

CALIFORNIA COASTAL COMMISSION

SOUTH CENTRAL COAST AREA
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Staff: K. Kemmler
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Hearing Date: 12/9-12/03
Commission Action:



STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-02-019
APPLICANT: Bren-Haley, Inc.
PROJECT LOCATION: 25858 Mulholland Hwy, unincorp. Malibu (Los Angeles Co.)
APN NO.: 4455-017-029

PROJECT DESCRIPTION: Construction of a new 32 ft. high, 5,350 sq. ft., multi-level single family residence including a 512 sq. ft. attached garage, a 968 sq. ft. detached structure including 506 sq. ft. guest house with 462 sq. ft. garage below, pool, deck, 20 ft. wide driveway, septic system, water storage tank and 3,601 cubic yards of grading (3,491 cu. yds. cut and 110 cu. yds. fill) for the pad* and 13,115 cubic yards grading (3,638 cu. yds. cut and 9,477 cu. yds. fill) for the driveway. Proposal also includes an offer-to-dedicate a public trail easement. *Staff notes that the grading amounts listed for the pad area are based on the original project proposal. The proposed project was amended just a few days before the preparation of this staff report. The applicant submitted revised project plans prepared by the architect but did not submit revised grading plans. Thus, the required grading amounts for the proposed project are unknown, but are not expected to be significantly less than the originally presented figures, which are included in the project description above.

Lot area	9.78 acres
Building coverage	3,150 sq. ft.
Pavement coverage (onsite)	4,600 sq. ft.
Landscape coverage	3,000 sq. ft.
Height Above Finished Grade	32 ft.
Parking spaces	6

LOCAL APPROVALS RECEIVED: County of Los Angeles Department of Regional Planning, Approval in Concept, January 14, 2002; County of Los Angeles Environmental Health Services, Sewage Disposal System Design Approval, November 20, 2001; County of Los Angeles Fire Department, Preliminary Fuel Modification Plan Approval, October 9, 2001; County of Los Angeles Fire Department, Fire Prevention Engineering Approval, September 24, 2001.

SUBSTANTIVE FILE DOCUMENTS: "Geologic and Soils Engineering Update and Plan Review," Grover, Hollingsworth and Associates, Inc., October 1, 2001; "Biological Survey," Steven G. Nelson, January 2001 (revised February 2003).

STAFF NOTE: DUE TO PERMIT STREAMLINING ACT REQUIREMENTS THE COMMISSION MUST ACT ON THIS PERMIT APPLICATION AT THE DECEMBER COMMISSION MEETING. The 180th day pursuant to the Permit Streamlining Act for Commission action on the subject application was November 4, 2003. Prior to this date, the applicant's agent signed a 90-day extension of time, which ends on December 16, 2003. Therefore the Commission must vote on Coastal Development Permit Application No. 4-02-019 no later than the December 9-12, 2003 hearing.

Summary of Staff Recommendation

Staff recommends **Denial** of the proposed project, as the proposed project is inconsistent with the protection of environmentally sensitive habitat onsite and the visual resource and landform alteration requirements of Coastal Act Sections 30240 and 30251. The project site is highly visible from Mulholland Highway a designated Scenic Highway in the certified Malibu/Santa Monica Mountains Land Use Plan (LUP). The proposed project involves a significant amount of grading and landform alteration (16,716 cubic yards of grading) for the proposed driveway and building pad. The proposed 6,318 square foot split level residence (including garages and guest unit) is located on a steeply sloping hillside that is visible from Mulholland Highway. The proposed structure is 32 feet in height and 103 feet in width across the west elevation of the residence facing Mulholland Highway. The immediate area surrounding the site south of Mulholland Highway is a vacant undisturbed chaparral covered steeply sloping hillside. The proposed 6,318 square foot, 32 foot high, 103 foot wide residence is very large structure that will result in significant adverse impacts to visual resources as seen from Mulholland Highway. The scale and massing of the proposed structure is not appropriate for this steeply sloping undisturbed hillside location and is not compatible with the rural character of this area. In addition, the proposed project requires grading, construction and fuel modification for fire protection within extensive stands of mixed chaparral determined by the staff biologist to be environmentally sensitive habitat. As proposed, the project will result in significant adverse impacts to the visual resources of the area and environmentally sensitive habitat on the site. Furthermore, there are feasible alternatives to the proposed project, which would serve to significantly lessen the adverse impacts to coastal resources posed by the project, but which the applicant has not proposed.

I. STAFF RECOMMENDATION

MOTION: *I move that the Commission approve Coastal Development Permit No. 4-02-019 for the development proposed by the applicant.*

STAFF NOTE: To deny a coastal development permit, the Commission must vote "no" on a motion to approve a permit for the proposed development. The permit will be denied if a majority of the Commissioners present fail to vote "yes." (Public Resources Code § 30604.)

Staff Recommendation of Denial:

Staff recommends a **NO** vote. Failure of this motion will result in denial of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution to Deny the Permit:

The Commission hereby denies a coastal development permit for the proposed development on the ground that the development will not conform with the policies of Chapter 3 of the Coastal Act and will 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 would not comply with the California Environmental Quality Act because there are feasible mitigation measures or alternatives that would substantially lessen the significant adverse impacts of the development on the environment.

II. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. PROJECT DESCRIPTION AND BACKGROUND

The applicant is proposing to construct a new 32 ft. high, 5,350 sq. ft., multi-level single family residence including a 512 sq. ft. attached garage, a 968 sq. ft. detached structure including 506 sq. ft. guest house with 462 sq. ft. garage below, pool, deck, 20 ft. wide driveway, septic system, water storage tank and 3,601 cubic yards of grading (3,491 cu. yds. cut and 110 cu. yds. fill) for the pad* and 13,115 cubic yards grading (3,638 cu. yds. cut and 9,477 cu. yds. fill) for the driveway (Exhibits 7-11) Proposal also includes an offer-to-dedicate a public trail easement (Exhibit 6). *Staff notes that the grading amounts listed for the pad area are based on the original project proposal. The proposed project was amended just a few days before the preparation of this staff report. The applicant submitted revised project plans prepared by the architect but did not submit revised grading plans. Thus, the required grading amounts for the proposed project are unknown, but are not expected to be significantly less than the originally presented figures, which are included in the project description above.

The project site is located in a relatively undeveloped, rural area in the Santa Monica Mountains on the southern side of Mulholland Highway (Exhibit 1). The subject property is a nearly rectangular parcel with Mulholland Hwy as its northern border (Exhibit 2). The subject parcel is surrounded on all sides by vacant parcels, including the parcels to the north across Mulholland Hwy. The project site would be accessed via a proposed access road off of Mulholland Hwy traversing two vacant parcels to the west of the subject lot. The proposed access road lies within an existing easement and would provide access to future residences on all three parcels as a shared common driveway (see Exhibits 3 & 4). The applicant submitted a site plan identifying two potential building sites on the adjacent parcels over which the proposed access road will be constructed (Exhibit 4). Topography at the subject site includes steeply sloping terrain rising up from Mulholland Hwy to a knoll where the proposed development is located and further rises to a ridgeline along the northern boundary of the property.

