white or concrete tones, while requiring the use of non-glare glass windows.

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. To ensure that any future additions to the permitted structures, which would otherwise be exempt from coastal permit requirements, are reviewed for consistency with Section 30251 of the Coastal Act, the Commission finds, that it is necessary to require that all future additions or improvements to the permitted structures, or any future development on the subject parcel, will require a permit or permit amendment, as required by **Special Condition No. Six**.

Further, the Commission has found that the use of native plant materials in landscaping plans can soften the visual impact of construction in the Santa Monica Mountains. The use of native plant materials to revegetate graded or disturbed areas reduces the adverse affects of erosion, which can degrade visual resources in addition to causing siltation pollution in ESHAs, and soften the appearance of development within areas of high scenic quality. The applicant has submitted a landscape and fuel modification plan that uses numerous native species compatible with the vegetation associated with the project site for landscaping and erosion control purposes that will be as required to be revised to include the applicant's revise project description. Furthermore, the plan indicates that only those materials designated by the County Fire Department as being a "high fire hazard" are to be removed as a part of this project and that native materials surrounding the residential structure are to "thinned" rather than "cleared" for wildland fire protection. **Special Condition No. Two** requires that the landscape plan be designed with vertical elements to partially screen and soften the visual impact of the structures with trees and shrubs as viewed from the public roads located to the west and north, from public lands located to the east, and from the Tuna Canyon Trail located to the west and south of the project site. In addition, the landscape plan shall be completed within sixty days of residential occupancy and that planting coverage be adequate to provide ninety (90) percent coverage within two (2) years and shall be repeated, if necessary, to provide such coverage.

The Commission has found that night lighting of areas in the Santa Monica Mountains area creates a visual impact to nearby scenic beaches, scenic roads, parks, and trails. In addition, night lighting may alter or disrupt feeding, nesting, and roosting activities of native wildlife species. Therefore, in order 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, the Commission limits the nighttime lighting of the property and residence to that necessary for safety as outlined in **Special Condition No. Eight**.

Finally, **Special Condition No. Nine** 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.

Therefore, the Commission finds that the project, as conditioned, minimizes impacts to public views to and along the coast and thus, is consistent with Section 30251 of the Coastal Act.

F. Local Coastal Program

Section 30604 of the Coastal Act states that:

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 permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with 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 project and accepted by the applicant. As conditioned, the proposed development 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 development, as conditioned, will not prejudice the County of Los Angeles's ability to prepare a Local Coastal Program for this area of the Santa Monica Mountains that is also consistent with the policies of Chapter 3 of the Coastal Act as required by Section 30604(a).

G. California Environmental Quality Act

The Coastal Commission's permit process has been designated as the functional equivalent of CEQA. Section 13096(a) of the California Coastal Commission's Code of

Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the project, as conditioned by any conditions of approval, to be consistent with any applicable requirements of 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 that would substantially lessen any significant adverse effects that the activity may have on the environment.

As explained in the findings set forth above in this Staff Report, and incorporated fully herein, all feasible mitigation measures have been adopted to avoid or reduce any significant adverse effects the project may have on the environment. In addition, the Commission finds that there are no other feasible alternatives available that would avoid or substantially reduce any significant adverse effects the project may have on the environment, considering the applicants right to use their property. The County has determined that this project is ministerial relative to CEQA and thus was approve in concept by the County of Los Angeles. Therefore, the proposed project, as conditioned, is consistent with the applicable requirements of CEQA.

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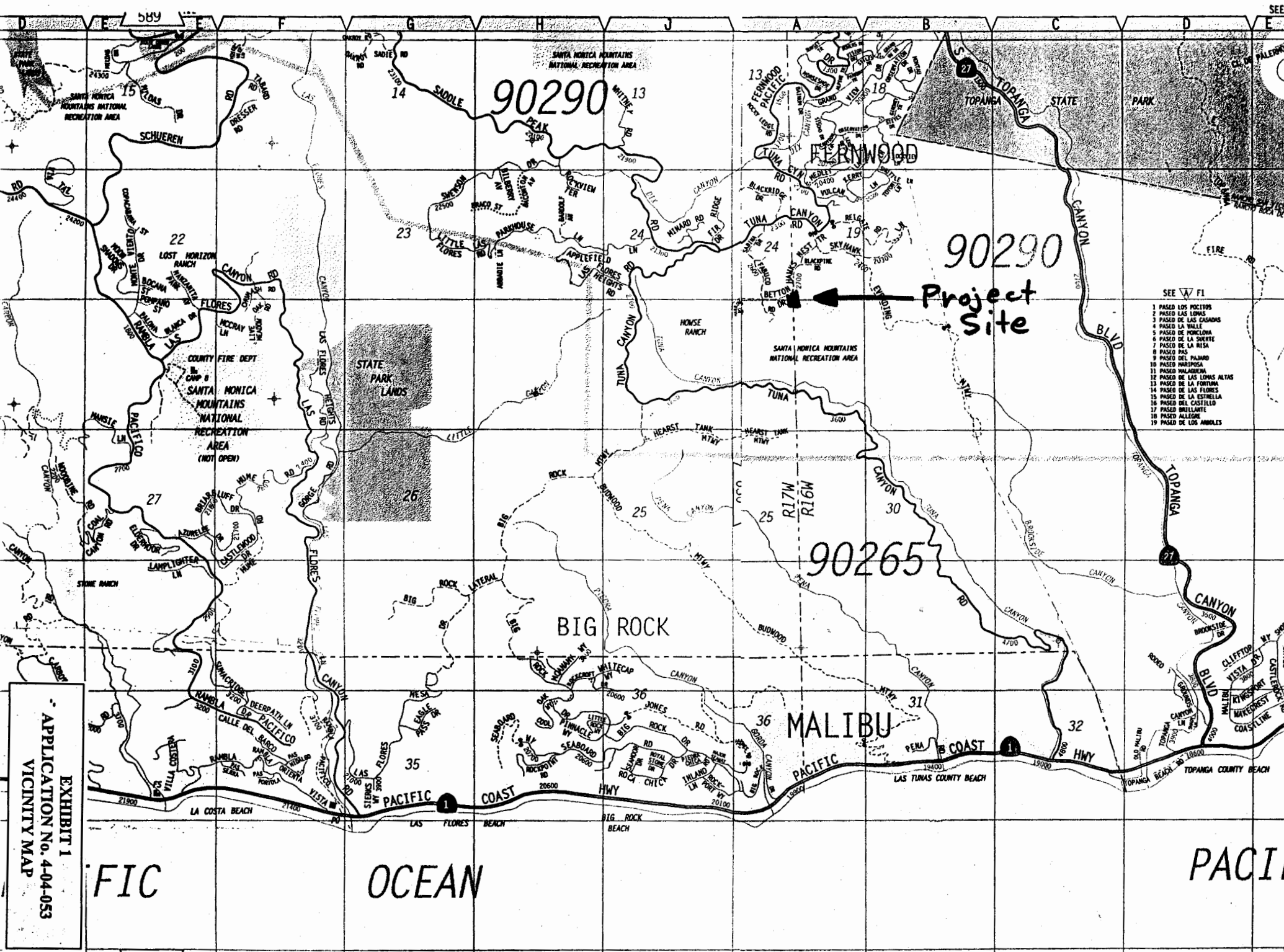
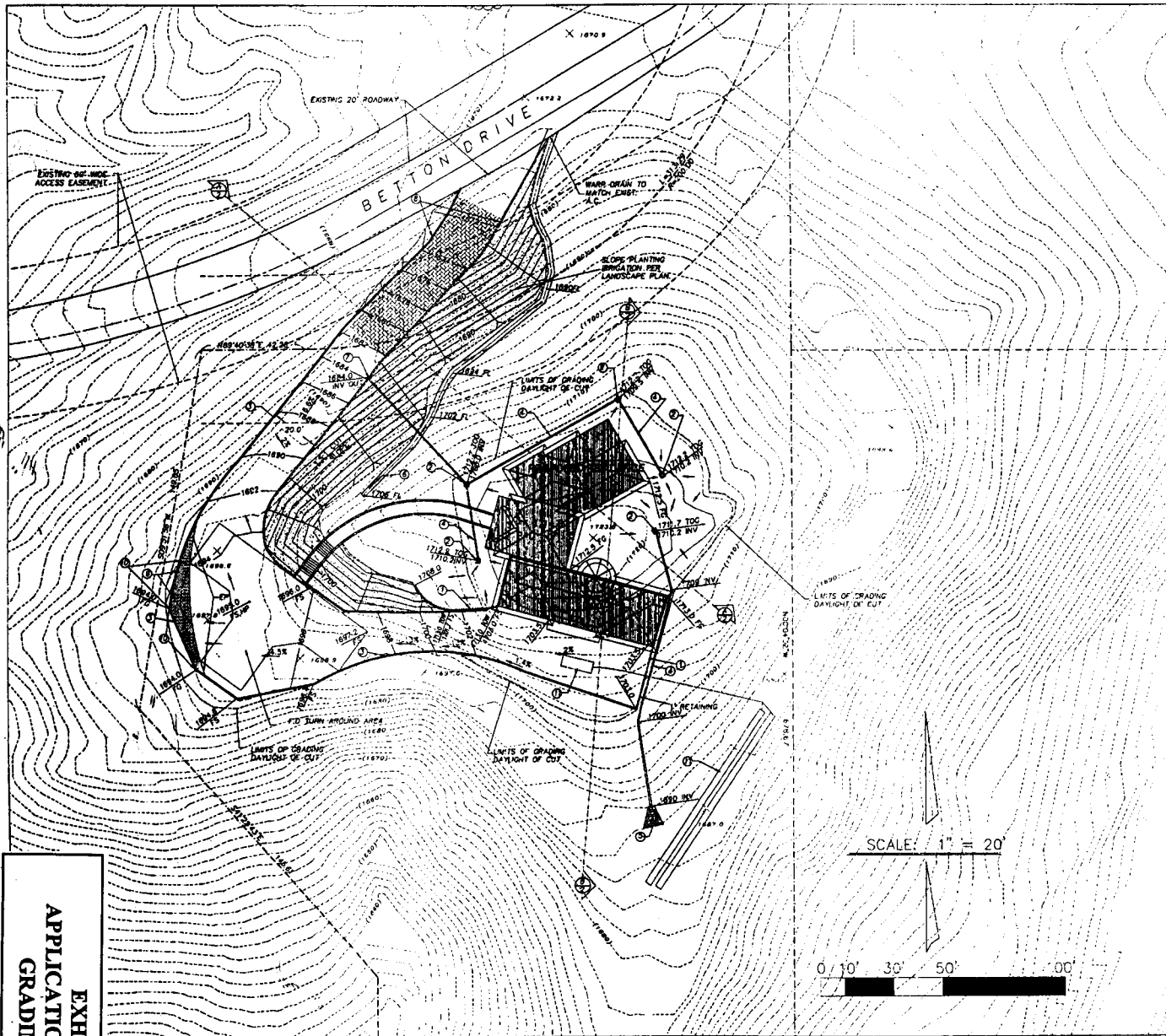


