

CALIFORNIA COASTAL COMMISSION

SOUTH CENTRAL COAST AREA
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Filed: 3/29/07
180th Day: 9/25/07
Staff: Melissa Hetrick
Staff Report: 8/23/07
Hearing Date: 9/05/07



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STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-04-030

APPLICANT: Denis Cordova

AGENT: Brent Schneider

PROJECT LOCATION: 253 Vera Canyon Road, Malibu (Los Angeles County; Assessor's Parcel Number 4471-007-006)

PROJECT DESCRIPTION: The applicant proposes to construct a 2,061 sq. ft. two story, 29 foot high single family residence with attached 534 sq. ft. garage; 116 sq. ft. of second story decks; septic system; driveway, retaining walls; 261 cu. yds of removed and recompacted soil; and 401 cu. yds. of grading (314 cu. yds cut; 87 cu. yds fill; 227 cu. yds. export).

LOCAL APPROVALS RECEIVED: County of Los Angeles Fire Department Preliminary Fuel Modification Plan Approval; County of Los Angeles Fire Department Approval of Driveways, Access Roads, and Turnarounds; County of Los Angeles Regional Planning Approval in Concept; and Angeles County Department of Health Services approval septic system.

SUBSTANTIVE FILE DOCUMENTS: "Gross Structural Area Calculation and Map, 253 Vera Canyon, Malibu," prepared by David D. Awrey, RCE in March 2007; "Preliminary Geotechnical Engineering and Percolation Test Report, 253 Vera Canyon, Malibu" prepared by West Coast Geotechnical on June 10, 2003; "Update Percolation Test Investigation, 253 Vera Canyon, Malibu," prepared by West Coast Geotechnical on January 20, 2004; and "Addendum Geotechnical Engineering Report, 253 Vera Canyon, Malibu" prepared by West Coast Geotechnical on February 9, 2004.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends **APPROVAL** of the proposed project with **TWELVE (12) SPECIAL CONDITIONS** regarding 1) plans conforming to geologic recommendation, 2) drainage and polluted runoff control plans, 3) landscaping and erosion control, 4) assumption of risk, 5) structural appearance, 6) lighting, 7) removal of excess excavated material, 8) removal of natural vegetation, 9) future development restriction, 10) deed restriction, 11) oak tree protection and monitoring, and 12) revised septic system design.

The applicant proposes to construct a 2,061 sq. ft, two story, 29 foot high single family residence with attached 534 sq. ft. garage; 116 sq. ft. of second story decks; septic system; driveway, retaining walls; 261 cu. yds of removed and recompact soil; and 401 cu. yds. of grading (314 cu. yds cut; 87 cu. yds fill; 227 cu. yds. export).

The project location is a 0.19-acre lot (APN 4471-007-006) in the Vera Canyon Small Lot Subdivision, southwest of the intersection of Kanan Dume Road and Mulholland Highway in the Santa Monica Mountains. The lot is situated on the northwest corner of Vera Canyon Road and Charles Road. The project and surrounding areas are designated as a Significant Watershed area in the Malibu/Santa Monica Mountains Land Use Plan certified by the Commission in 1986. The subject lot was cleared prior to the effective date of the Coastal Act in 1977 and has remained cleared since that time due to the close proximity of surrounding residences. A single oak tree and a few non-native eucalyptus and pine trees, however, remain on the western boundary of the lot. The proposed residential development would be located outside of the protective zone of all oak trees onsite.

A tributary to Zuma Creek is located on the east side of Vera Canyon Road. The stream is bordered on both sides by a dense stand of oak trees that form a continuous riparian habitat considered environmentally sensitive habitat area. The proposed residence and leach fields for the septic system would be located within 50 feet of the oak riparian canopy. There are no feasible alternate locations or designs for the residence and septic system to move this development further away from the stream and riparian area. The project, therefore, does not meet the standards for buffers to streams and riparian areas (typically 100 feet) and is inconsistent with Sections 30231 and 30240 of the Coastal Act, as well as associated standards in the Malibu/Santa Monica Mountains LUP. However, denial of the project on these basis could deprive the applicant's property of all reasonable economic use. In order to allow a reasonable economic use of the property, while still complying with Section 30231 and 30240 to the extent feasible, Commission staff are recommending approval of the project with several conditions aimed at mitigating potential impacts of the project on water quality and riparian ESHA.

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

STAFF RECOMMENDATION:

I. Approval with Conditions

The staff recommends that the Commission adopt the following resolution:

MOTION: *I move that the Commission approve Coastal Development Permit No. 4-04-030 pursuant to the staff recommendation.*

STAFF RECOMMENDATION OF APPROVAL:

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

RESOLUTION TO APPROVE THE PERMIT:

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

II. Standard Conditions

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

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

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

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

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

III. Special Conditions

1. Plans Conforming to Geologic Recommendations

By acceptance of this permit, the applicant agrees to comply with the recommendations contained in the "Preliminary Geotechnical Engineering and Percolation Test Report, 253 Vera Canyon, Malibu," "Update Percolation Test Investigation, 253 Vera Canyon, Malibu," and "Addendum Geotechnical Engineering Report, 253 Vera Canyon, Malibu" prepared by West Coast Geotechnical on June 10, 2003, January 20, 2004; and February 9, 2004 respectively. These recommendations, including recommendations concerning foundations, grading, septic, and drainage, shall be incorporated into all final design and construction plans, which must be reviewed and approved by the consultant prior to commencement of development.

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

2. Drainage and Polluted Runoff Control Plans

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

- (a) Selected BMPs (or suites of BMPs) shall be designed to treat, infiltrate or filter the amount of stormwater runoff produced by all storms up to and including the 85th percentile, 24-hour runoff event for volume-based BMPs, and/or the 85th percentile, 1-hour runoff event, with an appropriate safety factor (i.e., 2 or greater), for flow-based BMPs.
- (b) Runoff shall be conveyed off site in a non-erosive manner.
- (c) Energy dissipating measures shall be installed at the terminus of outflow drains.
- (d) The plan shall include provisions for maintaining the drainage system, including structural BMPs, in a functional condition throughout the life of the approved

development. Such maintenance shall include the following: (1) BMPs shall be inspected, cleaned and repaired when necessary prior to the onset of the storm season, no later than September 30th each year and (2) should any of the project's surface or subsurface drainage/filtration structures or other BMPs fail or result in increased erosion, the applicant/landowner or successor-in-interest shall be responsible for any necessary repairs to the drainage/filtration system or BMPs and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the applicant shall submit a repair and restoration plan to the Executive Director to determine if an amendment or new coastal development permit is required to authorize such work.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

3. Landscaping and Erosion Control Plans

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

A) Landscaping Plan

- 1) All graded & disturbed areas on the subject site shall be planted and maintained for erosion control purposes within (60) days of receipt of the certificate of occupancy for the residence. To minimize the need for irrigation all landscaping shall consist primarily of native/drought resistant plants, as listed by the California Native Plant Society, Santa Monica Mountains Chapter, in their document entitled Recommended List of Plants for Landscaping in the Santa Monica Mountains, dated 2007. All native plant species shall be of local genetic stock. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be employed or allowed to naturalize or persist on the site. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized or maintained within the property.
- 2) All cut and fill slopes shall be stabilized with planting at the completion of final grading. Planting shall be primarily of native plant species indigenous to the Santa Monica Mountains using accepted planting procedures, consistent with fire safety requirements. All native plant species shall be of local genetic stock. Such

planting shall be adequate to provide 90 percent coverage within two (2) years, and this requirement shall apply to all disturbed soils;

- 3) Plantings will be maintained in good growing condition throughout the life of the project and, whenever necessary, shall be replaced with new plant materials to ensure continued compliance with applicable landscape requirements;
- 4) Vegetation within 30 feet of the proposed house may be removed to mineral earth, vegetation within a 200-foot radius of the main structure may be selectively thinned in order to reduce fire hazard. However, such thinning shall only occur in accordance with an approved long-term fuel modification plan submitted pursuant to this special condition. The fuel modification plan shall include details regarding the types, sizes and location of plant materials to be removed, and how often thinning is to occur. In addition, the applicant shall submit evidence that the fuel modification plan has been reviewed and approved by the Forestry Department of Los Angeles County. Irrigated lawn, turf and ground cover planted within the thirty foot radius of the proposed house shall be selected from the most drought tolerant species or subspecies, or varieties suited to the Mediterranean climate of the Santa Monica Mountains.
- 5) Rodenticides containing any anticoagulant compounds (including, but not limited to, Warfarin, Brodifacoum, Bromadiolone or Diphacinone) shall not be used.
- 6) No permanent irrigation is permitted within the protected zone (defined as a five foot radius outside the dripline, or 15 feet from the trunk, whichever is greater) of any oak tree on or adjacent to the project site, and landscaping within the oak tree protected zones shall be limited to native oak tree understory plant species.

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

B) Interim Erosion Control Plan

- 1) The plan shall delineate the areas to be disturbed by grading or construction activities and shall include any temporary access roads, staging areas and stockpile areas. The natural areas on the site shall be clearly delineated on the project site with fencing or survey flags.
- 2) The plan shall specify that grading shall take place only during the dry season (April 1 – October 31). This period may be extended for a limited period of time if the situation warrants such a limited extension, if approved by the Executive Director. The applicant shall install or construct temporary sediment basins (including debris basins, desilting basins, or silt traps), temporary drains and swales, sand bag barriers, silt fencing, and shall stabilize any stockpiled fill with

geofabric covers or other appropriate cover, install geotextiles or mats on all cut or fill slopes, and close and stabilize open trenches as soon as possible. These erosion control measures shall be required on the project site prior to or concurrent with the initial grading operations and maintained throughout the development process to minimize erosion and sediment from runoff waters during construction. All sediment should be retained on-site, unless removed to an appropriate, approved dumping location either outside of the coastal zone or within the coastal zone to a site permitted to receive fill.

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

C) Monitoring.

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

4. Assumption of Risk, Waiver of Liability and Indemnity

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from wildfire; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's

approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards

5. Structural Appearance

Prior to the issuance of the coastal development permit, the applicant shall submit for the review and approval of the Executive Director, a color palette and material specifications for the outer surface of all structures authorized by the approval of Coastal Development Permit No. 4-04-030. The palette samples shall be presented in a format not to exceed 8½" x 11" x ½" in size. The palette shall include the colors proposed for the roofs, trims, exterior surfaces, driveways, retaining walls, and other structures authorized by this permit. Acceptable colors shall be limited to colors compatible with the surrounding environment (earth tones) including shades of green, brown and gray with no white or light shades and no bright tones. All windows shall be comprised of non-glare glass.

The approved structures shall be colored and constructed with only the colors and window materials authorized pursuant to this special condition. Alternative colors or materials for future repainting or resurfacing or new windows may only be applied to the structures authorized by Coastal Development Permit No. 4-04-030 if such changes are specifically authorized by the Executive Director as complying with this special condition.

6. Lighting Restriction

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

7. Removal of Excess Excavated Material

Prior to the issuance of the Coastal Development Permit, the applicant shall provide evidence to the Executive Director of the location of the disposal site for all excess excavated material from the site. If the disposal site is located in the Coastal Zone, the disposal site must have a valid coastal development permit for the disposal of fill material. If the disposal site does not have a coastal permit, such a permit will be required prior to the disposal of material.