The entire site consists of mixed chaparral plant communities determined to be environmentally sensitive habitat area (ESHA) by the Commission's staff biologist based on a site visit on June 16, 2003, and the southern portion of the property lies within the boundary of the Cold Creek Resource Management Area. The property is located in an area of high biological importance due to the presence of a well established chaparral community contiguous among several vacant parcels and associated sensitive wildlife species.

As noted above, the proposed residence is located off of Mulholland Highway in a relatively undeveloped area in the Santa Monica Mountains. Mulholland Hwy is designated in the certified 1986 Malibu/Santa Monica Mountains Land Use Plan as a scenic highway and provides pristine scenic vistas in this area. The proposed project will be highly visible from Mulholland Hwy. The proposed residence is located 145 ft. upslope from Mulholland Hwy as measured from the terminus of the access road with a 32 ft. high, 103 ft. wide west elevation facing eastbound travelers along Mulholland Hwy. The proposed development consists of two structures: the multi-level main residence and the two-story detached guest house/garage. The 5,350 sq. ft. residence consists of two main levels with a two-car sq. ft. garage on a lower level offset from the main portion of the residence resulting in a multi-level structure. The west elevation of the residence as viewed from Mulholland Hwy will be 32 ft. in height from the garage finished grade to the peak of the residence. In addition, the site contains a segment of an existing hiking and equestrian trail. The applicant has proposed as a part of the project description to dedicate a public trail easement for the continued use of this trail, however, the current alignment falls within the proposed development area, thus, the applicant is proposing a realignment of the trail around the proposed development (see Exhibit 6). The proposed development will be in close proximity to and unavoidably visible from the trail.

The applicant originally proposed: Construction of a new 35 ft. high, 5,350 sq. ft., two story single family residence including a 512 sq. ft. attached garage, a 968 sq. ft. detached structure including 506 sq. ft. guest house with 462 sq. ft. garage below, a 250 sq. ft. detached cabana, pool, deck, 20 ft. wide driveway, septic system, water storage tank and 3,601 cubic yards of grading (3,491 cu. yds. cut and 110 cu. yds. fill) for the pad and 13,115 cubic yards grading (3,638 cu. yds. cut and 9,477 cu. yds. fill) for the driveway (see Exhibits 12-16). Proposal also includes an offer-to-dedicate a public trail easement.

Staff met with the applicant's agent on several occasions and Staff suggested that the applicant redesign the project to reduce the size, bulk and scale of the development and minimize grading to bring the project into conformance with visual resource and landform alteration policies of the Coastal Act. On August 25, 2003, the applicant submitted revised plans reflecting the relocation of the detached guest house and garage in order to cluster the development a bit more and deletion of the elevator and trellis connected to the cabana, and reduce the height of the cabana from 13 ft. to 10 ft. to reduce the profile of the development. The driveway that previously led up to the detached garage, was extended to occupy the area vacated by the detached structure and beyond to accommodate guest parking. On September 22, 2003, the applicant submitted revised plans that further redesigned the project in order to address visual resource impacts. The studio on the second floor was relocated to an area over the garage and the retaining walls on the southern end were omitted. On November 17, 2003, the applicant submitted final project plans reflecting a redesign of the residence to relocate some square footage from the first floor to an area under the first floor and amended the project description to delete the proposed cabana. The areas of the residence and detached guest house/garage remain unchanged from the original project proposal (see original project proposal above).

Although the applicant made several attempts to minimize the visual impact of the proposed development these changes were minimal in nature and did not result in significant reduction in the visibility of the development. The proposed project as redesigned by the applicant does not conform to the visual resource and landform alteration or sensitive resource policies of the Coastal Act, as discussed in the sections below.

B. 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 protected, landform alteration be minimized, and where feasible, degraded areas be enhanced and restored. The subject site is located within a rural area characterized by expansive, naturally vegetated mountains and hillsides that are traversed by scenic, public trails. The project site is highly visible by the public traveling along Mulholland Highway.

Although the previously certified Malibu/Santa Monica Mountains Land Use Plan (LUP) is not the standard of review for development in Los Angeles County, the LUP provides policy guidance regarding visual resource issues specific to this particular case. The Malibu/Santa Monica Mountains states in Policy P132 that:

Maintain the character and value of Mulholland Scenic Corridor, as a scenic and recreational resource connecting public parklands within the Santa Monica Mountains.

In addition, Policy 125 states that "new development shall be sited and designed to protect views from LCP designated scenic highways to and along the shoreline and to scenic areas." Policy 129 indicates "structures should be designed and located so as to create an attractive appearance and harmonious relationship with the surrounding environment."

The applicant proposes to construct a new 32 ft. high, 5,350 sq. ft., multi-level single family residence including a 512 sq. ft. attached garage, a 968 sq. ft. detached structure including 506 sq. ft. guest house with 462 sq. ft. garage below, pool, deck, 20 ft. wide driveway, septic system, water storage tank and 3,601 cubic yards of grading (3,491 cu. yds. cut and 110 cu. yds. fill) for the pad* and 13,115 cubic yards grading (3,638 cu. yds. cut and 9,477 cu. yds. fill) for the driveway. Proposal also includes an offer-to-dedicate a public trail easement. *Staff notes that the grading amounts listed for the pad area are based on the original project proposal. The proposed project was amended just a few days before the preparation of this staff report. The applicant submitted revised project plans prepared by the architect but did not submit revised grading plans. Thus, the required grading amounts for the proposed project are

unknown, but are not expected to be significantly less than the originally presented figures as included in the project description.