EXHIBIT 1
APPLICATION No. 4-04-053
VICINITY MAP

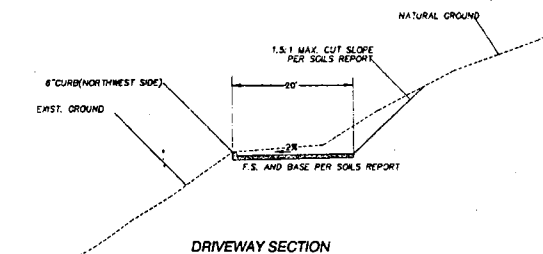
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 - 5 PASO DE PORCLOVA
 - 6 PASO DE LA SIERRA
 - 7 PASO DE LA SIERRA
 - 8 PASO PAS
 - 9 PASO DEL PALM
 - 10 PASO MALIBU
 - 11 PASO MALIBU
 - 12 PASO DE LAS LOMAS ALTAS
 - 13 PASO DE LA FORTUNA
 - 14 PASO DE LAS FLORES
 - 15 PASO DE LA ESTRELLA
 - 16 PASO DEL CASTILLO
 - 17 PASO BRILLANTE
 - 18 PASO ALLEGRE
 - 19 PASO DE LOS ANGELES

6/16/2005



- LEGEND**
- EXIST. MAJOR AND MINOR CONTOURS
- PROPOSED FINISHED CONTOURS
- PROPOSED 1.5:1 MAX. CUT SLOPE
- ⑦ HEADWALL OUTLET PER DETAIL SHEET NO. 2
- ⑧ INSTALL PERMEABLE PAVERS AS PERMANENT BMP 77'x20' MINIMUM AREA. WARP APPROACH TO PAVERS, NO CROSS FALL IN PAYER SECTION
- ⑨ TURF / BIO FILTER (TALL FESCUE) 1/2" MINIMUM AREA
- ⑩ PROVIDE 1/2" PVC DRAINS THROUGH BASE OF CURB @ 12' O.C.
- ⑪ PROPOSED SEPTIC SYSTEM PER SEPARATE PERMIT

- ⑫ MAX. RETAINING WALLS PER SEPARATE PERMIT. CUT VERTICAL UP TO 5'. REMAINDER AT 1:1 OR AS DIRECTED BY SOIL ENGINEER
- ⑬ 12"x12" PVC INLET W/ GRATE W/ FLOORGUARD PLUS FILTER INSERT MOOLE FGP 12C1
- ⑭ 6" A.C. CURB
- ⑮ 6" PVC CULVERT 2'x MIN. FALL
- ⑯ R/R-RAP OUTLET DISAPATOR PER DETAIL SHEET NO. 3
- ⑰ CONC. "V" DITCH PER DETAIL SHEET NO. 2



SUSUP NOTES

POST DEVELOPMENT:
IMPERVIOUS AREA: 0.3 ACRES
PERVIOUS AREA: 2.5 ACRES

PRE DEVELOPMENT:
IMPERVIOUS AREA: 0.0 ACRES
PERVIOUS AREA: 2.8 ACRES

ALL STRUCTURAL BMP'S SHALL BE ACCESSIBLE FOR INSPECTION AND MAINTENANCE AND SHALL BEAR A "NO CLIMBING - DRAINS TO OCEAN" SYMBOL IN TRAFFIC RATED PAINT PER DETAIL ON S-1.3 STENCIL IS AVAILABLE AT ANY BUILDING AND SAFETY DISTRICT OFFICES.