8. Removal of Natural Vegetation

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

9. Future Development Restriction

This permit is only for the development described in Coastal Development Permit No. 4-04-030. Pursuant to Title 14 California Code of Regulations Section 13250(b)(6) the exemptions otherwise provided in Public Resources Code Section 30610(a) shall not apply to any future development on any portion of the parcel. Accordingly, any future improvements to any portion of the property, including but not limited to the residence, garage, water tank, septic system, landscaping, and removal of vegetation or grading other than as provided for in the approved fuel modification/landscape plan prepared pursuant to Special Condition Three (3), shall require an amendment to Coastal Development Permit No. 4-04-030 from the Commission or shall require an additional coastal development permit from the Commission or from the applicable certified local government.

10. Deed Restriction

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

enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

11. Oak Tree Protection

To ensure that on-site oak trees are protected during grading and construction activities, protective barrier fencing shall be installed around the drip line of all oak trees whose drip lines are within 100 feet of the proposed development during construction operations.

Prior to commencement of construction, the permittee shall retain the services of a biological consultant or arborist with appropriate qualifications acceptable to the Executive Director. The biological consultant or arborist shall be present on site during grading and construction activities to ensure that no work is conducted within the protected zone of any oak trees (5 feet from the drip line or 15 feet from the trunk, whichever is greater) except as permitted pursuant to this coastal development permit. Should any work occur within the protected zones of any oak trees that is not included in this coastal development permit, the permittee shall cease work and the biological consultant and permittee shall immediately notify the Executive Director of the Commission. If significant impacts or damage occur to the oak trees, the applicants shall be required to submit a revised, or supplemental program to adequately mitigate such impacts. Any oaks which are inadvertently impacted, destroyed or damaged during implementation of the project shall be replaced in kind at a 10:1 or greater ratio onsite. The revised, or supplemental, program shall be processed as an amendment to this coastal development permit.

12. Revised Septic System Design

- A. ***Prior to issuance of the Coastal Development Permit***, the Permittee shall submit, for the review and approval of the Executive Director, revised septic system plans showing the use of a pre-treatment septic tank to treat wastewater from the residence prior to discharge into the proposed leach fields. The submitted plans shall be stamped with preliminary approval by the County of Los Angeles Health Department.
- B. The Permittee shall undertake development in accordance with the final approved septic plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Coastal Commission approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is required.
- C. By acceptance of this permit, the Permittee acknowledges and agrees to use and maintain the pre-treatment septic tank required in Special Condition 12.A. to the manufacturer's specifications for the purposes of treating wastewater from the proposed residence for the life of the project.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description and Background

The applicant proposes to construct a 2,061 sq. ft, two story, 29 foot high single family residence with attached 534 sq. ft. garage; 116 sq. ft. of second story decks; septic system; driveway, retaining walls; 261 cu. yds of removed and recompacted soil; and 401 cu. yds. of grading (314 cu. yds cut; 87 cu. yds fill; 227 cu. yds. export).

The project location is an 0.19-acre (8,276 sq. ft.) lot (APN 4471-007-006) in the Vera Canyon Small Lot Subdivision, southwest of the intersection of Kanan Dume Road and Mulholland Highway in the Santa Monica Mountains (Exhibits 1-4). The lot is situated on the northwest corner of Vera Canyon Road and Charles Road. The project and surrounding areas are designated as a Significant Watershed area in the Malibu/Santa Monica Mountains Land Use Plan certified by the Commission in 1986. The subject lot was cleared prior to the effective date of the Coastal Act in 1977 and has remained cleared since that time. A single oak tree and a few non-native eucalyptus and pine trees, however, remain on the western boundary of the lot. In 1983 the Commission approved a coastal development permit for construction of a single family residence on the lot (CDP 5-82-369). While this permit was issued, the landowner let it expire prior to initiating any portion of the project.

Several single family residences surround the lot to the southwest, north, and south. Additionally, a conference center associated with Calamigos Ranch is located directly east of the lot. The area proposed for the residence, septic system, and fuel modification for the residence has been disturbed due to fuel modification from neighboring residences and structures. A tributary to Zuma Creek, however, is located on the east side of Vera Canyon Road, approximately 35 feet from the eastern boundary of the subject lot. The stream has a defined bed and bank and is shown on USGS topographic maps as a blueline stream. The stream is bordered on both sides by a dense stand of oak trees that form a continuous riparian habitat. The canopies of these oak trees extend over Vera Canyon Road and within 20 feet of the eastern boundary of the subject lot.

The proposed residence would be located as close to the west side of the lot as possible and approximately 30 feet from the canopy of the oak tree on the northwest side of the lot. The residence would be located approximately 60 feet from the bank of the stream east of the lot and 45 feet from the oak riparian canopy bordering the stream. The proposed leach fields to support the septic system for the residence would be located north and southeast of the residence on the remaining portions of the lot. The proposed leach fields would be located approximately 60 feet from the bank of the stream and approximately 30 feet from the oak riparian canopy bordering the stream.

The leach fields would be five feet from the outer canopy of a single oak tree on the west side of the property.

B. Geologic and Wildfire Hazard

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

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

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

Geology

Section 30253 of the Coastal Act mandates that new development be sited and designed to provide geologic stability and structural integrity, and minimize risks to life and property in areas of high geologic, flood, and fire hazard. The applicant has submitted the following reports for the proposed development: "Preliminary Geotechnical Engineering and Percolation Test Report, 253 Vera Canyon, Malibu," "Update Percolation Test Investigation, 253 Vera Canyon, Malibu," and "Addendum Geotechnical Engineering Report, 253 Vera Canyon, Malibu" prepared by West Coast Geotechnical on June 10, 2003, January 20, 2004; and February 9, 2004 respectively. These reports address the geologic conditions on the site, including drainage, subsurface conditions, groundwater, landslides, faulting, septic system, and seismicity.

The subject property is located on gently sloping terrain on the northwest corner of Vera Canyon Road and Charles Road in the Santa Monica Mountains. The site is underlain by silty clay and sandy clay. Groundwater was encountered at an approximate depth of 17 feet in tests conducted in February 2002 and April, 2003. According to the geologic consultants, the property is not in an area subject to liquefaction, landslides, or known active faults. The geologic consultants have found the geology of the proposed project site to be suitable for the construction of a single-family residence and septic system. Additionally, the County of Los Angeles Health Department has given preliminary approval of the proposed leach field septic system.

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

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

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

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

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

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

Special Condition Ten (10) requires the applicant to record a deed restriction that imposes the terms and conditions of this permit as a restriction on the use and enjoyment of the property and provides any prospective purchaser of the site with recorded notice that the restriction are imposed on the subject property.

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

Wildfire

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

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

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

C. Environmentally Sensitive Habitat Areas and Water Quality

Section 30231 states:

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

Section 30240 states:

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

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

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

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

P57 Designate the following areas as Environmentally Sensitive Habitat Areas (ESHAs): (a) those shown on the Sensitive Environmental Resources Map (Figure 6), and (b) any undesignated areas which meet the criteria and which are identified through the biotic review process or other means, including those oak woodlands and other areas identified by the Department of Fish and Game as being appropriate for ESHA designation.

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

P 68 Environmentally sensitive habitat areas (ESHAs) shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Residential use shall not be considered a resource dependent use.

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

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

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

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

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

P79 To maintain natural vegetation buffer areas that protect all sensitive riparian habitats as required by Section 30231 of the Coastal Act, all development other than driveways and walkways should be set back at least 50 feet from the outer limit of designated environmentally sensitive riparian vegetation.

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

P81 To control runoff into coastal waters, wetlands and riparian areas, as required by Section 30231 of the Coastal Act, the maximum rate of storm water runoff into such areas from new development should not exceed the peak level that existed prior to development.

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

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

The 1986 Malibu/Santa Monica Mountains Land Use Plan designates the subject parcel as located within a Significant Watershed. Residential uses are allowed for existing parcels smaller than 20 acres that are in proximity to existing development and/or services, and/or on the periphery of the significant watersheds according to the following standards:

- ***Allowable structures shall be located in proximity to existing roadways, services and other development to minimize impacts on the habitat, and clustering and open space easements to protect resources shall be required in order to minimize impacts on the habitat.***
- ***Structures shall be located as close to the periphery of the designated watershed as feasible, or in any other location in which it can be demonstrated that the effects of development will be less environmentally damaging.***
- ***Streambeds in designated ESHAs shall not be altered except where consistent with Section 30236 of the Coastal Act.***
- ***Grading and vegetation removal shall be limited to that necessary to accommodate the residential unit, garage, and one other structure, one access road, and brush clearance required by the Los Angeles County Fire Department. The standard for a graded building pad shall be a maximum of 10,000 square feet.***
- ***New on-site access roads shall be limited to a maximum of 300 feet or one-third of the parcel depth, whichever is smaller. Greater lengths may be allowed through conditional use, provided that the Environmental Review Board and County Engineer determine that there is no acceptable alternative.***
- ***Site grading shall be accomplished in accordance with the stream protection and erosion control policies.***
- ***Designated environmentally sensitive streambed shall not be filled. Any crossings shall be accomplished by a bridge.***
- ***Approval of development shall be subject to review by the Environmental Review Board.***

The 1986 Malibu/Santa Monica Mountains Land Use Plan also outlines the following standards for development within Environmentally Sensitive Habitat Areas:

- ***Land alteration and vegetation removal, including brushing, shall be prohibited within undisturbed riparian woodlands, oak woodlands, and any areas designated as ESHAs by this LCP, except that controlled burns and trails or roads constructed for providing access to recreational areas may be permitted consistent with other policies of the LCP.***
- ***Trails or roads permitted for recreation shall be constructed to minimize grading and runoff. A drainage control plan shall be implemented.***
- ***Streambeds in designated ESHAs shall not be altered except where consistent with Section 30236 of the Coastal Act. Road crossings shall be minimized, and where crossings are considered necessary, should be accomplished by bridging. Tree removal to accommodate the bridge should be minimized.***
- ***A minimum setback of 100 feet from the outer limit of the pre-existing riparian tree canopy shall be required for any structure associated with a permitted use within or adjacent to an Environmentally Sensitive Habitat Area.***
- ***Structures shall be located in proximity to existing roadways, services and other development to minimize the impacts on the habitat. Approval of development shall be subject to review by the Environmental Review Board.***

The Commission recognizes that new development in the Santa Monica Mountains has the potential to adversely impact coastal water quality through the removal of native vegetation, increase of impervious surfaces, increase of runoff, erosion, and sedimentation, and introduction of pollutants such as petroleum, cleaning products, pesticides, and other pollutant sources, as well as effluent from septic systems. Section 30231 of the Coastal Act requires that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through, among other means, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. The 1986 Malibu/Santa Monica Mountains Land Use Plan also designates the subject parcel as located within a Significant Watershed. This plan, which the Commission uses as guidance, includes several development standards and stream protection policies cited above for significant watersheds. The project site is located approximately 35 feet from a tributary to Zuma Creek that is surrounded by the dense riparian oak woodland corridor. The stream and water quality protection measures of the Coastal Act and Malibu LUP, therefore, directly apply to the proposed project.