As described above, the proposed residence is located off of Mulholland Highway in a relatively undeveloped area in the Santa Monica Mountains. Mulholland Hwy is a designated scenic corridor and provides pristine scenic vistas in this area. Mulholland Hwy is also a major coastal access route, not only utilized by local residents, but also heavily used by tourists and visitors to access several public parks and recreation areas located in the surrounding area. The proposed project will be highly visible from Mulholland Hwy. The proposed residence is located 145 ft. upslope from Mulholland Hwy as measured from the terminus of the access road with a 32 ft. high, 103 ft. wide west elevation facing eastbound travelers along Mulholland Hwy. The proposed development consists of two structures: the multi-level main residence and the two-story detached guest house/garage. The 5,350 sq. ft. residence consists of two main levels and a two-car sq. ft. garage on a lower level offset from the main portion of the residence resulting in a multi-level structure. The west elevation of the residence as viewed from Mulholland Hwy will be 32 ft. in height from the garage finished grade to the peak of the residence. The applicant's representative has suggested that the future residences on the two adjacent lots to the west, which will share the common driveway with the subject site will lessen the visual impact of the proposed development as the future residences will be located in front of the proposed development as seen from Mulholland Hwy. The two adjacent lots to the west step downslope of the subject site toward Mulholland Hwy. Staff requested a site plan illustrating potential building sites for the two adjacent lots (see Exhibit 4). Staff utilized this plan, submitted by the applicant, to analyze this theory of visual effects and determined that the future residences will not serve to screen any portion of the proposed residence as the steep terrain provides an elevation difference of approximately 55 ft. min. between the existing natural grade in the easternmost area of the conceptual residence (as drawn on the site plan) on the adjacent lot and the finished grade of the proposed residence on the subject lot. Similarly measured from the existing natural grade in the easternmost area of the conceptual residence on the next lot to the west and the finished grade of the proposed residence on the subject lot, the elevation difference is approximately 105 ft. min. As the future residences do not have the potential to lessen the visual impacts of the proposed development, it is appropriate to limit the size, scale, and bulk of the proposed development to protect the visual resources to the maximum extent feasible.

In addition to the size of the proposed development, the substantial landform alteration involved in the project will have adverse impacts on public views from Mulholland Hwy. There is a significant amount of grading required for the proposed project (16,716 cubic yards). Staff notes that given the steep topography of the site and road easement area, grading for the road cannot be significantly reduced considering the width and grade requirements of the Los Angeles Co. Fire Department. However, a redesigned development located within a smaller development footprint could result in a significant reduction of the grading for the building pad, which is currently proposed to be 3,601 cubic yards (3,491 cu. yds. cut and 110 cu. yds. fill). Staff considers this to be a feasible alternative in order to reduce adverse effects on visual resources as discussed in Section D. below.

In past permit actions, the Commission has required that new development located in highly visible, scenic areas, be restricted to a height of 18 ft. in order to protect sensitive visual resources. Further, the Commission has denied proposals for development large in scale or bulk if it does not conform to the scale and character of the surrounding area (CDP #4-02-014). The Commission denied CDP application #4-02-014 (Malibu Design Associates) in December

of 2002 for the construction of a new two story, 35 ft. high, 5,862 sq. ft. single family residence including an attached three-car garage, balconies, swimming pool and jacuzzi, driveway, retaining walls, installation of a new septic system, and performance of 1391 cu. yds of grading (392 cu. yds. cut and 999 cu. yds. fill) at the subject site. The Commission found that the proposed project site lies in a visually sensitive area and that the development proposed was not adequately designed to be compatible with the character and scale of the surrounding development in order to minimize adverse impacts to visual resources in the relatively undisturbed canyon area. In order to analyze the compatibility of the proposed development with the character and scale of the surrounding area, Staff has researched the records on existing development on various lots surrounding the subject site. The lots adjacent to the subject parcel on all sides, including the lot to the north across Mulholland Hwy are vacant. Of the 59 parcels that surround the subject lot, twenty-six are vacant. Of the thirty-three parcels which are developed, twenty of those parcels front Mulholland Hwy. The average area of existing development on those twenty lots is 3,100 sq. ft. total, including residences and appurtenant structures. Therefore, the Commission finds, in consideration of the character of the area, that the proposed development with 6,318 sq. ft. total proposed area is massive compared to the average in the surrounding area.

In addition, the site contains a segment of an existing hiking and equestrian trail. The applicant has proposed as a part of the project description to dedicate a public trail easement for the continued use of this trail, however, the current alignment falls within the proposed development area, thus, the applicant is proposing a realignment of the trail around the proposed development (see Exhibit 6). The proposed development will be in close proximity to and unavoidably visible from the trail.

Staff has confirmed during multiple site visits that the proposed structures would significantly impact public views within the Mulholland Scenic Corridor. At Staff's request, the project site was staked with poles to indicate the footprint and height of the proposed structures. Based on visual analysis of the staked project site, the proposed structure would extend partially above the ridgeline and appear massive to passersby traveling along Mulholland Hwy in the eastbound direction, significantly impacting scenic views. The proposed development will be in an area surrounded by vacant land and undisturbed hillside terrain to the south, east and west of the project site. The scale and massing of the proposed structure is not appropriate for this steeply sloping undisturbed hillside location and is not compatible with the rural character of this area. As proposed, the residence will adversely impact scenic resources along the Mulholland Scenic Corridor, therefore, the project is not consistent with the visual resource policies of the Malibu/Santa Monica Mountains LUP or the visual resource policies of the Coastal Act. Further, the Commission finds that feasible alternatives to the proposed project exist, which would substantially lessen the adverse impacts on visual resources, as discussed in Section D. below.

Staff met with the applicant's agent on several occasions and Staff suggested that the applicant redesign the project to reduce the size, bulk and scale of the development and minimize grading to bring the project into conformance with visual resource and landform alteration policies of the Coastal Act. On August 25, 2003, the applicant submitted revised plans reflecting the relocation of the detached guest house and garage in order to cluster the development a bit more and deletion of the elevator and trellis connected to the cabana, and reduce the height of the cabana from 13 ft. to 10 ft. to reduce the profile of the development. The driveway that previously led up to the detached garage, was extended to occupy the area vacated by the detached structure and beyond to accommodate guest parking. On September 22, 2003, the applicant submitted revised plans that further redesigned the project in order to

address visual resource impacts. The studio on the second floor was relocated to an area over the garage and the retaining walls on the southern end were omitted. On November 17, 2003, the applicant submitted final project plans reflecting a redesign of the residence to relocate some square footage from the first floor to an area under the first floor and amended the project description to delete the proposed cabana. The areas of the residence and detached guest house/garage remain unchanged from the original project proposal.

Although the applicant made several attempts to minimize the visual impact of the proposed structure these changes were minimal in nature and did not result in significant reduction in the visibility of the structure. Thus, the Commission finds that the proposed development as proposed has not been designed in a manner that would minimize adverse effects to public views and minimize the alteration of natural landforms and is, therefore, not consistent with Section 30251 of the Coastal Act.

C. SENSITIVE RESOURCES

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.

Section 30231 of the Coastal Act requires that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through, among other means, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. In addition, Sections 30107.5 and 30240 of the Coastal Act state that environmentally sensitive habitat areas must be protected against disruption of habitat values. Therefore, when considering any area, such as the Santa Monica Mountains, with regard to an ESHA determination one must focus on three main questions:

- 1) Is a habitat or species rare?
- 2) Is the habitat or species especially valuable because of its special nature or role in the ecosystem?
- 3) Is the habitat or species easily disturbed or degraded by human activities and developments?