PRIOR TO COMMENCEMENT OF ANY WORK WITHIN THE ROAD RIGHT OF WAY AND/OR CONNECTION TO A COUNTY MAINTAINED STORM DRAIN AN ENCROACHMENT PERMIT FROM CONSTRUCTION DIVISION IS REQUIRED. FOR MORE INFORMATION CALL 626 456 3129 AND SAFETY DISTRICT OFFICES. (NOT APPLICABLE)

PRIOR TO COMMENCEMENT OF ANY WORK AND/OR DISCHARGE OF DRAINAGE TO A WATERBODY, A PERMIT FROM THE CALIFORNIA FISH AND GAME AND THE ARMY CORPS OF ENGINEERS MAY BE REQUIRED.

AS ENGINEER OF THE PROJECT I HAVE REVIEWED THE DEVELOPMENT PLANNING FOR STORM WATER MANAGEMENT-A MANUAL FOR THE STANDARD URBAN STORM WATER MITIGATION PLAN (SUSUP), AND HAVE PROPOSED THE IMPLEMENTATION OF THE "PERMANENT" BEST MANAGEMENT PRACTICES (BMP'S) APPLICABLE TO EFFECTIVELY MINIMIZE THE NEGATIVE IMPACTS OF THE STORM WATER RUNOFF. THE SELECTED BMP'S WILL BE INSTALLED PER THE APPROVED PLANS AND AS PER RECOMMENDED BY THE PRODUCT MANUFACTURER AS APPLICABLE.

DAVID P. HOLMES ENGINEER OF RECORD



THE SHEPARD RESIDENCE

GP# 0405030001

09-22-04

DESIGN BY	COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS, DIVISION OF BUILDING & SAFETY, DRAINAGE AND GRADING	SPEC. NO.	3
CHECKED BY		JOB. NO.	OF
DATE		DRAWING NO.	3

SINGLE LOT RESIDENTIAL

GRADING PLAN
2000 WEST BETTON DRIVE
HALLIBUR, CALIFORNIA

EXHIBIT 4
APPLICATION NO. 4-04-053
GRADING PLAN

mes Enterprises Inc. (805) 532-1571
ctural and Civil Engineering
Wicks Rd. Moorpark, CA. 93021
fax: (805) 532-1596

PROPERTY OWNER:
KEVIN SHEPARD
814 Camino Del Sol
Newbury Park, CA 91320
(805) 795-3434

DATE	REVISION	BY

DEPARTMENT OF PUBLIC WORKS
APPROVED BY

goodwin design
1923 De La Vina Street, Suite 6
Santa Barbara, California 93101
(805) 459-6099

CONSULTANT:
STRUCTURAL ENGINEER
Taylor & Taylor Consulting Engineers, Inc.
11111 Santa Monica Boulevard, Suite 200
Los Angeles, CA 90025
(805) 528-2515
PROJECT NUMBER: TAY
20020 Ventura Boulevard, Suite 200
Van Nuys, CA 91411
(818) 247-2000

THE SHEPARD RESIDENCE
25520 BETTON DRIVE
TOPANGA CA 90260

OWNER & ARCHITECT:
KEVIN SHEPARD
11111 Santa Monica Boulevard, Suite 200
Los Angeles, CA 90025
(805) 786-5424

NOTES:
1. THIS SET OF DRAWINGS IS THE PROPERTY OF TAYLOR & TAYLOR CONSULTING ENGINEERS, INC. AND IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF TAYLOR & TAYLOR CONSULTING ENGINEERS, INC.

1. SHEET TITLE: FIRST FLOOR
2. SHEET NUMBER: 10007
3. SHEET DATE: 10/07

4. SHEET SCALE: 1/8" = 1'-0"
5. SHEET SIZE: 31 1/2" x 41 1/2"

6. SHEET TITLE: 1ST STORY FLOOR PLAN

7. SHEET NUMBER: A-1

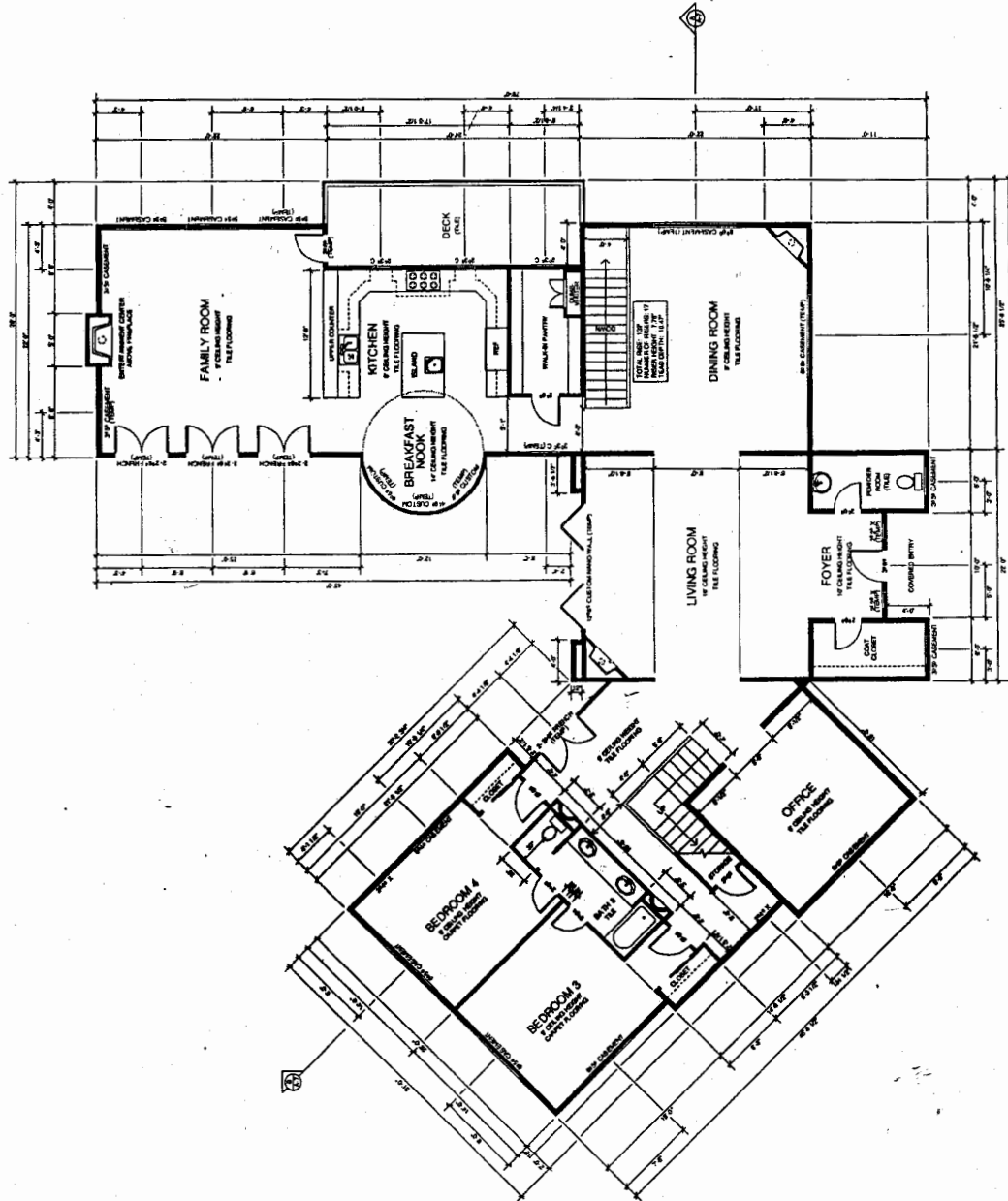



EXHIBIT 5
APPLICATION No. 4-04-053
FIRST FLOOR PLAN



 goodwin design

 1923 De La Vina Street, Suite 6

 Santa Barbara, California 93101

 (805) 459-6099

CONSULTANT
 STRUCTURAL ENGINEER
 1700 E. Santa Barbara Avenue
 Santa Barbara, CA 93102
 (805) 963-2275
 ENGINEER
 2200 Wilshire Boulevard, Suite 207
 Santa Monica, CA 90404
 (310) 347-9888