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

1986 Malibu/Santa Monica Mountains Land Use Plan includes several development standards for project proposed near and in environmentally sensitive habitat areas as cited above. Pursuant to Section 30107.5, in order to determine whether an area constitutes an ESHA, and is therefore subject to the protections of Section 30240, the Commission must ask four questions:

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

The Coastal Commission has found that the Mediterranean Ecosystem in the Santa Monica Mountains is itself rare, as well as being especially valuable, because of its relatively pristine character, physical complexity, and resultant biological diversity. 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. Therefore, the habitat areas discussed below, which provide important roles in that ecosystem, are especially valuable because of that role and meet the second criterion for the ESHA designation. The subject site is adjacent to several habitat types that are part of the Santa Monica Mountains Mediterranean Ecosystem, including riparian woodland and oak woodland.

Woodlands that are native to the Santa Monica Mountains, such as oak woodlands and riparian woodlands, have many important and special roles in the ecosystem. Native trees prevent the erosion of hillsides and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife species, contribute nutrients to watersheds, and are important scenic elements in the landscape.

In the Santa Monica Mountains, riparian woodland contains the greatest overall diversity of all the plant communities in the area, partly because of its multi-layered vegetation.¹ 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 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

¹ 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.

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 lifecycles². 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 listing³, 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 work⁴ 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 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

² 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.

³ 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.

⁴ 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).

the creek. Occasionally, these turtles move up to 2 miles across upland habitat⁵. 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 streambed⁶. 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 lost⁷. Writing at the same time as Faber, Bowler asserted that, "[t]here is no question that riparian habitat in southern California is endangered."⁸ 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 disturbances⁹. Human-caused increased fire frequency has resulted in increased sedimentation rates, which exacerbates the cannibalistic predation of adult newts on the larval stages.¹⁰ 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 crayfish¹¹. These introduced predators have eliminated the newts from streams where they previously occurred by both direct predation and suppression of breeding.

More recently, surveys conducted in Spring 2006 found the invasive New Zealand mud snail (*Potamopyrgus atipodarum*) in the Malibu Creek watershed. The tiny snails reproduce rapidly and can achieve densities of up to 500,000 organisms per square meter. Because of their massive density and quantity, the New Zealand mud snail can out-compete and reduce the number of native aquatic invertebrates that the watershed's

⁵ Testimony by R. Dagit, Resource Conservation District of the Santa Monica Mountains at the CCC Habitat Workshop on June 13, 2002.

⁶ Dr. Lee Kats, Pepperdine University, personal communication to Dr J. Allen, CCC.

⁷ 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.

⁸ 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.

⁹ 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.

¹⁰ Kerby, L.J., and L.B. Kats. 1998. Modified interactions between salamander life stages caused by wildfire-induced sedimentation. *Ecology* 79(2):740-745.

¹¹ Gamradt, S.C. and L.B. Kats. 1996. Effect of introduced crayfish and mosquitofish on California newts. *Conservation Biology* 10(4):1155-1162.

fish and amphibians rely on for food. This reduction in aquatic invertebrate food supply can disrupt the entire food web with dramatic consequences.

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, as detailed in **Exhibit 16**.

The project site is a 0.19-acre lot in the Vera Canyon Small Lot Subdivision in the Santa Monica Mountains. The subject lot was cleared prior to the effective date of the Coastal Act in 1977 and has remained cleared since that time. Several single family residences surround the lot to the southwest, north, and south. Additionally, a conference center associated with Calamigos Ranch is located directly east of the lot. Fuel modification for protection of these structures has led to thinning and clearance of the lot and many areas surrounding the lot. A single oak tree, a few non-native eucalyptus and pine trees, however, remain on the western boundary of the lot. While the vegetation on the lot would not be considered an environmentally sensitive habitat area, the lot and its surrounding area is designated in the 1986 Malibu/Santa Monica Mountains Land Use Plan as a Significant Watershed Area. A tributary to Zuma Creek is located on the east side of Vera Canyon Road, approximately 35 feet from the eastern boundary of the subject lot. The stream has a defined bed and bank and is shown on USGS topographic maps as a blueline stream. The stream is bordered on both sides by a dense stand of oak trees that form a continuous relatively undisturbed riparian habitat that spans the majority of the length of the stream (Exhibit 4). The canopies of these oak trees extend over Vera Canyon Road and within 20 feet of the eastern boundary of the subject lot. Due to the important ecosystem role of riparian habitats in the Santa Monica Mountains (detailed in **Exhibit 3**), the Commission finds that the stream and riparian oak woodland habitat surrounding the subject site meets the definition of ESHA under Section 30107.5 of the Coastal Act.

The proposed residence would be located as close to the west side of the lot as possible and would be located within approximately 60 feet from the bank of the stream east of the lot and 45 feet from the oak riparian canopy bordering the stream. Additionally, the proposed leach fields to support the septic system for the residence would be located north and southeast of the residence on the remaining portions of the lot. The leach fields would be located approximately 60 feet from the bank of the stream and approximately 30 feet from the oak riparian canopy bordering the stream. While construction of the residence itself and fuel modification for the residence would not require disturbance of riparian oak woodland or the stream, the development, due to its proximity to these resources, has the potential to impact water quality in the stream and disrupt or degrade the habitat functions of the riparian corridor. In past permit actions the Commission has consistently required buffers to riparian areas for the purposes of protecting coastal waters and water quality, as well as environmentally sensitive habitat areas.

The primary functions of buffers are to protect against human and domestic animal disturbance, that is, to keep disturbance at a distance from sensitive environmental resources, and to provide ecosystem services in benefit of the adjacent ESHA. Riparian buffers adjacent to streams and creeks serve to maintain the integrity of the waterway, stabilize the stream banks, reduce pollution, and provide food, habitat, and thermal protection for both terrestrial and aquatic organisms. Riparian buffers benefit aquatic habitat by improving the quality of nearby waters through shading, filtering, and moderating stream flow. Shade provided by the plants maintains cooler, more even water temperatures. Cooler water holds more oxygen that helps reduce stress on fish and other aquatic animals. The layers of vegetation in a riparian zone include a leafy canopy which provides cover and food to many birds, including flycatchers, owls, and raptors which are helpful to equestrians in insect and rodent control. Plant debris also contributes to a more complex food web providing a food source to microbes, insects, and other invertebrates benefiting all fish and wildlife. Plant roots hold bank soil together and plant stems protect banks by deflecting the cutting action of storm runoff. The vegetation helps stabilize banks and reduces water velocity and erosion. With the vegetation slowing down the velocity of the runoff, the riparian buffer allows water to infiltrate the soil and recharge the groundwater supply. Another benefit is that near-surface groundwater will reach the waterway at a much slower rate over a longer period of time than if it had directly flowed into the waterway. Water infiltration helps control flooding and maintains water flow even during dry periods. The water infiltration capacity of the riparian buffer area also allows sediments and pollutants to settle out, be modified by soil bacteria, and taken up by plants, thereby minimizing the amount of sediment and pollutants that may enter the waterway.¹²

According to a California Coastal Commission January 2007 report entitled, "Policies in Local Coastal Programs Regarding Development Setbacks and Mitigation Ratios for Wetlands and Other Environmentally Sensitive Habitat Areas," research on the effectiveness of riparian buffers have found that 30-60m (97.5-195 feet) wide riparian buffer strips will effectively protect water resources through physical and chemical filtration processes. For the purpose of filtering nitrogen compounds, a study determined that "the most effective buffers are at least 30m (97.5 feet) or 100 feet wide composed of native forest, and are applied to all streams, including small ones." Studies of the distribution of plant and bird species in relation to variable riparian buffer dimensions within several riparian systems have found that to include 90% of streamside plants, the minimum buffer ranged from 10m (32.5 feet) to 30m (97.5 feet), depending on the stream, whereas minimum buffers of 75m (250 feet) to 175m (570 feet) were needed to include 90% of the bird species. Research suggests that recommended widths for ecological concerns in riparian buffer strips typically are much wider than those recommended for water quality concerns, often exceeding 100m (325 feet) in width.¹³ In general, as the goals of riparian buffers change from single function to multiple or system functions, the required buffer widths increase. For a riparian ESHA buffer to

¹² Council of Bay Area Resource Conservation Districts, June 2003. Equine Facilities Manure Management Practices Fact Sheet, "Managing Manure: The Role of Riparian Buffers".

¹³ "Stream Setback Technical Memo", James D. Robins of Jones & Stokes, October 18, 2002. Prepared for the Napa County Conservation, Development, and Planning Department.

serve multiple functions, the research indicates that a 100-foot buffer is the absolute minimum required for protecting the habitat area and water quality from adverse environmental impacts caused by development.

Section 30231 of the Coastal Act requires the maintenance of natural vegetation buffer areas to protect riparian habitats and the quality of coastal waters. The stream protection policies of the 1986 Malibu/Santa Monica Mountains specifically require that both leach fields and structures associated with residential development be located at least 50 feet from the edge of riparian oak canopies to protect the quality of streams. Section 30240(b) also requires development in areas adjacent to ESHA to be sited and designed to prevent impacts that would significantly degrade such areas, and to be compatible with the continuance of such habitat areas. The Table 1 development standards of the certified Malibu-Santa Monica Mountains LUP, which the Commission uses as guidance, limits uses adjacent to riparian ESHA to permitted uses that are set back a minimum of 100 feet, and that are consistent with appropriate erosion control and stream protection policies, as well as any other LUP Policy. The LUP provides that the 100-foot setback from the ESHA is measured from the outer edge of the riparian canopy. Further, in past permit actions, the Commission has consistently required development to be located no closer than 100 feet from ESHA, in order to protect the biological integrity of the ESHA, provide space for transitional vegetated buffer areas, and minimize human intrusion. All of those concerns are relevant here, and thus, in this case, the Commission finds that a 100 foot buffer from the riparian woodland ESHA and the oak woodland ESHA is necessary to prevent impacts that would significantly degrade these ESHAs. Because the proposed residence and leach fields would be set back less than 50 feet from the riparian woodland ESHA on the site, the proposed development is inconsistent with Sections 30231 and 30240(b) of the Coastal Act, and the associated standards provided in the certified LUP for the area. Therefore, application of Sections 30231 and 30240, by themselves, would require denial of the project.

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

another factor that should be considered is the extent to which a project denial would interfere with reasonable investment-backed expectations.

The Commission interprets Section 30010, together with the *Lucas* decision, to mean that if Commission denial of the project would deprive an applicant's property of all reasonable economic use, the Commission may be required to allow some development even where a Coastal Act policy would otherwise prohibit it, unless the proposed project would constitute a nuisance under state law. In other words, Sections 30231 and 30240 of the Coastal Act cannot be read to deny all economically beneficial or productive use of land because Sections 30231 and 30240 cannot be interpreted to require the Commission to act in an unconstitutional manner.

In the subject case, the applicant purchased the property in 2004 for approximately \$167,000. The parcel was designated in the County's certified Land Use Plan in 1986 for residential use. At the time the applicant purchased the parcel, the County's certified Land Use Plan (LUP) designated the site as a sensitive habitat area (Significant Watershed). This designation allows residential development on the lot size pursuant to several development standards listed above. Based on this fact, along with the presence of existing and approved residential development on nearby parcels, the applicant had reason to believe that they had purchased a parcel on which they would be able to build a residence.