The Coastal Commission has found that the Mediterranean Ecosystem in the Santa Monica Mountains is itself rare, and valuable because of its relatively pristine character, physical

complexity, and resultant biological diversity. Therefore, habitat areas that provide important roles in that ecosystem are especially valuable and meet the second criterion for the ESHA designation. In the Santa Monica Mountains, coastal sage scrub and chaparral have many important roles in the ecosystem, including the provision of critical linkages between riparian corridors, the provision of essential habitat for species that require several habitat types during the course of their life histories, the provision of essential habitat for local endemics, the support of rare species, and the reduction of erosion, thereby protecting the water quality of coastal streams. For these and other reasons discussed in Exhibit 17, which is incorporated herein, the Commission finds that large contiguous, relatively pristine stands of coastal sage scrub and chaparral in the Santa Monica Mountains meet the definition of ESHA. This is consistent with the Commission's past findings on the Malibu LCP¹.

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

As previously mentioned, the site is located in a relatively undisturbed canyon area and contains one main intact sensitive habitat type characterized as mixed chaparral in a Biological Survey prepared by Steve Nelson, consulting biologist. In the Biological Survey, the biologist notes various wildlife species sighted or heard during his site visit. The steep hillside terrain supports extensive, well developed native vegetation, which serves as natural habitat for numerous wildlife species. Commission staff visited the subject property on November 12, 2002, June 16 and November 14, 2003 and confirmed that the subject property consists primarily of chaparral vegetation. In addition, large expanses of undisturbed hillside terrain, which extend outside the south, east and west property boundaries contain significant chaparral vegetation creating a large area of contiguous habitat. Therefore, due to the important ecosystem roles of chaparral in the Santa Monica Mountains (detailed in Exhibit 17), and the fact that the subject site is relatively undisturbed and part of a large, unfragmented block of habitat, the Commission finds that the chaparral on the subject property meets the definition of ESHA under the Coastal Act.

Given the steep hillside terrain of the majority of the site, the proposed building site is the most feasible location for the proposed residence in order to minimize landform alteration and habitat disturbance. The building pad area is over 10,000 sq. ft. and is proposed for development of the residence, garage, detached guest house with garage, pool, deck, water tank and graded areas with the exception of required access areas. The applicant submitted a building pad calculation that totaled more than 20,000 sq. ft., but included the exempt turnaround area and associated grading. Staff requested a revised calculation and the applicant submitted a calculation which only included the proposed development leaving out the graded slopes and water tank, which are subject to the limitation, which totaled less than 7,000 sq. ft. In order to obtain a better estimate of the building pad area, using the grading plan submitted by the applicant for the original proposed project, Staff calculated the building pad area to be approximately 15,000 sq. ft., including the residence and garage (as redesigned on southern end), detached guest house with garage (as relocated), guest parking area, pool, deck, water tank and graded areas with the exception of required driveway and turnaround access areas. Staff would note that even though an attempt was made to measure the building pad area with

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

consideration to the design modifications, the revisions made to the proposed project may potentially alter the figure slightly to reflect possibly less grading on the southern end of the residence, in the area of the relocated guest house and/or around the area where the cabana was previously proposed. However, even given such adjustments, the proposed building pad area would not appear to be in conformance with the 10,000 sq. ft. pad area limitation for development located in ESHA, which the Commission has imposed through past permit actions as explained in detail below.

As explained above, the entire parcel contains vegetation that constitutes an environmentally sensitive habitat area (ESHA) pursuant to Section 30107.5 as determined by the Commission's staff biologist during a site visit in June, 2003 (as also discussed in the memo attached as Exhibit 17). Section 30240 requires that "environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas." As the entire parcel constitutes an environmentally sensitive habitat area, Section 30240 restricts development on the parcel to only those uses that are dependent on the resource. The applicant proposes to construct a single family residence and other appurtenant structures on the parcel. As single family residences do not have to be located within ESHAs to function, the Commission does not consider single family residences to be a use dependent on ESHA resources. Application of Section 30240, by itself, would require denial of the project, because the project would result in significant disruption of habitat values and is not a use dependent on those sensitive habitat resources.

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

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

While the applicant is entitled under Section 30010 to an assurance that the Commission will not act in such a way as to take their property, this section does not authorize the Commission to avoid application of the policies of the Coastal Act, including Section 30240, altogether.

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

In past permit actions, the Commission has applied a 10,000 sq. ft. limit on building pad areas on sites within significant watersheds and sensitive habitat areas to minimize adverse impacts to those sensitive resources. As noted above, the proposed building area, including the proposed structures and all graded areas with the exception of the driveway and required turnaround area, is more than the maximum allowed 10,000 sq. ft. In addition, in this area, the Fire Department requires fuel modification in a 200-foot radius from all habitable structures to reduce the risks of wildfire. The resulting fuel modification requirements for the proposed development will cause significant disruption of habitat values in ESHA (see Exhibit 5). Impacts to the ESHA onsite can be minimized by limiting the development area to 10,000 sq. ft. max. and by redesigning the development to a much smaller development footprint. The Commission, therefore, finds that construction of the proposed project will not minimize significant adverse impacts on the sensitive chaparral habitat. As such, the Commission finds that the proposed project is not adequately located and designed with clustering, minimal landform alteration, and an accommodating fuel modification plan, to minimize potential adverse impacts to ESHA existing on the project site.

Commission staff has considered whether alternative proposals for residential development on the subject parcel would minimize adverse impacts to ESHA. The proposed development is sited to take advantage of the most environmentally preferable and feasible building location for the residence and access road, however, the development is not designed in such a way as to minimize the impacts to ESHA from construction, grading or fuel modification for purposes of fire protection. The Commission finds that the implementation of the design alternatives described in Section D. below would significantly reduce the development envelope and thus, reduce the disturbance of sensitive habitat onsite by minimizing removal of habitat for construction of the proposed structures and reduce the resulting fuel modification area, which displaces natural vegetation and disrupts habitat values.

For the reasons set forth above, the Commission finds that the proposed project will result in significant adverse impacts to sensitive environmental resources on the site, and is therefore inconsistent with Sections 30240 of the Coastal Act.

D. PROJECT ALTERNATIVES

Although the Commission is denying the applicant a coastal development permit for the residence as proposed, the Commission notes that the applicant is not barred from applying for a permit or pursuing an alternative proposal that minimizes the impacts to visual and environmentally sensitive resources. The Commission notes that although more limited residential development may be allowed on site, due to the constrained nature of the project site (steep hillside slopes and unavoidable visibility from public viewing areas) new development on the site should be designed and located in a manner which minimizes grading and landform alteration together with development of reduced size, bulk and scale consistent with the protection of public views along Mulholland Scenic Corridor. As described in more detail below, basic changes in the design of the residence have been identified that would minimize impacts

to public views and sensitive habitat areas while still allowing the property to be developed with a single family residence in compliance with the Coastal Act.