PROJECT NAME
 THE SHEPARD RESIDENCE
 2538 BETTON DRIVE
 TOPANCA, CA 93064

OWNER
 KEVIN SHEPARD
 1000 E. Santa Barbara Avenue
 Santa Barbara, CA 93102
 (805) 963-2275

DRAWING NOTES
 1. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 2. FINISHES ARE TO BE DETERMINED BY THE ARCHITECT.
 3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CALIFORNIA BUILDING CODE AND ALL APPLICABLE LOCAL ORDINANCES.
 4. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
 5. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE DESIGN OF THE STRUCTURAL SYSTEM ONLY. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION PROVIDED BY THE ARCHITECT OR OTHER SOURCES.
 6. THE ENGINEER'S DESIGN IS BASED ON THE ASSUMPTIONS SET FORTH IN THE NOTES AND SPECIFICATIONS.
 7. THE ENGINEER'S DESIGN IS BASED ON THE ASSUMPTIONS SET FORTH IN THE NOTES AND SPECIFICATIONS.
 8. THE ENGINEER'S DESIGN IS BASED ON THE ASSUMPTIONS SET FORTH IN THE NOTES AND SPECIFICATIONS.
 9. THE ENGINEER'S DESIGN IS BASED ON THE ASSUMPTIONS SET FORTH IN THE NOTES AND SPECIFICATIONS.
 10. THE ENGINEER'S DESIGN IS BASED ON THE ASSUMPTIONS SET FORTH IN THE NOTES AND SPECIFICATIONS.

Drawn By	CAD
Checked By	LPD
Date	April 22, 2008
Scale	3/16" = 1'-0"
Job No.	1000

SHEET NO.
 2ND STORY
 FLOOR PLAN

SHEET NO.
 A-2

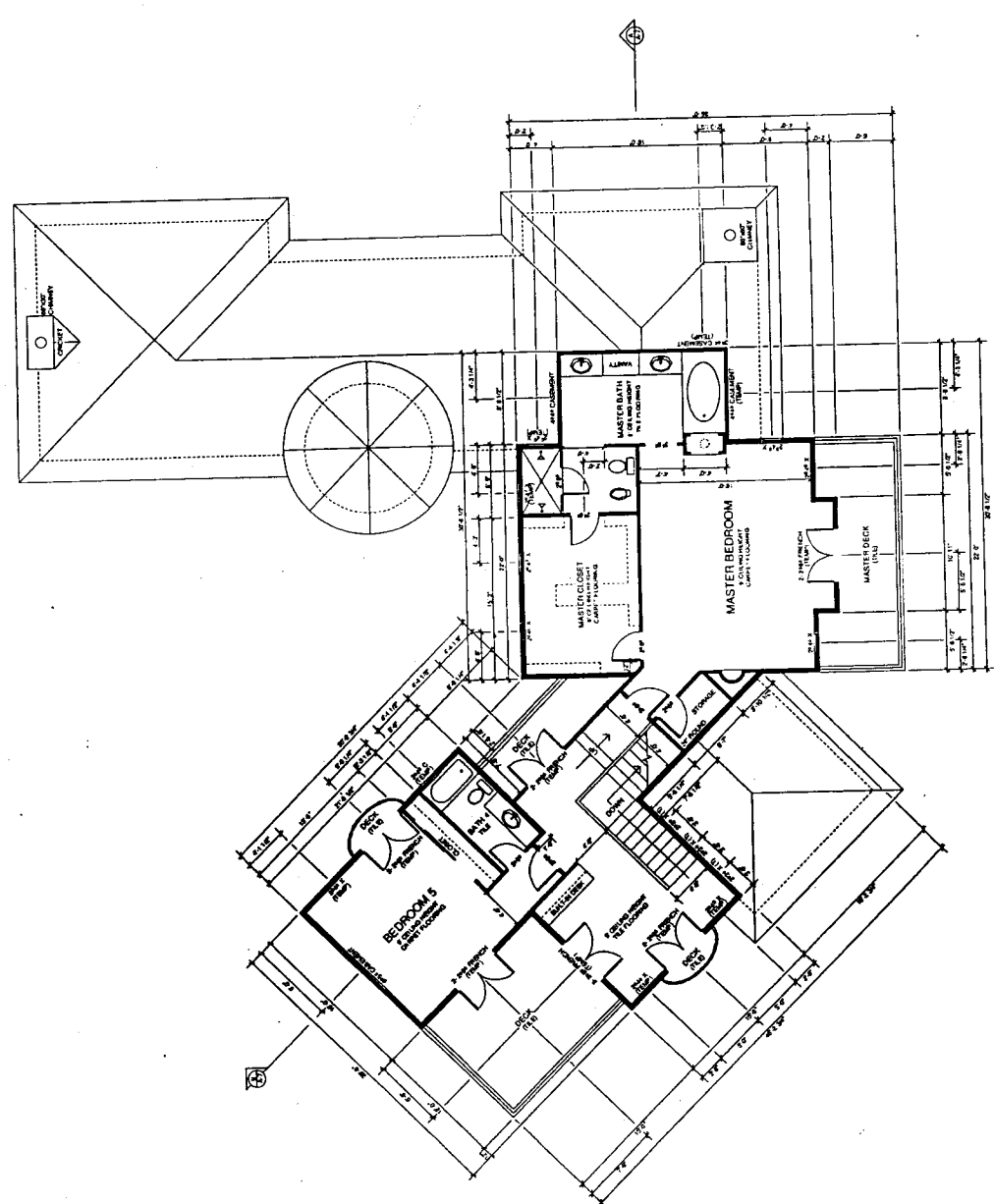


EXHIBIT 6
 APPLICATION No. 4-04-053
 SECOND FLOOR PLAN

goodwin design

1923 De La Vina Street, Suite 6
Santa Barbara, California 93101
(805) 459-6099

STRUCTURAL ENGINEER

Taylor & Taylor Consulting Engineers, Inc.
221 West Riverside Blvd.
Los Angeles, CA 90007
(805) 538-2515

PROPERTY CONSULTANT

2200 Ventura Boulevard, Suite 207
Malibu, California 90263
(310) 317-8888

THE SHEPARD RESIDENCE

20500 BETTON DRIVE
TOPANGA, CA 92060

Owner: SHEPARD

844 Canyon Blvd.
Beverly Hills, CA 90210
(805) 788-3434

Contractor: [Redacted]

Architect: [Redacted]

Contract No.: [Redacted]

Project No.: [Redacted]

Drawn By: LVS

Date: April 22, 2004

Scale: 3/16" = 1'-0"