The Commission finds that in this particular case, other allowable uses for the subject site, such as a recreational park or a nature preserve, are not currently feasible and would not provide the owner an economic return on the investment. The parcel is 0.19 acres and there are other, residential developments surrounding the parcel. Public parkland and open space have been acquired in the vicinity, but there is no current offer to purchase the property from any public park agency. The Commission thus concludes that in this particular case there is no viable alternative use for the site other than residential development. The Commission finds, therefore, that outright denial of all residential use would interfere with reasonable investment-backed expectations and deprive the property of all reasonable economic use.

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

While the applicant is entitled under Section 30010 to an assurance that the Commission will not act in such a way as to take their property, this section does not authorize the Commission to avoid application of the policies of the Coastal Act, including Sections 30231 and 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 Sections 30231 and 30240 by avoiding impacts that would disrupt and/or degrade environmentally sensitive habitat or impact biological productivity and the quality of coastal waters, to the extent this can be done without a taking of the property.

As discussed above, residential development will be approved within the required ESHA buffer on the project site in order to provide an economically viable use. Alternatives and mitigation measures, however, have been considered in order to identify the overall project that can protect ESHA against any significant disruption of habitat values and protect the quality of coastal waters, to the maximum extent feasible. Commission staff have analyzed the possibility of alternate locations or designs for the development to reduce impacts on water quality and riparian ESHA in the area. Given the small size of the lot (0.19-acres), however, and the required Los Angeles County property line setbacks, there is no alternative place to site the residence or leach fields on the lot that would be farther from the riparian ESHA and stream east of the lot. In addition, the applicant has proposed a residential development of reasonable size (2061 sq. ft. with 534 sq. ft. garage). Commission staff explored the possibility of reducing the amount and size of leach fields on the site or installing seepage pits instead of leach fields for the processing of wastewater from the residence. However, given the shallow level of groundwater in the area (located at approximately 17 feet in depth), seepage pits are not appropriate for this location. Additionally, the slow rate of percolation at the site (60 minutes per inch) requires several leach fields. The applicant, therefore, does not have the option of reducing the size or number of leach fields necessary for the residence.

The applicant, however, does have the option of installing septic tanks onsite that treat wastewater effluent prior to discharge into the proposed leach fields. While not required by the Los Angeles County Health Department, these pre-treatment tanks significantly improve the quality of wastewater entering leachfields. Given that the buffer between the leach fields and the riparian is less than the required 100 feet, there will be less opportunity for physical and chemical filtration of the effluent before it is introduced into the stream. Because of the proximity of riparian oak woodlands and streams to the proposed leach fields, as well as the shallow groundwater conditions of the area, the Commission finds that use of a pre-treatment septic tank at project site is necessary to protect riparian ESHA and water quality in the areas surrounding the site. **Special Condition Twelve (12)** requires the applicant to submit, for the review and approval of the Executive Director, revised septic system plans showing the use of a pre-treatment septic tank to treat wastewater from the proposed residence. These plans shall be reviewed and approved by the Los Angeles County Health Department prior to submittal to the Executive Director. The condition also requires the applicant and successive

landowners to maintain the pre-treatment tank and septic system for the life of the project.

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

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

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

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

visual qualities of this coastal area. In addition, low intensity security lighting will assist in minimizing the disruption of wildlife traversing this rural and relatively undisturbed area at night. Thus, the lighting restrictions will attenuate the impacts of unnatural light sources and reduce impacts to sensitive wildlife species.

The Commission also notes that while no development is proposed within 5 feet of the canopy of the single oak tree present on the west side of the subject lot, that encroachment into the protective zone (5 feet beyond the dripline, or 15 feet from the trunk, whichever is greater) of this oak tree could impact the health and viability of this important coastal resource. In past permit actions in the Santa Monica Mountains, the Commission has found that native oak trees are an important coastal resource, even if the overall woodland is disturbed or fragmented and would not be considered ESHA. Native trees prevent the erosion of hillsides and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife. Native trees that are not part of a larger, intact habitat may nonetheless provide nesting or roosting habitat for raptors and other birds that are rare, threatened, endangered, fully protected, or species of special concern. Furthermore, individual oak trees provide some habitat for a wide variety of wildlife species and are considered to be an important part of the character and scenic quality of the area.

Oaks are easily damaged and are very sensitive to disturbances that occur to the tree or the surrounding environment. Their root system is extensive, but surprisingly shallow, radiating out as much as 50 feet beyond the spread of the tree leaves, or canopy. The ground area at the outside edge of the canopy, referred to as the dripline, is especially important: the tree obtains most of its surface water and nutrients here, as well as conducts an important exchange of air and other gases (Los Angeles County Regional Planning Oak Tree Ordinance). Encroachments into the protected zone of an oak tree can, therefore, result in significant adverse impacts. In order to ensure that no impacts outside the scope of work allowed by this permit occur to the oak tree onsite, **Special Condition Eleven (11)** requires the applicant to retain the services of a qualified biologist or arborist who shall be present on site during grading operations. The consultant shall immediately notify the Executive Director if unpermitted activities occur. Should any damage, removal, or impact occur to any oak trees, the applicant is required to mitigate the impacts to the oaks at ratio of 10:1. Special Condition Eleven (11) also requires the applicant to install protective barrier fencing around the dripline of oak trees near the development area and to implement all oak tree preservation measures enumerated in the submitted Oak Tree Report. **Special Condition Three (3)** and **Eleven (11)** also include provisions that prohibit permanent irrigation within the protected zone of any oak trees, and landscaping within the oak tree driplines or the protected zones shall be limited to native oak tree understory plant species

Finally, the Commission finds that the amount and location of any new development that may be proposed in the future on the subject site is significantly limited by the unique nature of the site and the environmental constraints discussed above. Therefore, to ensure that any future structures, additions, change in landscaping or intensity of use at

the project site, that may otherwise be exempt from coastal permit requirements, are reviewed by the Commission for consistency with the resource protection policies of the Coastal Act, **Special Condition Ten (10)**, the future development restriction, has been required. **Special Condition Eleven (11)** requires the applicant to record a deed restriction that imposes the terms and conditions of this permit as restrictions on use and enjoyment of the property and provides any prospective purchaser of the site with recorded notice that the restrictions are imposed on the subject property.

In conclusion, as discussed in detail above, the proposed development will be approved with a reduced ESHA buffer in order to provide an economically viable use. Siting and design alternatives have been considered in order to identify the alternative that can avoid and minimize impacts to ESHA and water quality to the greatest extent feasible consistent with the allowance for an economically viable residential use. The proposed development is the alternative that will minimize impacts. In addition, mitigation measures described above have been required that will further reduce impacts to ESHA and water quality.

The Commission therefore finds that the project, as conditioned, will protect ESHA against any significant disruption of habitat values, consistent with Section 30240 of the Coastal Act. The project, as conditioned, will maintain the biological productivity and quality of coastal waters by minimizing adverse effects of waste water, controlling runoff, and minimizing erosion. Therefore, the Commission finds that, as conditioned, the project is consistent with Section 30231 of the Coastal Act.

D. ,Cumulative Impacts

The proposed project involves the construction of a new single family residence, which is defined under the Coastal Act as new development. New development raises issues with respect to cumulative impacts on coastal resources. Sections 30250 and 30252 of the Coastal Act address the cumulative impacts of new development.

Section 30250(a) of the Coastal Act states:

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. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of the surrounding parcels.

Section 30252 of the Coastal Act states:

The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.

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.

Throughout the Malibu/Santa Monica Mountains coastal zone there are a number of areas, which were subdivided in the 1920's and 30's into very small "urban" scale lots. These subdivisions, known as "small lot subdivisions" are comprised of parcels of less than one acre but more typically range in size from 4,000 to 5,000 square feet. The total buildout of these dense subdivisions would result in a number of adverse cumulative impacts to coastal resources. Cumulative development constraints common to small lot subdivisions were documented by the Coastal Commission and the Santa Monica Mountains Comprehensive Planning Commission in the January 1979 study entitled: "Cumulative Impacts of Small Lot Subdivision Development In the Santa Monica Mountains Coastal Zone".

The study acknowledged that the existing small lot subdivisions can only accommodate a limited amount of additional new development due to major constraints to buildout of these areas that include: Geologic, road access, water quality, disruption of rural community character, creation of unreasonable fire hazards and others. Following an intensive one year planning effort regarding impacts on coastal resources by Coastal Commission staff, including five months of public review and input, new development standards relating to residential development on small lots in hillsides, including the Slope-Intensity/Gross Structural Area Formula (GSA) were incorporated into the Malibu District Interpretive Guidelines in June 1979. A nearly identical Slope Intensity Formula was incorporated into the 1986 certified Malibu/Santa Monica Mountains Land Use Plan under policy 271(b)(2) to reduce the potential effects of buildout as discussed below.

The Commission has found that minimizing the cumulative impacts of new development is especially critical in the Malibu/Santa Monica Mountains area because of the large number of lots that already exist, many in remote, rugged mountain and canyon areas. From a comprehensive planning perspective, the potential development of thousands of

existing undeveloped and poorly sited parcels in these mountains creates cumulative impacts on coastal resources and public access over time. Because of this, the demands on road capacity, public services, recreational facilities, and beaches could be expected to grow tremendously.

Policy 271(b)(2) of the Malibu/Santa Monica Mountains LUP, which has been used as guidance by the Coastal Commission, requires that new development in small lot subdivisions comply with the Slope Intensity Formula for calculating the allowable Gross Structural Area (GSA) of a residential unit. Past Commission action certifying the LUP indicates that the Commission considers the use of the Slope Intensity Formula appropriate for determining the maximum level of development that may be permitted in small lot subdivision areas consistent with the policies of the Coastal Act. The basic concept of the formula assumes the suitability of development of small hillside lots should be determined by the physical characteristics of the building site, recognizing that development on steep slopes has a high potential for adverse impacts on resources. Following is the formula and description of each factor used in its calculation:

Slope Intensity Formula

$$\text{GSA} = (A/5) \times ((50-S)/35) + 500$$

GSA = the allowable gross structural area of the permitted development in square feet. The GSA includes all substantially enclosed residential and storage areas, but does not include garages or carports designed for storage of autos.

A = the area of the building site in square feet. The building site is defined by the applicant and may consist of all or a designated portion of the one or more lots comprising the project location. All permitted structures must be located within the designated building site.

S = the average slope of the building site in percent as calculated by the formula:

$$S = I \times L/A \times 100$$

I = contour interval in feet, at not greater than 25-foot intervals, resulting in at least 5 contour lines

L = total accumulated length of all contours of interval "I" in feet

A = the area being considered in square feet

The proposed project site is located in the small lot subdivision of Vera Canyon and subject to the provisions of the slope intensity formula. The applicant proposes the construction of a new 2,061 sq. ft. single family residence with attached 534 sq. ft. garage. The applicant has submitted a GSA calculation in conformance to Policy 271(b)(2) of the Malibu/Santa Monica Mountains LUP. This calculation arrived at a

maximum GSA of 2,065 sq. ft. of habitable space. Staff has confirmed that the applicant's calculations conform to the formula used by the Commission in past permit decisions. The proposed 2,061 sq. ft. of habitable space is consistent with the maximum allowable GSA of 2,065 sq. ft.