In this case, alternatives to the proposed project plans are feasible that would significantly reduce the amount of landform alteration onsite and minimize adverse effects to public views along the Mulholland Hwy corridor consistent with Coastal Act Section 30251, while at the same time lessening impacts to sensitive habitat area onsite consistent with Coastal Act Section 30240. In the subject application, the applicant has proposed a 32 ft. high residence, which extends partially above the ridgeline as viewed from Mulholland Highway. In addition, the west elevation facing the eastbound traveling public is approximately 103 ft. across against a natural undisturbed hillside backdrop clearly visible from the scenic corridor. Finally, the expansive proposed building pad area presents unavoidable significant adverse impacts to ESHA onsite via development and resulting fuel modification. To address these issues, staff reviewed typical options that would eliminate the adverse effects to public scenic views and natural habitat at the site, including (1) clustering the development within a more appropriately sized building envelope, (2) designing the project to conform to the natural topographic contours of the site, (3) reducing the size and scale of the proposed development in keeping with the character of the surrounding area, (4) limiting the structure to a single story. The Commission notes that implementation of a combination of the above alternatives to the proposed project would still allow for a reasonable size, bulk and scale residential development of the subject site to occur.

The first option, to cluster the development within a more appropriately sized building envelope, such as the 10,000 sq. ft. max. typically allowed by the Commission within ESHA, would lessen the adverse impacts to visual and habitat resources by reducing the amount of natural vegetation removed within the immediate vicinity of the proposed building pad area due to development and resulting required fuel modification area. In this case, the Commission notes that construction of the proposed detached guest house and garage structure, flattened yard area with pool and deck, and guest parking area are not necessary in order to allow for residential development to occur on the subject site and that substantial reduction in size or deletion of these structures/graded areas in their entirety is a feasible alternative. Such a reduction in size or deletion of any or all of these project components entirely would allow more flexibility in redesigning the main residence and provide for further clustering on a smaller building pad, thereby, reducing the visual impact of the project.

The second option, designing the project to conform to the natural topographic contours of the site, can be achieved in a combination of ways. One way is to "step" the residence into the topographic contours of the site by grading multiple levels along the slope. This method has been employed to some degree in the current design of the residence, but still produces the visual effect of a multi story residence as viewed from the public viewing area. Another way to conform to the natural contours would be to design the peak of the proposed development such that it does not extend above the top of the ridgeline so as not to alter the natural form of the mountain as seen from the public looking upslope toward the ridge behind the residence.

The third option, reducing the size and scale of the proposed development in keeping with the character of the surrounding area, would restrict the proposed development to a smaller size and scale to fit in with the surrounding development. The Commission notes that construction of a large structure on even a gently sloping site typically requires a significantly greater amount of grading and landform alteration than would otherwise be required in order to construct a smaller size, bulk or scale structure. Moreover, substantially reducing the roof to the minimum necessary or a flat roof design and eliminating the lower level could reduce the west elevation

to the minimum necessary to construct a residence. In addition, reducing the width of the residence across the south elevation, now proposed to be about 103 feet wide, would also reduce the public visibility of the structure. Constructing a reduced size, bulk and scale residential structure on the site would require significantly less grading and landform alteration, would minimize adverse effects to public views, and would still allow for residential development to occur on site. The substantial reduction of the size and scale of the development on this site would be a considerable benefit to visual resources, especially in concert with the other suggested alternatives discussed in this section.

The fourth option is to minimize adverse effects upon public views by limiting the project to a single story of no more than 18 ft. in height. If the residence was designed at 18 feet in height above natural grade, the standard height consistent with previous Commission actions on projects in visually sensitive areas, a significant portion of natural canyon views would be retained over the structure. This height limit would allow for a large single story residence with a pitched roofline and is a feasible alternative. As presently designed, the upper floor of the proposed residence is 2,664 square feet in size and the garage is 512 sq. ft. This combined floor area (3,176 sq. ft.) is larger than total size of other developments in the vicinity. As noted above, the average development size on parcels in the surrounding area which front Mulholland Hwy is 3,100 sq. ft. total according to Los Angeles County Assessor's data.

The Commission notes that implementation of a combination of the above alternatives to the proposed project would significantly reduce the amount of vegetation disturbance, landform alteration and the size, bulk and scale of the publicly visible development necessary for a proposed residential development to occur. As such, the Commission notes that feasible preferred alternatives to the proposed project exist that would lessen the adverse impacts on coastal resources with respect to public views, landform alteration and sensitive habitat.

E. LOCAL COASTAL PROGRAM

Section 30604(a) of the Coastal Act states:

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

Section 30604(a) of the Coastal Act provides that the Commission shall issue a Coastal Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with Chapter 3 policies of the Coastal Act. The preceding sections provide findings that the proposed project will not be in conformity with the provisions of Chapter 3 as proposed by the applicant. Therefore, the Commission finds that approval of the proposed development, as conditioned, will prejudice the County's ability to prepare a Local Coastal Program for the Santa Monica Mountains area which is also consistent with the policies of Chapter 3 of the Coastal Act as required by Section 30604(a).

F. 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 finds that the proposed project will have significant adverse effects on the environment, within the meaning of the California Environmental Quality Act of 1970. Therefore, the proposed project is determined to be inconsistent with CEQA and the policies of the Coastal Act.

LOS ANGELES CO.