Job No.: 0007

Garage Level Floor Plan

A-3

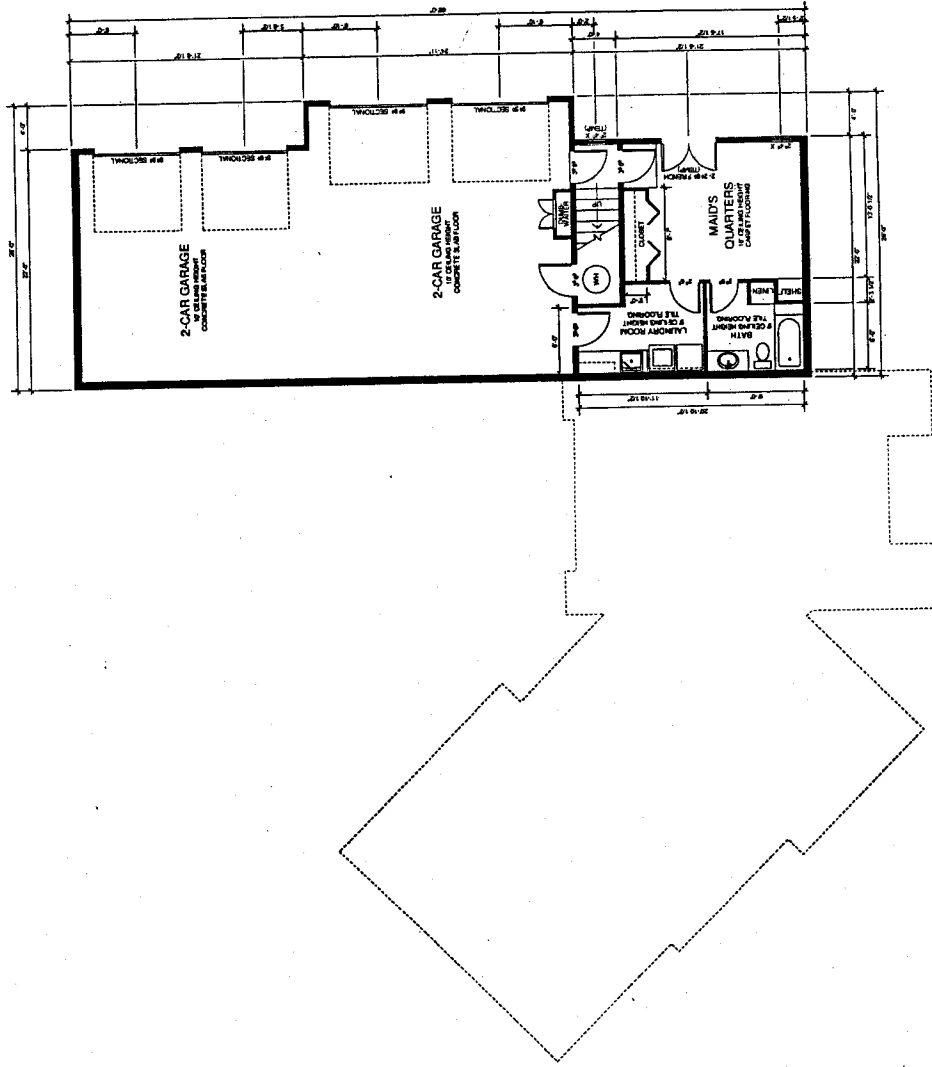


EXHIBIT 7
APPLICATION No. 4-04-053
GARAGE FLOOR PLAN

dwinn design

STRUCTURAL ENGINEER
Tayari & Sytan Consulting Engineers, Inc.
2231 Bayview Heights Drive
Los Oaks, CA 91403
(805) 528-2015

ENERGY CONSULTANT
Ecolife, Inc.
22028 Ventura Boulevard, Suite 207
Woodland Hills, CA 91364
(818) 347-2506

Project Name: THE SHEPARD RESIDENCE
20520 BETTON DRIVE
TOP ANGA, CA 90290

KEVIN SHEPARD
814 Camino Del Sol
Newbury Park, CA 91320
(805) 796-3434

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Drawn By:	CJS
Credited By:	LPO
Date:	April 22, 2004
Scale:	3/16" = 1'-0"
Job No.:	1007

**ELEVATIONS
(NORTH - SOUTH)**

A-4

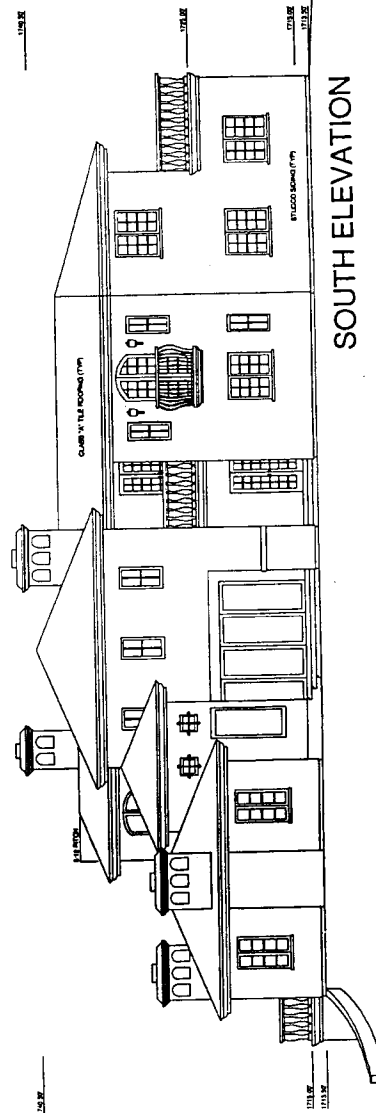
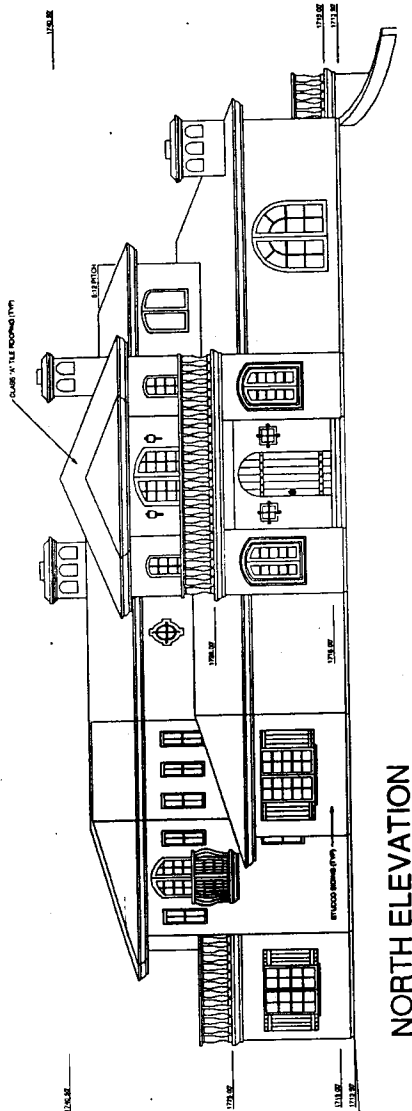


EXHIBIT 8
APPLICATION No. 4-04-053
NORTH & SOUTH
ELEVATIONS

goodwin design
1923 De La Vina Street, Suite 6
Santa Barbara, California 93101
(805) 459-6099

STRUCTURAL ENGINEER
Terry & Lynn Consulting Engineers, Inc.
1111 E. Main Street, Suite 200
Santa Barbara, CA 93101
(805) 338-2010
BRUNY CONSULTANT
20022 Ventura Boulevard, Suite 200
Van Nuys, CA 91411
(818) 247-0099