Some additions and improvements to residences on small lots within these small lot subdivisions have been found to adversely impact the area. Many of the lots in these areas are so steep or narrow that they cannot support a large residence without increasing or exacerbating the geologic hazards on and/or off site. Additional buildout of small lot subdivisions affects water usage and has the potential to impact water quality of coastal streams in the area. Other impacts to these areas from the buildout of small lot subdivisions include increases in traffic along mountain road corridors and greater fire hazards. As described above, the subject parcel is in close proximity to a riparian woodland and stream and increased development on the site could result in additional impacts to this habitat. For all of these reasons, future improvements on the subject property could cause adverse cumulative impacts on the limited resources of the subdivision. The Commission, therefore, finds it necessary for the applicant to record a future improvements deed restriction on this lot, as noted in **Special Condition Nine (9)**, which would 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.

Finally, **Special Condition Ten (10)** 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.

The Commission therefore finds that the proposed project, only as conditioned, is consistent with Sections 30250(a) and 30252 of the Coastal Act.

E. Visual Resources

Section **30251** of the Coastal Act states:

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

Section 30251 of the Coastal Act requires scenic and visual qualities to be considered and preserved. Section 30251 also requires that development be sited and designed to protect views of scenic areas, minimize alteration of landforms, and be visually compatible with the surrounding area. The Commission is required to review the publicly accessible locations where the proposed development is visible to assess potential visual impacts to the public.

The subject site is located in a residentially developed area along Vera Canyon Road, just southwest of the intersection of Mulholland Highway and Kanan Dume Road in the Malibu/Santa Monica Mountains. The parcel is bounded by existing residences and gently sloping hillside terrain. State park lands are located approximately 0.5 miles southwest of the subject lot. The subject site is visible from portions of the Zuma Ridge Trail, a public trail, and Vera Canyon Road, which also doubles as a secondary public trail within the Santa Monica Mountains.

The applicant proposes to construct a 2,061 sq. ft, two story, 29 foot high single family residence with attached 534 sq. ft. garage; 116 sq. ft. of second story decks; septic system; driveway, retaining walls; 261 cu. yds of removed and recompacted soil; and 401 cu. yds. of grading (314 cu. yds cut; 87 cu. yds fill; 227 cu. yds. export). The residence and attached garage are located on a previously disturbed portion of the property, and are as close as possible to existing residential development. The proposed building site and design thereby minimizes the amount of grading and landform alteration necessary for the project. The proposed residence is not excessive in height or size and is compatible with other existing residential development in the area. As the proposed residence will be unavoidably visible from portions of public trails, the Commission finds it necessary to require mitigation measures to minimize visual impacts associated with development of the project site.

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

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

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

To ensure that excess excavated material is moved off-site so as not to contribute to unnecessary landform alteration and to minimize visual impacts 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 Seven (7)**.

Finally, regarding future developments or improvements, certain types of development on the property, normally associated with a single-family residence, which might otherwise be exempt, have the potential to impact scenic and visual resources in this area. It is necessary to ensure that any future development or improvements normally associated with the entire property, which might otherwise be exempt, is reviewed by the Commission for compliance with the scenic resource policy, Section 30251 of the Coastal Act. **Special Condition Nine (9)**, the Future Development Restriction, will ensure that the Commission will have the opportunity to review future projects for compliance with the Coastal Act. Further, **Special Condition Ten (10)** requires the applicant to record a deed restriction that imposes the terms and conditions of this permit as restrictions on use and enjoyment of the subject property and provides any prospective purchaser with recorded notice that the restrictions are imposed on the subject property.

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

F. Local Coastal Program

Section 30604 of the Coastal Act states:

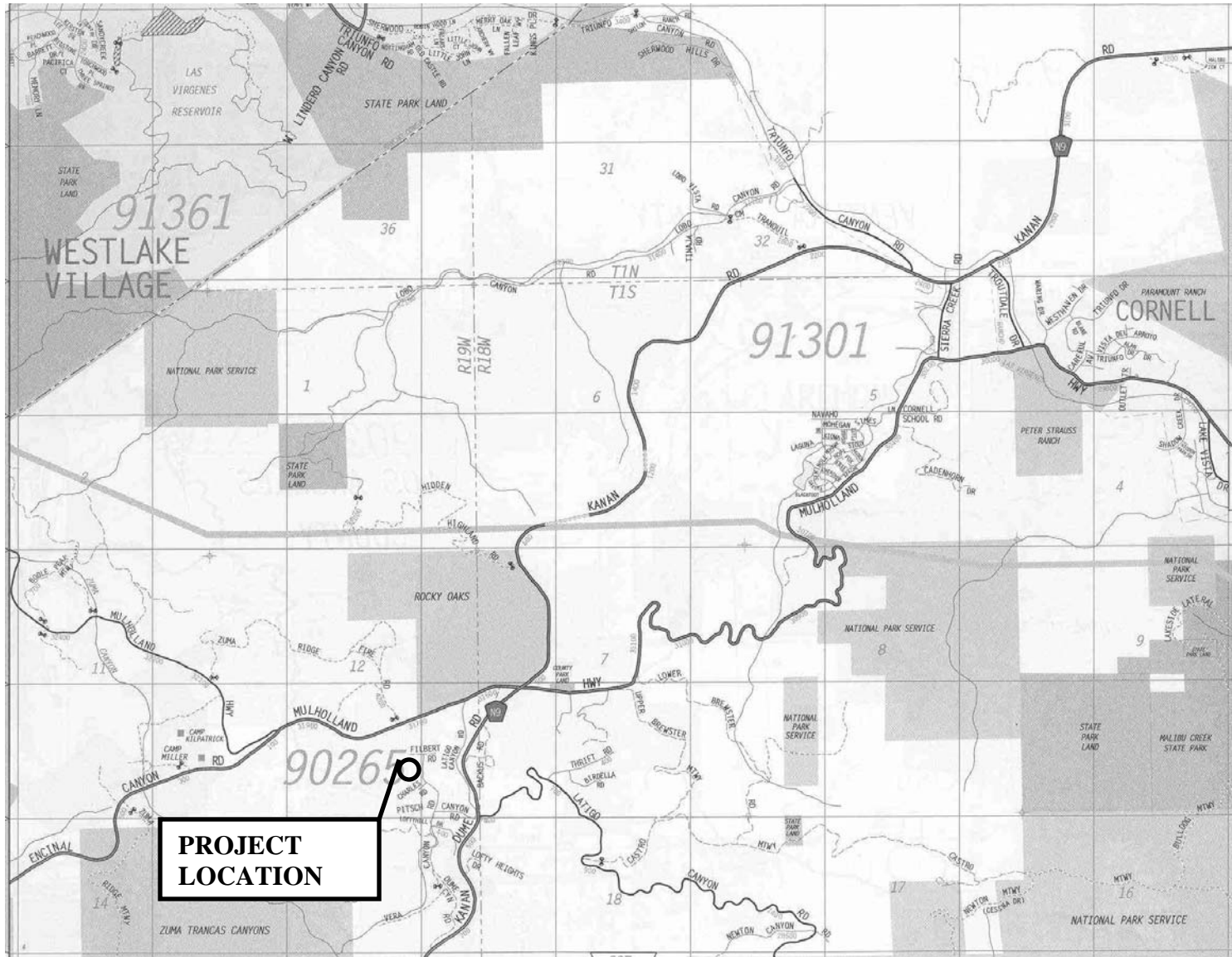
a) Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the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

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

G. California Environmental Quality Act

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

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



CDP 4-04-030
Exhibit 1
Project Area

Source: Rand McNally Thomas Guide, 2006.

DISMANTLING NOTES:

REMOVAL OF EXISTING TREES, SHRUBS, AND BUSHES
 ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL BUILDING CODE AND ANY APPLICABLE SAFETY REGULATIONS. SEE THE CURRENT CITY OF INDIANAPOLIS ORDINANCES FOR ANY ADDITIONAL REQUIREMENTS.
 THE EXTENT OF WORK NOTED ON THE PLANS IS FOR PLANNING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION ON THE EXTENT OF TREE AND OR SHRUB REMOVAL. VERIFY WITH OWNER ANY PLANS TO BE RETAINED AND OR RELOCATED.

REMOVE TREES AS NOTED. REMOVE TREES AS SHOWN BY OWNER AND TO SECURE THE PROPERTY OF THE GENERAL CONTRACTOR AND REMOVE FROM THE BUILDING SITE PROMPTLY.
 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE DUMPING FACILITIES OR OTHER MEANS OF DISPOSAL FOR ALL TREES REMOVED FROM THE SITE.

GENERAL CONTRACTOR TO PROTECT EXISTING, ROADS, AND ALL ADJACENT PROPERTY AS REQUIRED BY LOCAL, LAWS AND ORDINANCES. VERIFY AS NECESSARY WITH THE LOCAL BUILDING INSPECTOR.

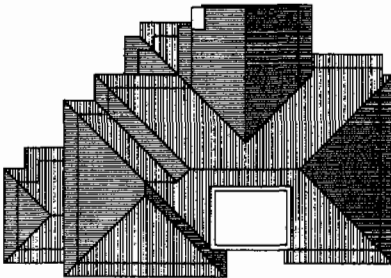
GENERAL CONTRACTOR TO PROTECT TREES, AND SHRUBS TO REMAIN. PROTECTION OF TREES AND SHRUBS TO BE BY PHYSICAL WRAPPING OR BARRICADES. VERIFY WITH OWNER THE EXISTING PLANTINGS TO BE MAINTAINED IN AREA OF CONSTRUCTION.

STAY 30 FT. FROM THE EXISTING AREA OF THE CONSTRUCTION SITE. COLLECT AND FILE TOPSOIL FOR LATER USE. VERIFY WITH THE OWNER A LOCATION FOR STORING TOPSOIL.