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SEE 589

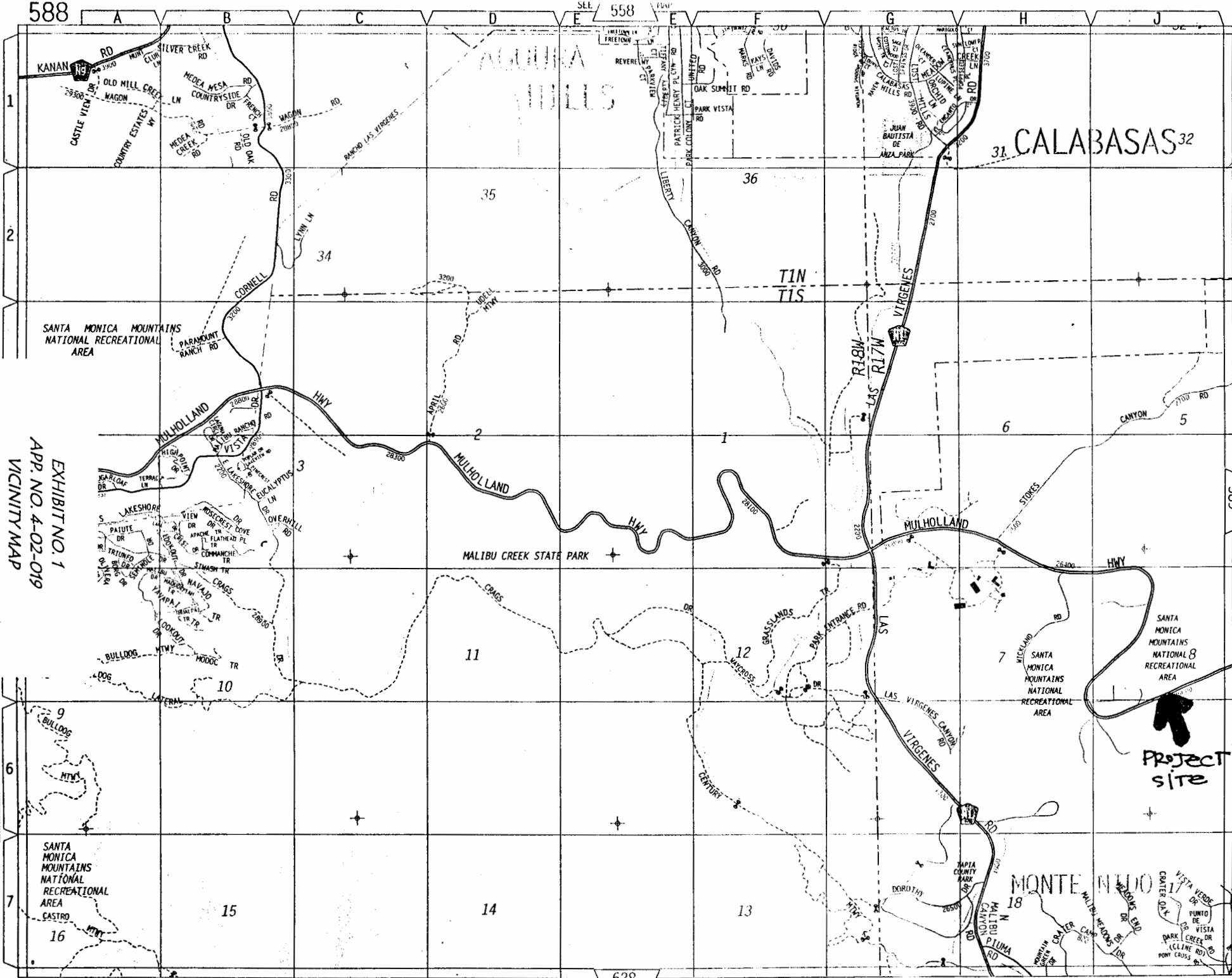


EXHIBIT NO. 1
 APP. NO. 4-02-019
 VICINITY MAP

Project site

MAP



View Enlarged Map

View Printing Instructions

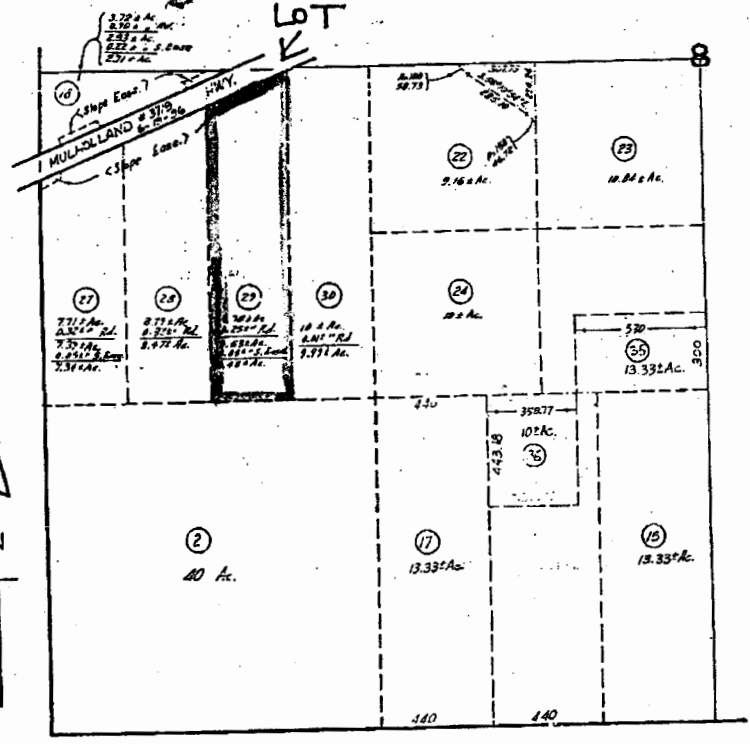
County of Los Angeles: Rick Auerbach, Assessor

4 455 | 17
SCALE 1" = 400'

2003

SUBJECT LOT

660812
667802
670802
Revised:
1-29-58
12-23-58
3-27-59
4-3-63
70079605
84082803-85
1612307001001-02
2002/1660000100-02
2002/16600004-02



T. 1 S., R. 17 W.

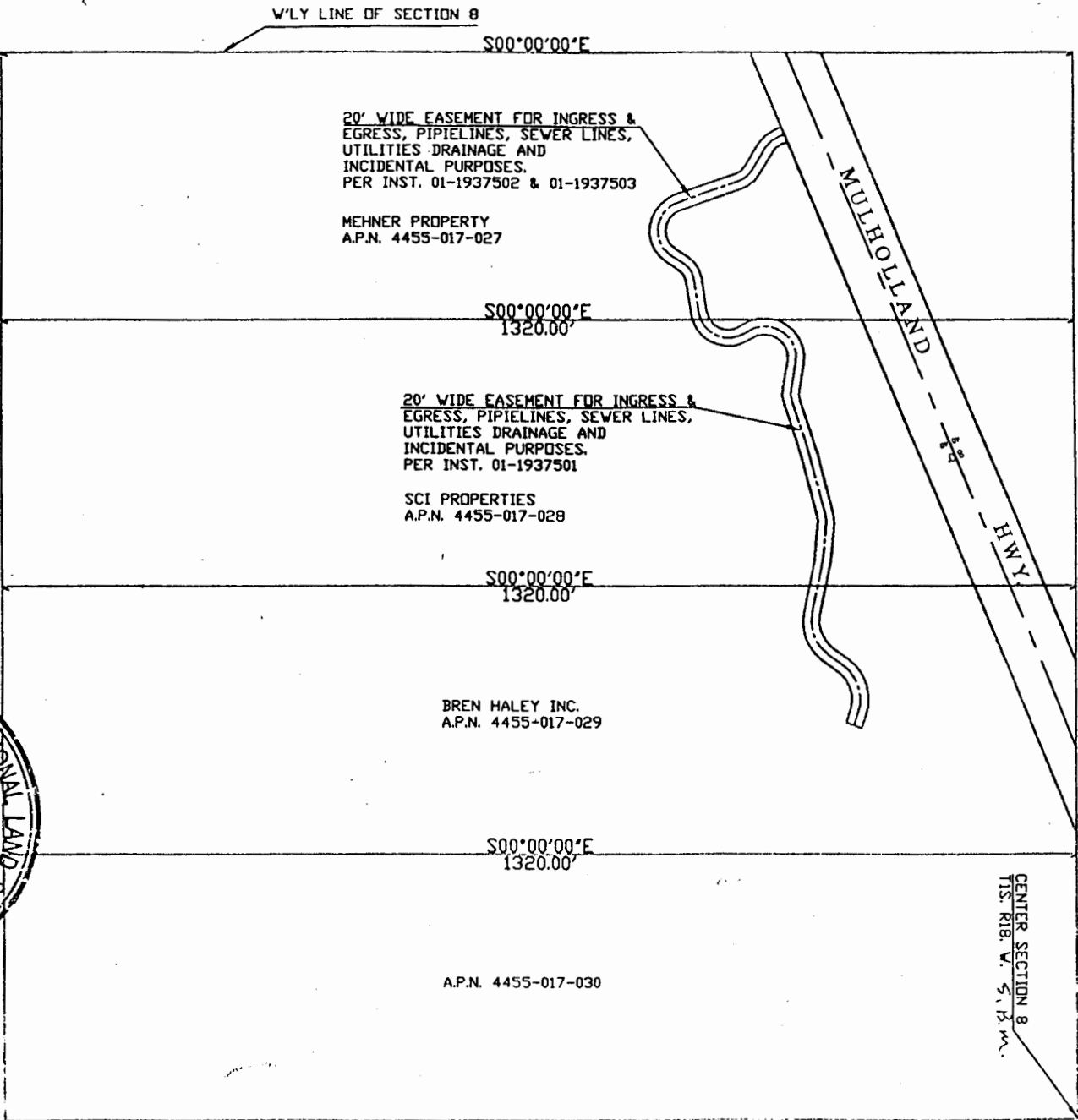
CODE
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FOR PREV. ASSMT. SEE:
4455 - 17