THE SHEPARD RESIDENCE
20530 BETTON DRIVE
TOPANEA, CA 90090

OWNER
KEVIN SHEPARD
1111 E. Main Street, Suite 200
Santa Barbara, CA 93101
(805) 786-3434

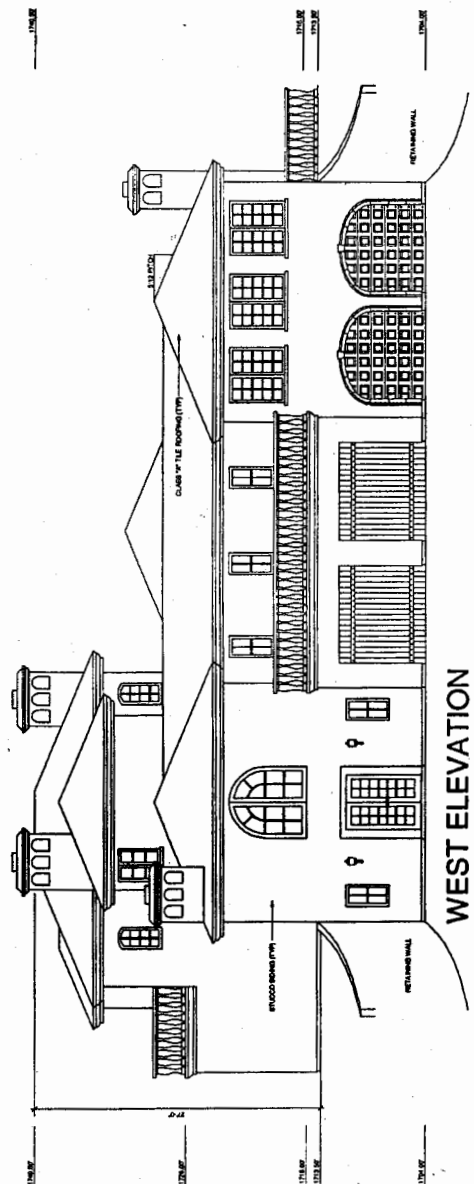
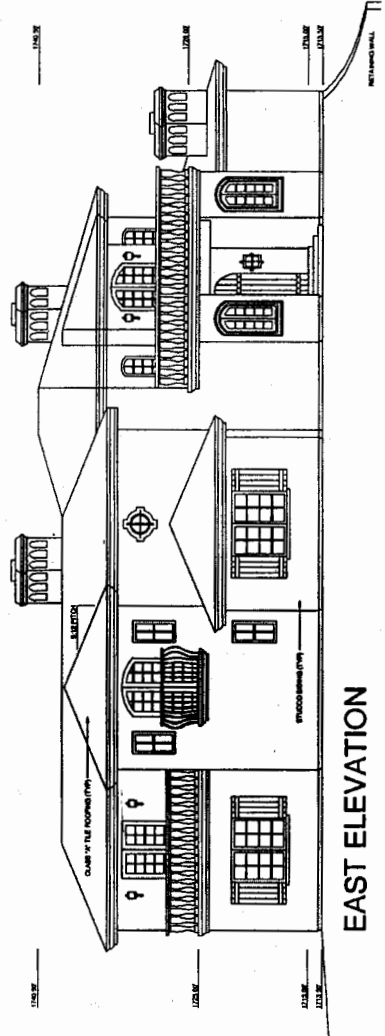
PROPERTY NOTES:
This drawing is prepared for the use of the owner and is not to be used for any other purpose without the written consent of the engineer.
The engineer is not responsible for the accuracy of the information provided by the owner or for the results of any construction not shown on this drawing.
The engineer is not responsible for the construction of any foundation or other structural member not shown on this drawing.
The engineer is not responsible for the construction of any other structural member not shown on this drawing.

Project No.	1007
Client Name	Kevin Shepard
Project Name	The Shepard Residence
Project Address	20530 Betton Drive, Topanea, CA 90090
Project Date	April 22, 2004
Project Scale	1/8" = 1'-0"
Project Notes	1007

Drawn By	CAS
Checked By	LPS
Date	April 22, 2004
Scale	1/8" = 1'-0"
Job No.	1007

ELEVATIONS
(EAST - WEST)

Sheet No. A-5



goodwin design
1923 De La Vina Street, Suite 6
Santa Barbara, California 93101
(805) 459-6099

STRUCTURAL ENGINEER
TAMM & SYRIS Consulting Engineers, Inc.
1201 Laguna Street, Suite 200
Santa Barbara, CA 93101
(805) 336-3515
ENERGY CONSULTANT
TAMM & SYRIS Consulting Engineers, Inc.
1201 Laguna Street, Suite 200
Santa Barbara, CA 93101
(805) 336-3515

THE SHEPARD RESIDENCE
2030 BETION DRIVE
TOP ANGA, CA 92090

Owner: SHEPARD
114 Camino Del Sur
Santa Barbara, CA 93103
(805) 736-3634

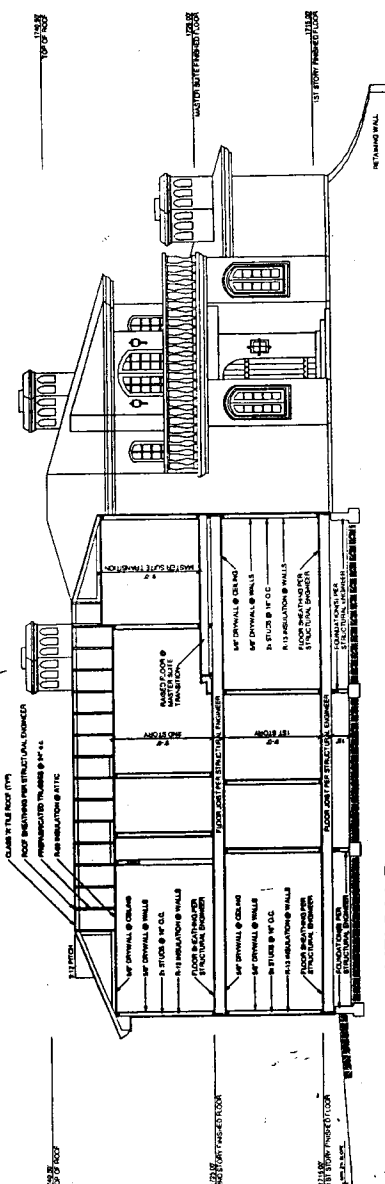
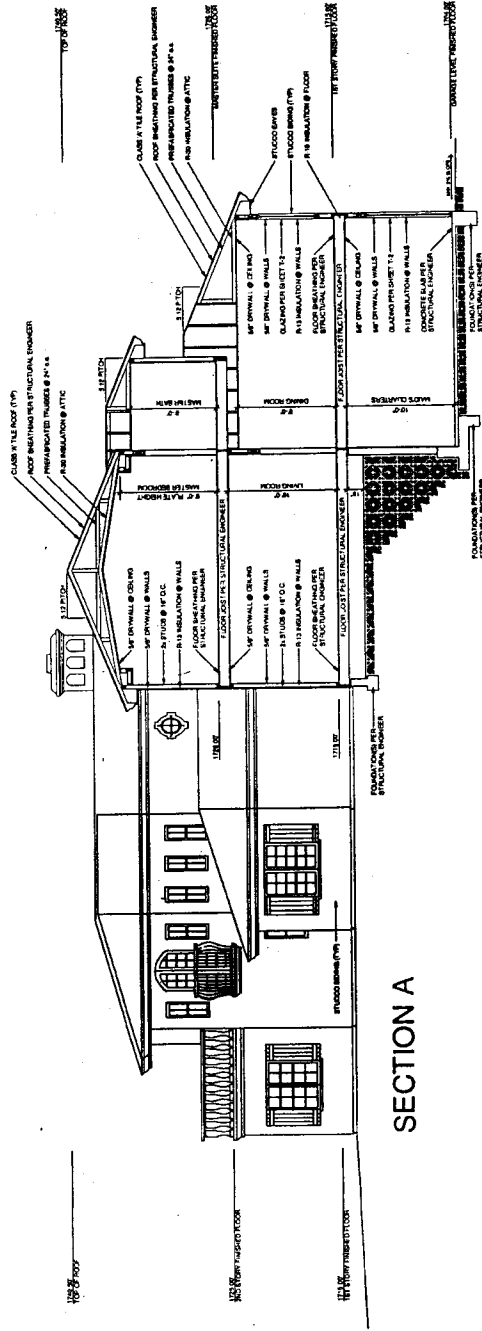
Design Notes:
1. Foundation and wall design is based on the geotechnical report by Tamm & Syris Consulting Engineers, Inc. dated 10/1/03.
2. All walls are to be constructed of concrete masonry units (CMU) with a minimum compressive strength of 1500 psi.
3. All floors are to be constructed of reinforced concrete slabs on walls.
4. All roofs are to be constructed of reinforced concrete slabs on walls.
5. All exterior walls are to be finished with stucco and a 1/2" thick layer of cement plaster.
6. All interior walls are to be finished with drywall and a 1/2" thick layer of cement plaster.
7. All floors are to be finished with a 1/2" thick layer of cement plaster and a 1/2" thick layer of tile or stone.