LEVEES OF GRASSING SHALL BE ALL AREAS WITHIN THREE FEET OF THE OUTSIDE EXTENTS OF THE NEW BELOW GRADE CONSTRUCTION TYPICAL.
 REMOVE ALL STUMPS AND ROOTS WITHIN THE LEVEES OF THE GRASSING TO THE DEPTHS LISTED BELOW:

- 1. TREES: 48" DIAMETER - 36" DEPTHS
- 2. BUSHES: 24" DIAMETER - 24" DEPTHS
- 3. GRASS: 12" DEPTHS

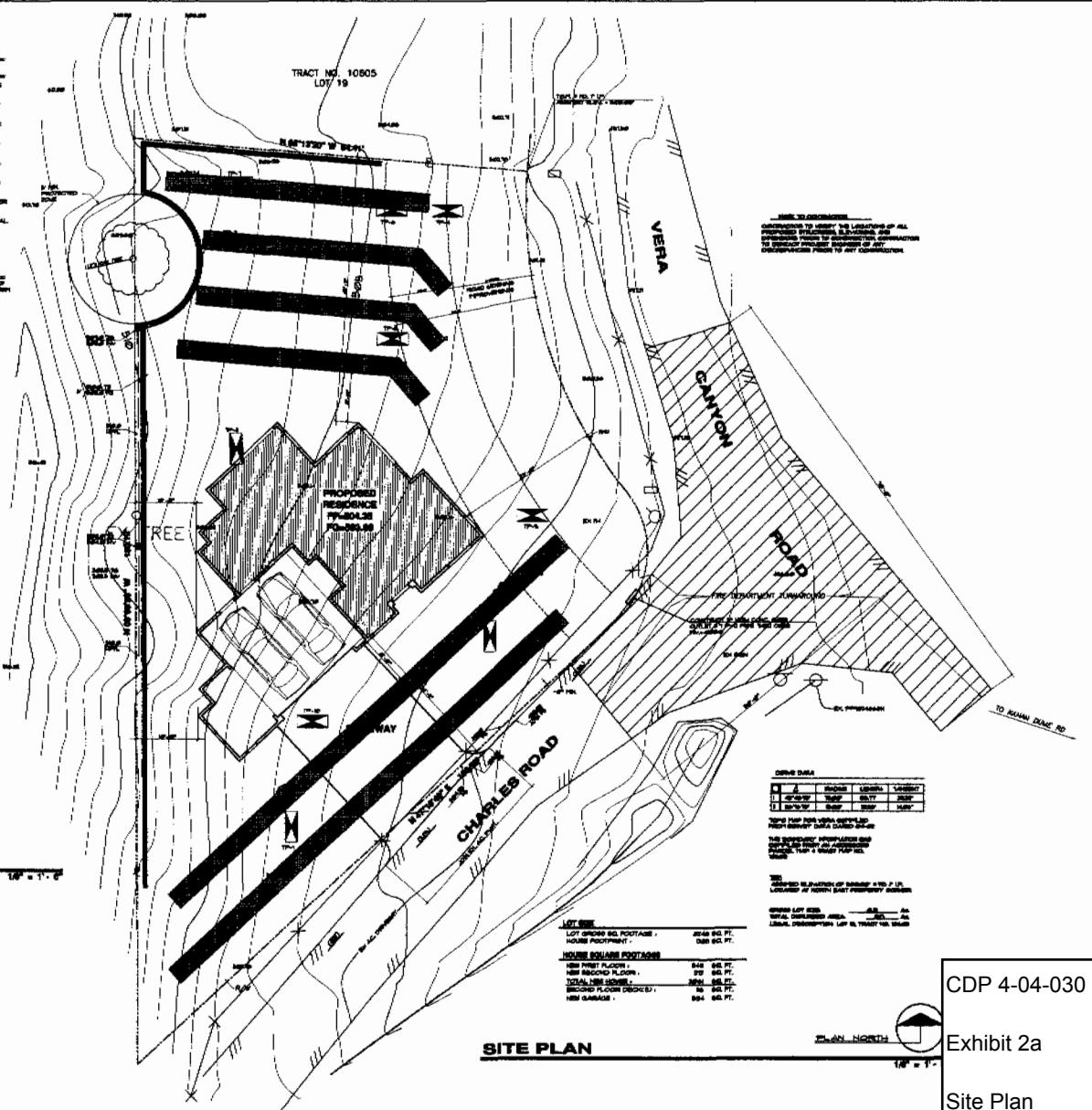
DISMANTLING NOTE:
 ALL EXISTING CONCRETE TO BE DISMANTLED FROM THE HOUSE AT TWO FEET (2") IF 4" OR MORE ROOF TRIMMING TO A DEPTH OF SIX FEET (6") OF EXISTING FOUNDATION TO THE WALLS. TRIM AT ONE FOOT (1") IN 1" PER FOOT / FRANK TO THE PARTY, 2" OR DEPTH OF OTHER APPROVED CHARGED CONCRETE.



ROOF PLAN

NOTES:

ALL ROOF PITCHES TO BE 12:12 UNLESS NOTED OTHERWISE.
 THE ROOFING TO BE "REPLACED" IS TO BE REMOVED FROM THE GENERAL MANUFACTURER'S SPECIFICATIONS. OWNER MUST VERIFY THE LOCAL BUILDING CODE FOR ANY ADDITIONAL REQUIREMENTS.
 ALL ROOFING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE LOCAL BUILDING CODE FOR ANY ADDITIONAL REQUIREMENTS.
 ALL ROOFING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE LOCAL BUILDING CODE FOR ANY ADDITIONAL REQUIREMENTS.
 ALL ROOFING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE LOCAL BUILDING CODE FOR ANY ADDITIONAL REQUIREMENTS.



SITE PLAN

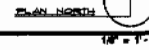
SITE PLAN

OWNER DATA

NO.	DATE	REVISION	BY	FOR
1	04/04/20	ISSUE FOR PERMITS	ARCHITECT	OWNER
2	04/04/20	REVISED PER COMMENTS	ARCHITECT	OWNER

LOT DATA

LOT AREA	6248 SQ. FT.
HOUSE FOOTPRINT	1048 SQ. FT.
NEW FIRST FLOOR	548 SQ. FT.
NEW SECOND FLOOR	378 SQ. FT.
TOTAL NEW SQUARE	926 SQ. FT.
SECOND FLOOR DECKED	14 SQ. FT.
NEW GARAGE	354 SQ. FT.



MR. DENIS CORDOVA RESIDENCE
 283 VERA CANYON ROAD
 INDIANAPOLIS, IN 46254
 PROJECT NO. 2020-04-030

CDP 4-04-030
 Exhibit 2a
 Site Plan
 (Six proposed leach fields shown in black north and south of residence)

NOTES:

PROVIDE A SMOKE DETECTOR IN EACH SLEEPING ROOM AND AT A POINT GENERALLY LOCATED IN THE HALLWAY OR AREA HAVING ACCESS TO EACH SLEEPING ROOM. DETECTORS SHALL BE INSTALLED IN ALL NEWLY CONSTRUCTED AREAS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND THE NATIONAL ELECTRICAL CODE (NEC) AS AMENDED BY THE STATE OF CALIFORNIA.

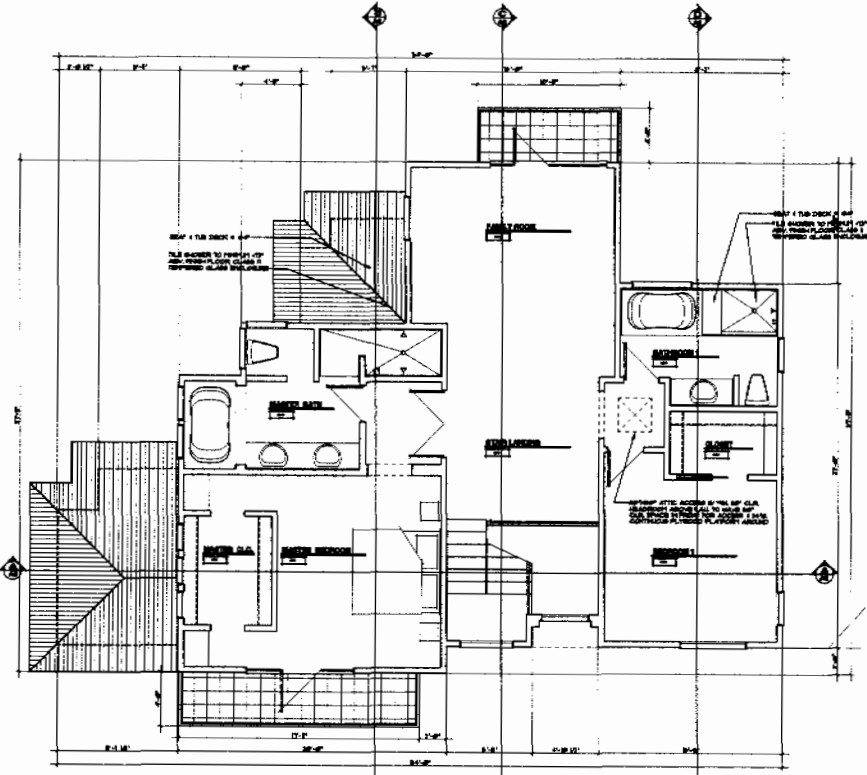
ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AS AMENDED BY THE STATE OF CALIFORNIA AND THE CALIFORNIA ELECTRICAL BOARD (CEB) AS AMENDED BY THE STATE OF CALIFORNIA.

THE FOLLOWING PORTERS AND FILING FITTINGS SHALL MEET THE STANDARDS NOTED BELOW:

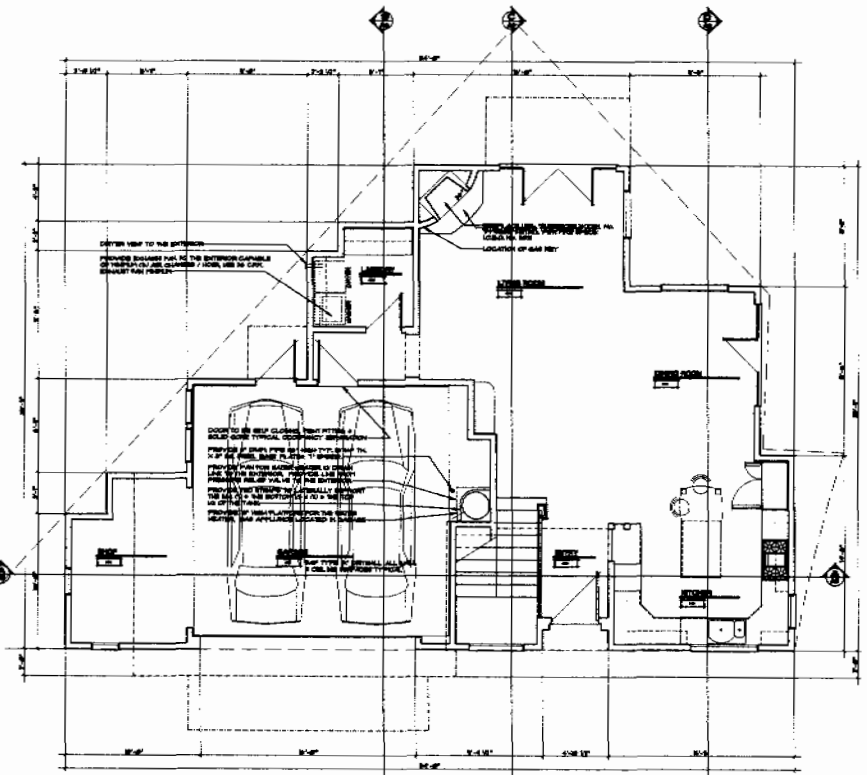
A. WATER-CLOSET	16 GALLONS PER PERSON
B. LAVATORY	12 GALLONS PER PERSON
C. SINK	12 GALLONS PER PERSON
D. WASH-BASIN	12 GALLONS PER PERSON

ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AS AMENDED BY THE STATE OF CALIFORNIA AND THE CALIFORNIA ELECTRICAL BOARD (CEB) AS AMENDED BY THE STATE OF CALIFORNIA.

PORTION OF ALL MATERIALS SHALL NOT BE LESS THAN 1/2" FOR YEARS 1 & 2 IN SOME SPECIAL CASES ON THE SHAPE SHALL PROVIDE AN INCH AND 1/2" SURFACE.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

HOUSE SQUARE FOOTAGES

NEW FIRST FLOOR	848	SQ. FT.
NEW SECOND FLOOR	112	SQ. FT.
TOTAL NEW HOUSE	960	SQ. FT.
SECOND FLOOR DECK	18	SQ. FT.
NEW GARAGE	534	SQ. FT.