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

EXHIBIT NO. 2
APP. NO. 4-02-019
PARCEL MAP

EXHIBIT "B"



SV. COR. OF THE NW 1/4
OF SV 1/4 OF
SECTION 8 S. B.M.

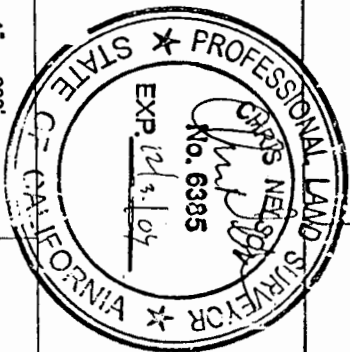
PREPARED BY:



Chris Neilson
& Associates, Inc.
PROFESSIONAL LAND SURVEYORS
2014 Redwood Road, Redwood City, CA 94061
Phone: 650.754.1140 Fax: 650.754.1141

CHRIS NELSON, P.L.S. 6385

EXP 1



SCALE: HORIZ. 1" = 200'

VERT. _____

SHEET No. 1 OF 1

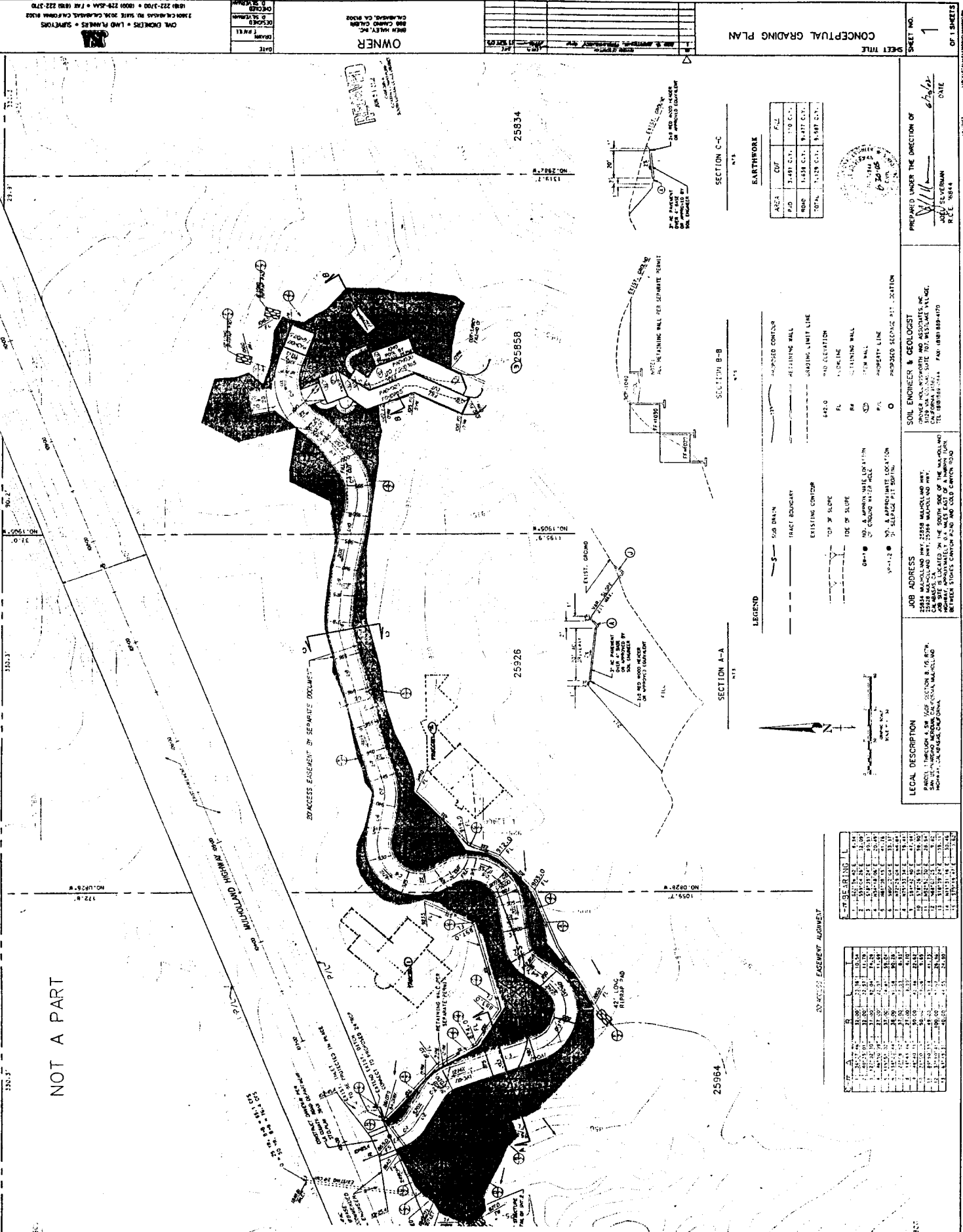
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03-847