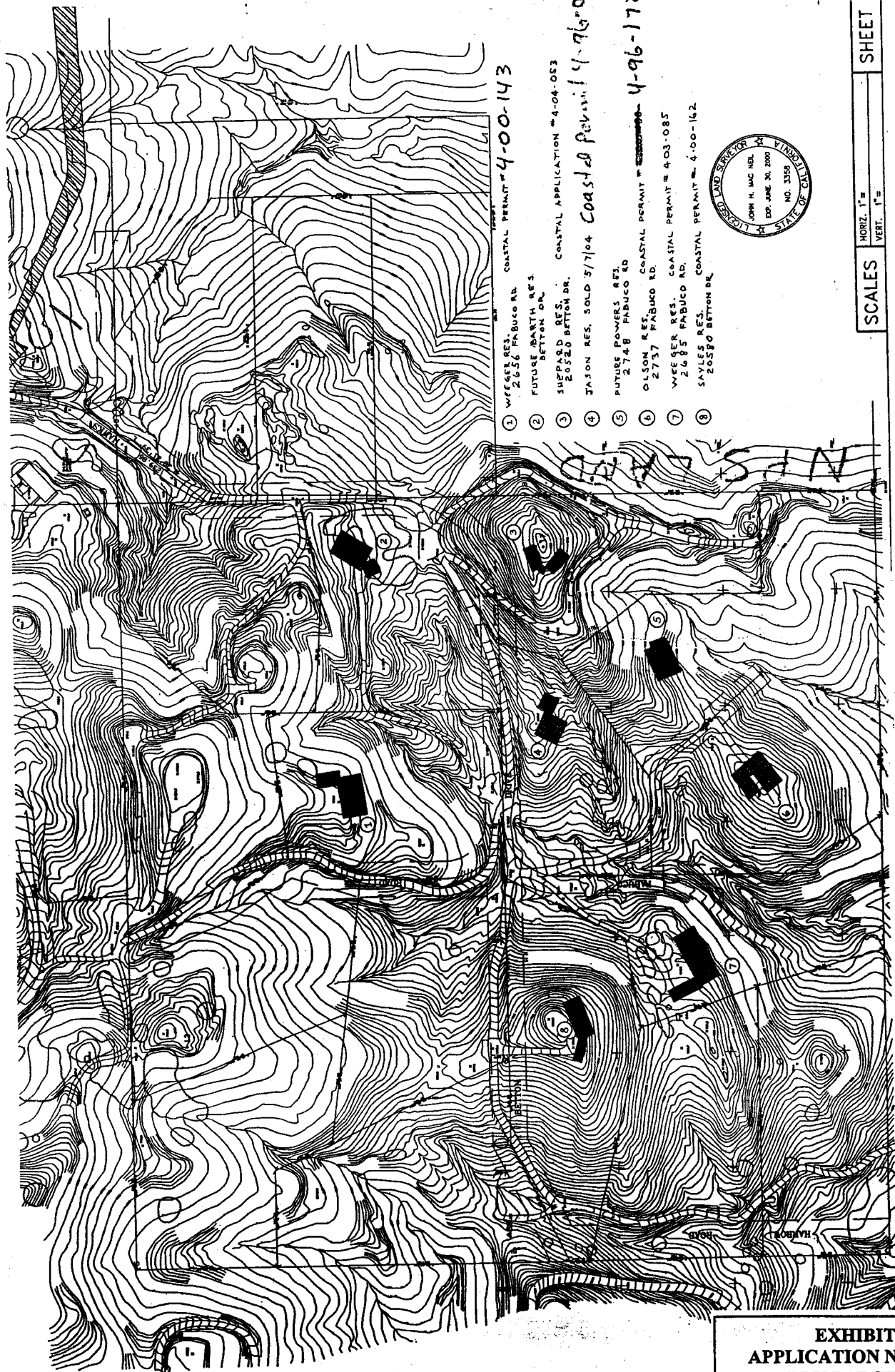
Revisions:
1. 10/1/03
2. 10/1/03
3. 10/1/03
4. 10/1/03
5. 10/1/03
6. 10/1/03
7. 10/1/03
8. 10/1/03
9. 10/1/03
10. 10/1/03

Drawn By: C.J.D.
Checked By: L.P.G.
Date: April 22, 2004
Scale: 3/16" = 1'-0"
Sheet No.: 1007

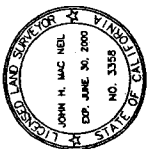
Sheet Title:
STRUCTURAL SECTION

Sheet No.: A-7





- 1 WIFEZ RES. FABUCO RD. COASTAL PERMIT #4-00-143
- 2 FUTURE BIRTH RES. BOTTOM DR.
- 3 SHEPARD RES. COASTAL APPLICATION #4-04-053
- 4 JASON RES. SOLD 5/1/04 Coastal Permit #4-96-025
- 5 FUTURE POWERS RES. 2748 FABUCO RD. 4-96-172
- 6 OLSON RES. FABUCO RD. COASTAL PERMIT #4-03-085
- 7 WIFEZ RES. COASTAL PERMIT #4-03-085
- 8 SAVLES RES. COASTAL PERMIT #4-00-162
- 9 20520 BOTTOM DR.