DRAWN BY: [Name]
 CHECKED BY: [Name]
 PROJECT NO.: [Number]
 SHEET NO.: [Number]
 DATE: [Date]
 SCALE: [Scale]
 PROJECT: MR. DENIS CORDOVA RESIDENCE
 2833 VERA CANYON ROAD
 PLEASANTON, CALIF. 94566
 ARCHITECT: [Firm Name]
 1000 [Address]
 [City], CA 94501
 PHONE: [Phone Number]
 FAX: [Fax Number]

FLOOR PLAN

CDP 4-04-030
 Exhibit 2b
 Floor Plan

DESIGNED BY: **SCHEIDT & ARCHITECTS**
 ARCHITECTS
 200 W. MOUNTAIN AVENUE, SUITE 100, DENVER, CO 80202
 PHONE: (303) 733-4220
 FAX: (303) 733-4229
 SCALE: 1/8" = 1'-0"
 SHEET NO.: **CDP 4-04-030**
MR. DENIS CORDOVA RESIDENCE
 283 VERA CANYON ROAD
 SHERMAN, CALIFORNIA
 PROJECT NO.: 1811-1711



LEFT ELEVATION
SOUTHWEST



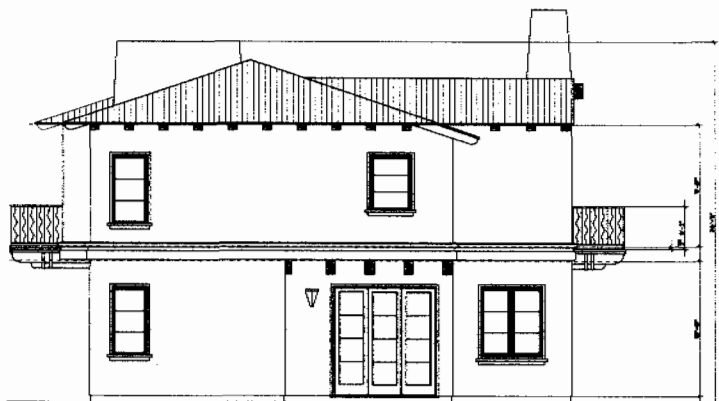
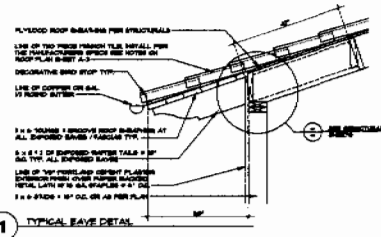
REAR ELEVATION
NORTHWEST

NOTES:

1. ALL ROOFING TO BE RECLAMED MED-PRIME FINISH TILE. METAL ROOF MANUFACTURERS SPECIFICATIONS OVER PERMET-BIT (1/2") LAYER OF 1/2" Gypsum BOARD TYPICAL OVER 4" MINIMUM INSULATION TO PROVIDE AIR SPACE. METAL ROOFING TO BE PERMET-BIT TYPE 316. ALL METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316.

2. ALL SIDING TO BE RECLAMED MED-PRIME FINISH TILE. METAL ROOF MANUFACTURERS SPECIFICATIONS OVER PERMET-BIT (1/2") LAYER OF 1/2" Gypsum BOARD TYPICAL OVER 4" MINIMUM INSULATION TO PROVIDE AIR SPACE. METAL ROOFING TO BE PERMET-BIT TYPE 316. ALL METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316.

3. ALL INTERIORS TO BE PERMET-BIT TYPE 316. METAL ROOF MANUFACTURERS SPECIFICATIONS OVER PERMET-BIT (1/2") LAYER OF 1/2" Gypsum BOARD TYPICAL OVER 4" MINIMUM INSULATION TO PROVIDE AIR SPACE. METAL ROOFING TO BE PERMET-BIT TYPE 316. ALL METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316. METAL ROOFING SHALL BE PERMET-BIT TYPE 316.



RIGHT ELEVATION
NORTHEAST



FRONT ELEVATION
SOUTHEAST

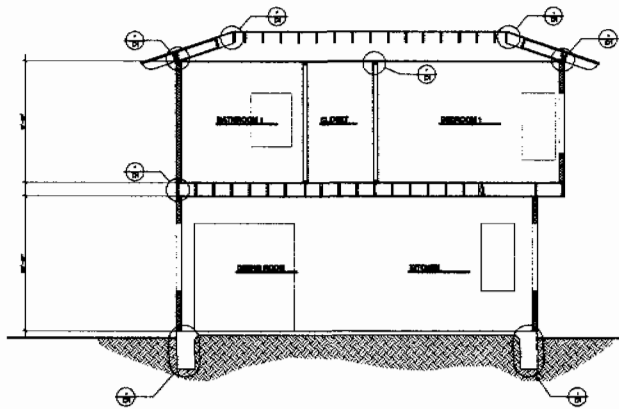
EXTERIOR ELEVATIONS

EXTERIOR ELEVATIONS

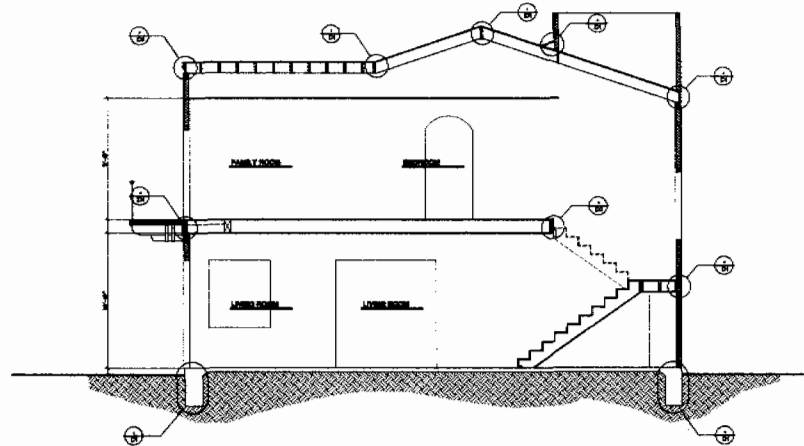
CDP 4-04-030

Exhibit 2c

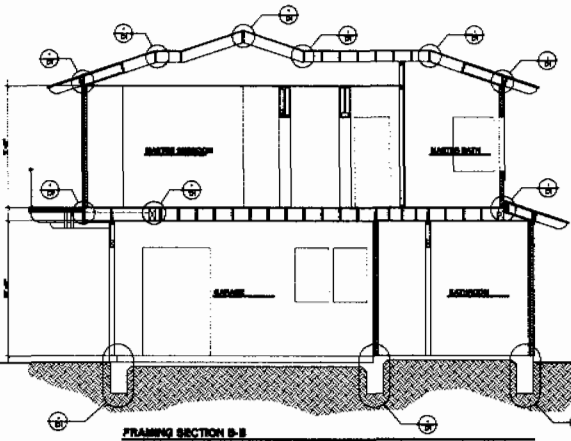
Elevations



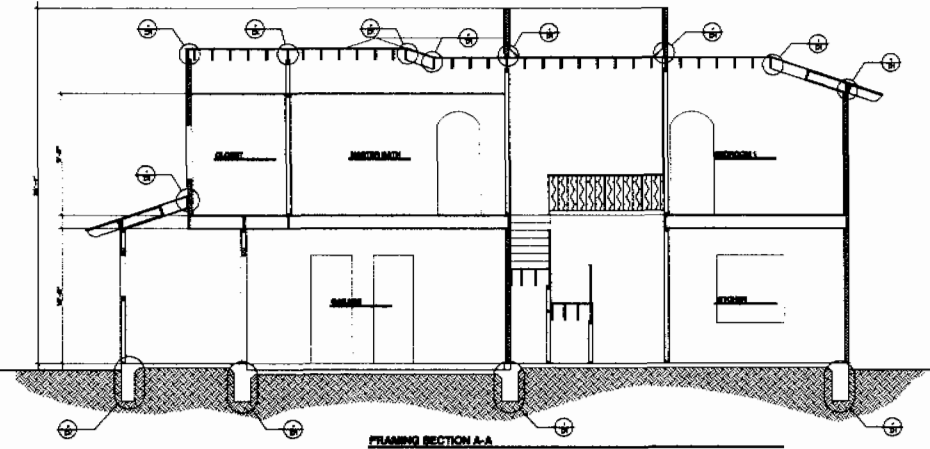
FRAMING SECTION D-D



FRAMING SECTION C-C



FRAMING SECTION B-B



FRAMING SECTION A-A

FRAMING SECTION A-A

FRAMING SECTIONS

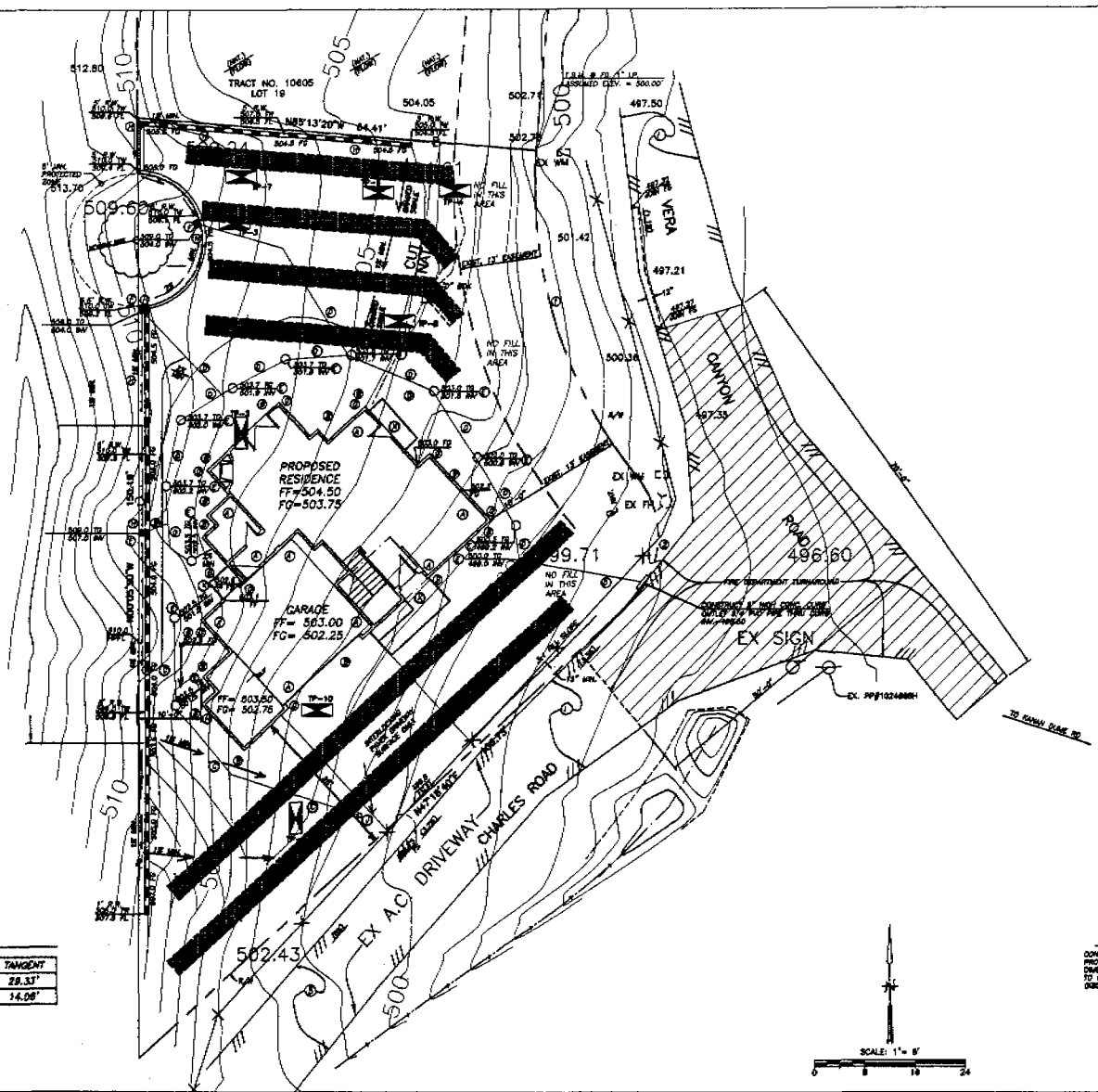
1/4" = 1'-0"