SCALES
HORIZ. 1" =
VERT. 1" =

SHEET

EXHIBIT 11
APPLICATION No. 4-04-053
NEARBY PARCEL STATUS

ENVIRONMENTAL REVIEW BOARD

Case No. Plot Plan 49169
Location 20520 Betton Drive, Topanga
Applicant Kevin Sheppard
Request 6,132 sq. ft. two story single family residence with four car attached garage, driveway and septic system on a vacant 2.45 acre lot
Resource Category Tuna Canyon Significant Watershed

ERB Meeting Date: January 26, 2004

ERB Evaluation: ☐ Consistent ☒ Consistent after Modifications
☐ Inconsistent

ERB Comments and Recommendations:

- Fuel modification Zone B should be eliminated and replaced by an expanded Zone C to lessen potential erosion and impacts to native vegetation.
- Consult with the Fuel Modification Unit of the Los Angeles County Fire Department and the National Parks service regarding clearance of vegetation on the parcel to the east of the proposed building site.
- Irrigation of landscaping is unacceptable, except within Zone A, where drip irrigation should be used; ERB recommends against many of the species on the Recommended Plants list; *Umbellularia californica*, *Juglans californica* and *Heteromeles arbutifolia* are acceptable trees; remove non-indigenous species from the landscaping plan; *Juniperus californica* is likely to be rejected by the Fire Department and is not indigenous to this area; *Ceanothus crassifolius* is also not indigenous to this location.
- Use wood chips and mulch generated from chipping of existing on-site vegetation instead of planting ground cover in Zone C.
- Exterior night lighting shall be directed downward, of low intensity, at low height and shielded to prevent illumination of surrounding properties and undeveloped areas; security lighting, if any is used, shall be on a motion detector.
- Use earth tone colors of the surrounding areas on all structures, to minimize visual impacts to the viewshed.
- ERB is very concerned with the continuing cumulative impacts generated by single-family residences constructed within Upper Tuna Canyon Watershed.

Staff Recommendation: ☒ Consistent ☐ Consistent after Modifications
☐ Inconsistent

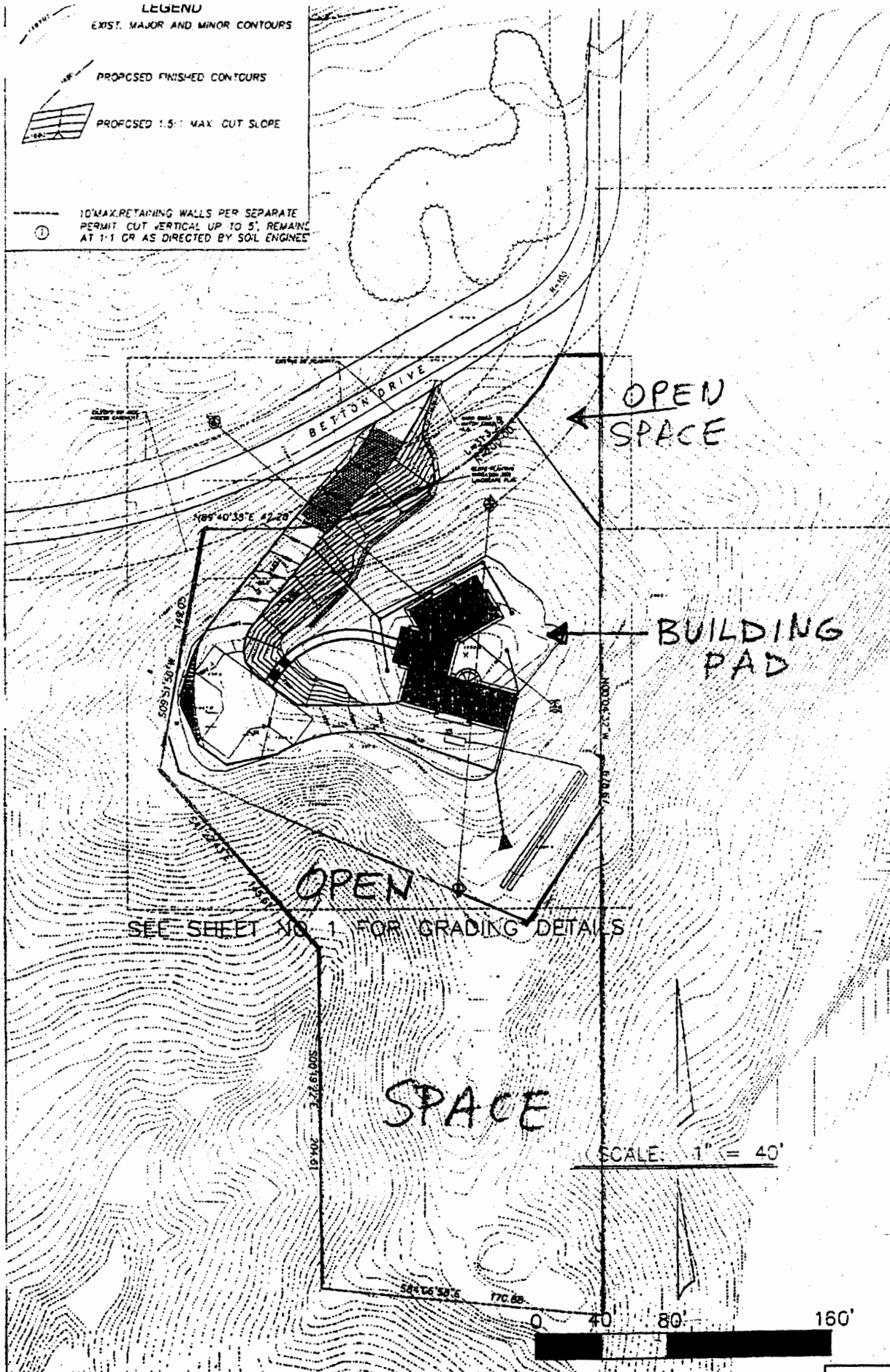
Suggested Modifications: - Submit a landscape plan to the Department of Regional Planning for review prior to submittal to the Fire Department for fuel modification approval; landscaping shall provide an erosion preventative function and shall consist of locally indigenous plants including coast range melic (*Melica imperfecta*) and peak rushrose (*Helianthemum scoparium*).

LEGEND
EXIST. MAJOR AND MINOR CONTOURS

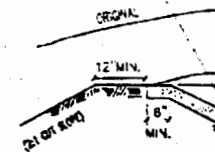
PROPOSED FINISHED CONTOURS

PROPOSED 1.5:1 MAX. CUT SLOPE

10' MAX. RETAINING WALLS PER SEPARATE PERMIT CUT VERTICAL UP TO 5', REMAINING AT 1:1 OR AS DIRECTED BY SOIL ENGINEER



LONGITUDINAL SLOPE SHALL BE NOT LESS THAN 2%



TOP OF CUT INTERCEPTOR OR MATERIAL AS DETERMINED EROSION, SLUGHING, OR CR



Holmes Enterprises Inc.
Structural and Civil Engineering
200 Weeks Rd. Moorpark, CA. 93021

(805) 532-1571
fax: (805) 532-596

PROPERTY OWNER:
KEVIN SHEPARD
614 Camino Del Sol
Newbury Park, CA 91320
(805) 796-3434

EXHIBIT 14
APPLICATION No. 4-04-053
OPEN SPACE DEED
RESTRICTION AREA

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400



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 15
APP NO. 4-04-053
ESHA Memo

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. Sorice 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 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

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 (CNDDB) lists purple needlegrass habitat as a community needing priority monitoring and restoration. The CNDDB 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, wren-tit, 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 chaparral (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.