FRAMING SECTIONS

DRAWN BY: [Name]
 CHECKED BY: [Name]
 SCALE: 1/4" = 1'-0"
 PROJECT: MR. DENIS CORDOVA RESIDENCE
 203 VERA CANYON ROAD
 MALIBU, CALIFORNIA 90263
 PHONE: (310) 311-1811
 SCHWENKER ARCHITECTS
 10000 WILSON AVENUE, SUITE 100
 WESTLAKE, CALIFORNIA 91361
 PHONE: (818) 881-2222

MR. DENIS CORDOVA RESIDENCE
 203 VERA CANYON ROAD
 MALIBU, CALIFORNIA 90263
 PHONE: (310) 311-1811

CDP 4-04-030
 Exhibit 2d
 Elevations



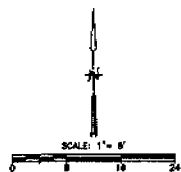
- CONSTRUCTION NOTES**
- CONSTRUCT STRUCTURAL SLAB FOOTINGS THICKNESS OF SOIL AND REINFORCING PER STRUCTURAL ENGINEER AND TOP SOILS ENGINEER RECOMMENDATIONS.
 - OVER EXISTING ENTIRE BUILDING AND AREA PLUS 1'-0" TO A DEPTH OF 3'-0" BELOW FOOTINGS AS RECOMMENDED BY THE SOILS ENGINEER.
 - CONSTRUCT 4" DIAMETER SOIL 30 PVC PIPE AT 1.0' MINIMUM.
 - CONSTRUCT 6" DIAMETER SOIL 30 PVC PIPE AT 1.0' MINIMUM.
 - CONSTRUCT 6" DIAMETER PLASTIC GRATED CURB BASH WITH 6" THICK CONCRETE JACKET TO CHANNEL WATER IN PIPES.
 - CONSTRUCT 24" SQUARE 6.0' DIA. DRAINED THROUGH DE SOLAL CATCH BASIN WITH 6" THICK CONCRETE RAKER TO CHANNEL WATER IN PIPES.
 - CONNECT DOWNSPOUTS TO UNDERGROUND DRAINAGE (TYP).
 - CONSTRUCT MASONRY RETAINING WALL WITH 18" WIRE CONCRETE SHALE PER SEPARATE PERMIT.
 - EXISTING A.C. PAVEMENT.
 - INSTALL 18" SQUARE PLASTIC CATCH BASIN WITH 6" THICK CONCRETE RAKER TO ACT AS SUBBULK.
 - 6" THICK CONCRETE FILL WORK WITH 24" 18" DIA. B.M.

CROSS LOT SIZE: 0.18 AC.
 TOTAL DISTURBED AREA: 0.13 AC.
 LEGAL DESCRIPTION: LOT 18, TRACT NO. 10805

LEGEND

- FF. FINISH FLOOR
- F.S. FINISH SURFACE
- F.G. FINISH GRADE
- F.L. FLOW LINE
- H.P. HIGH POINT
- T.G. TOP OF GRATE
- T.C. TOP OF CURB
- T.W. TOP OF WALL
- M.G. MATERIAL GRADE
- INT. INTERIOR
- E. DAYLIGHT LINE
- P.L. PROPERTY LINE
- D.S. OCCUPIED ORNATE DOWNSPOUT
- DE DOWNSPOUT
- RETAINING WALL PER PERMIT
- CONTRACTOR TO VERIFY HAND SURFACE FINISHES PER ARCHITECTURE PRESCRIPTIONS AND DETAILS TO DETERMINE ROUGH GRADE ELEVATIONS.
- 4" 6" SIZED SLABS PER 191, 106, 300
- PROPOSED LEACH LINES PER SOIL REPORT BY WEST COAST GEOTECHNICAL REPORT DATED 8-10-03. REPORT NO. 0748
- PROPOSED 100% FILLING EXPANSION AREA
- 18" DIA. B.M.
- 18" DIA. B.M.

NOTE TO CONTRACTOR
 CONTRACTOR TO VERIFY THE LOCATIONS OF ALL PROPOSED STRUCTURAL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO CONTACT PROJECT ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY CONSTRUCTION.



THIS ASSUMED ELEVATION OF 800.0' @ 1" IS LOCATED AT NORTH EAST PROPERTY CORNER.

CURVE DATA

Δ	RADIUS	LENGTH	TANGENT
1	43°48'18"	73.00'	55.77' 28.33'
2	86°16'18"	15.00'	22.83' 14.06'

TOPO MAP FOR VERA COMPILED FROM SURVEY DATA DATED 04-02

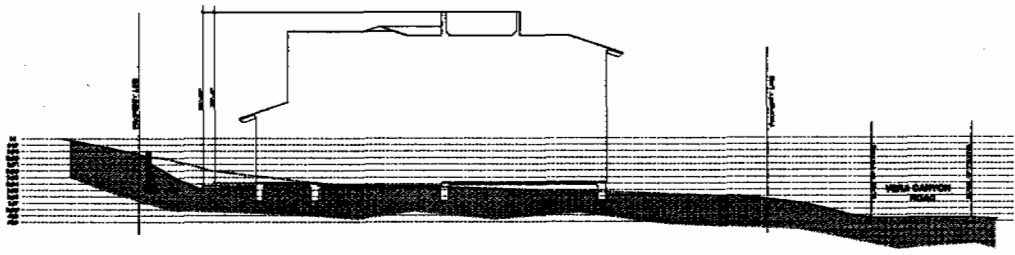
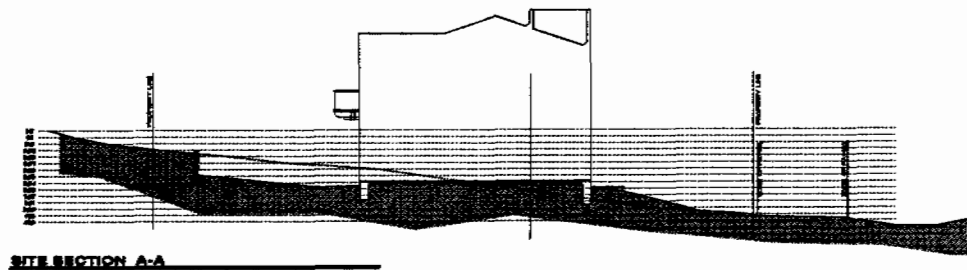
THE BOUNDARY INFORMATION WAS COMPILED FROM AN ACCESSORS PARCEL MAP & TRACT MAP NO. 10805

APPROVED	DRAWN	CHECKED	DATE	SCALE	SHEET	PROJECT	DATE
_____ PROJ. ENGR.	_____ DRAWN	_____ CHECKED	_____ DATE	_____ SCALE	_____ SHEET	_____ PROJECT	_____ DATE
_____ PROJ. ENGR.	_____ DRAWN	_____ CHECKED	_____ DATE	_____ SCALE	_____ SHEET	_____ PROJECT	_____ DATE

COUNTY OF LOS ANGELES

GRADING AND DRAINAGE PLAN
 JOHN ORLANDO
 SAN DIEGO CALIFORNIA
 PLAZA, CA 92108

CDP 4-04-030
 Exhibit 2e
 Grading Plan



SITE SECTIONS

SITE SECTIONS

SCHNEIDER ARCHITECTS 1000 W. 10th St., Suite 100 Phoenix, AZ 85001 Phone: (602) 254-1111 Fax: (602) 254-1112	
SCALE 1" = 10'-0" 1/8" = 1'-0"	DATE 08/11/03
MR. DENIS CORDOVA RESIDENCE 205 VERA CANYON ROAD PHOENIX, ARIZONA PROJECT NO. 03-0118-001	
PREPARED BY: [Name] CHECKED BY: [Name] DATE: [Date]	

CDP 4-04-030
 Exhibit 2f
 Grading Plan Cross
 Sections

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).

CDP 4-04-030

Exhibit 3

ESHA Findings

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

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

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

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

Ecosystem Context of the Habitats of the Santa Monica Mountains

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

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

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

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

² Ibid.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

¹⁵ NPS. 2000. op.cit.

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

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

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

Major Habitats within the Santa Monica Mountains

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

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

Riparian Woodland

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

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

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

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

²¹ Ibid.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Coastal Sage Scrub and Chaparral

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

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

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

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

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

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

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

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

Relationships Among Coastal Sage Scrub, Chaparral and Riparian Communities

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Coastal Sage Scrub

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

⁵² Ibid.

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

⁵⁴ Westman, W.E. 1981. *op. cit.*

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

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

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

⁵⁸ NPS, 2000, *op. cit.*

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

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

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

Chaparral

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

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

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

⁶⁰ Westman, W.E. 1981. op. cit.

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

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

⁶³ Ibid.

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

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

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

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

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

⁶⁴ Ibid.

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

⁶⁶ Ibid.

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

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

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

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

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

Oak Woodland and Savanna

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

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

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

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

⁷¹ *ibid.*

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

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

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

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

Grasslands

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

California Perennial Grassland

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

⁷² NPS 2000. op. cit.

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

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

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

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

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

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

California Annual Grassland

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

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

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

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

⁷⁹ NPS 2000. op. cit.

⁸⁰ NPS 2000. op. cit.

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

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

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

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

Increased Fire Frequency

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

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

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

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

⁸⁴ NPS, 2000, op. cit.

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

Fuel Clearance

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

Effects of Fuel Clearance on Bird Communities

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

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

⁸⁶ 1996 Los Angeles County Fire Code Section 1117.2.1

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

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

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

⁹⁰ Ibid.

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

Effects of Fuel Clearance on Arthropod Communities

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

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

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

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

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

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

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

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

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

Artificial Night Lighting

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

Summary

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

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

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

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

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

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

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

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

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

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

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

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

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



CDP 4-04-030
Exhibit 4
Aerial Photo of Site