EXHIBIT NO. 3

APP. NO. 4-02-019

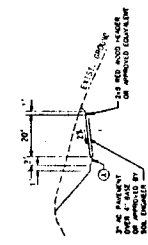
ROAD EASEMENT SURVEY



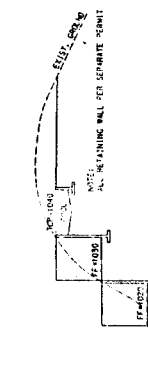
CONCEPTUAL GRADING PLAN

SHEET NO. 1
OF 1 SHEETS

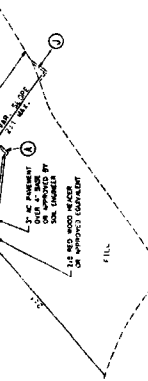
SECTION C-C



SECTION B-B



SECTION A-A



EARTHWORK

AREA	CUT	FILL
ROAD	1,438 C.Y.	8,477 C.Y.
TOTAL	1,438 C.Y.	8,477 C.Y.

LEGEND

- SUB DRAIN
- TRACT BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- RETAINING WALL
- WARNING LIMIT LINE
- 2' MIN. SLOPE
- NO. 4 APPROX. MALE LOCATION
- NO. 4 APPROX. FEMALE LOCATION
- NO. 4 APPROX. MATE LOCATION
- PROPOSED SEWER PIPE LOCATION

PREPARED UNDER THE DIRECTION OF
 JUDY SILVERMAN
 R.C.E. 70844

SOIL ENGINEER & GEOLOGIST
 JUDY SILVERMAN AND ASSOCIATES, INC.
 1000 S. GARDEN ST., SUITE 200
 ANAHEIM, CALIFORNIA 92805
 TEL: (714) 933-1044 FAX: (714) 933-4170

JOB ADDRESS
 25984 MARSHLAND HWY. 25984 MARSHLAND HWY.
 SAN JUAN VILLAGE, MERRIMA, CALIFORNIA 92576
 APPROXIMATELY 1/4 MILE EAST OF A TOWER TURN
 BETWEEN STOKES CANYON ROAD AND GOLD CANYON ROAD

LEGAL DESCRIPTION
 PARCEL 1, TRACT 4, S.W. 1/4, SECTION 8, T. 8 N.,
 S.W. 1/4, R. 10 W., S. 10 S., SAN JUAN VILLAGE, MERRIMA,
 ANAHEIM, CALIFORNIA 92576

20' ACCESS EASEMENT ALIGNMENT

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ELEVATION	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ELEVATION	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

EXHIBIT NO. 4
 APP. NO. 4-02-019
 GRADING/SITE PLAN WITH POTENTIAL
 DEVELOPMENT SITES ON ADJACENT
 PARCELS

OWNER
 BOB HALEY, INC.
 800 CAMP CALLE
 CALIFORNIA, CA 92028

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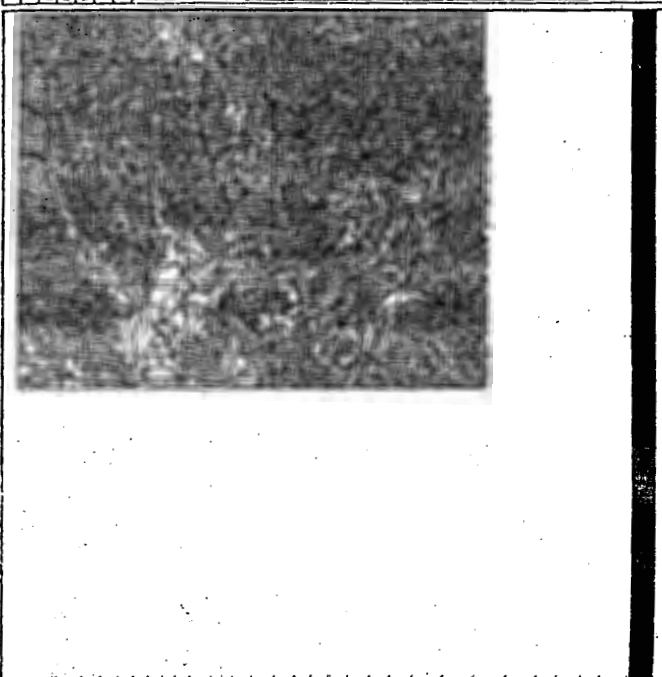
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- 1 SITE PLAN assessors parcel map location
- 2 SUBDIVISION & ROAD PLAN
- 3 FUEL MODIFICATION PLAN landscape plan irrigation plan
- 4 GRADING & DRAINAGE: lower level & 1st floor
- 5 ARCHITECTURAL:
- 6 2ND FLOOR
- 7 ELEVATIONS
- 8 SECTIONS B & C
- 9

Project description:
 APR 7 4435 017 059
 200 acres
 Fire Zone: High 4
 nearest gross street: between Cold Cym & Lee
 Vigorosa fire hydrant: na
 fully sprinkled
 street width at entry: 20.0'

gross area	512 sq ft
first floor	2174
second floor	2884
Total	5330
guest house	606
garage	462
total	968
Gross Area :	4318 sq ft

BRUNNEN & ASSOCIATES
 25858 MULHOLLAND HWY.
 MALIBU CA 90263

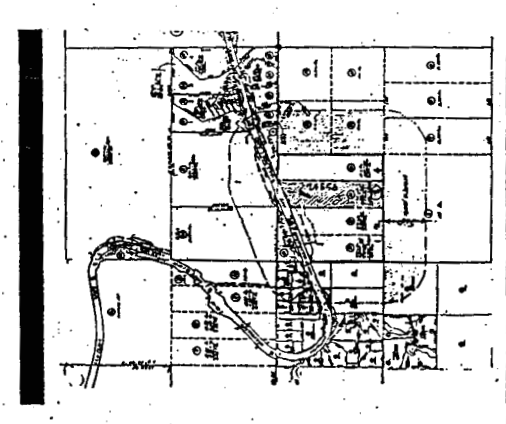
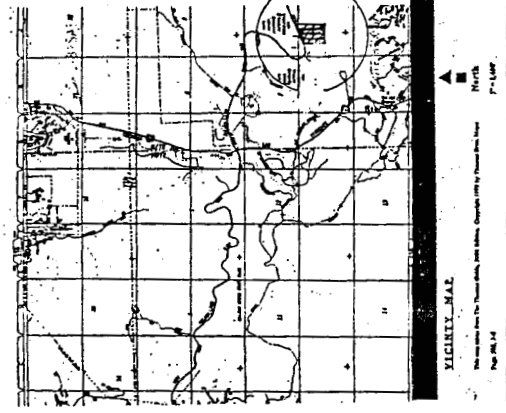
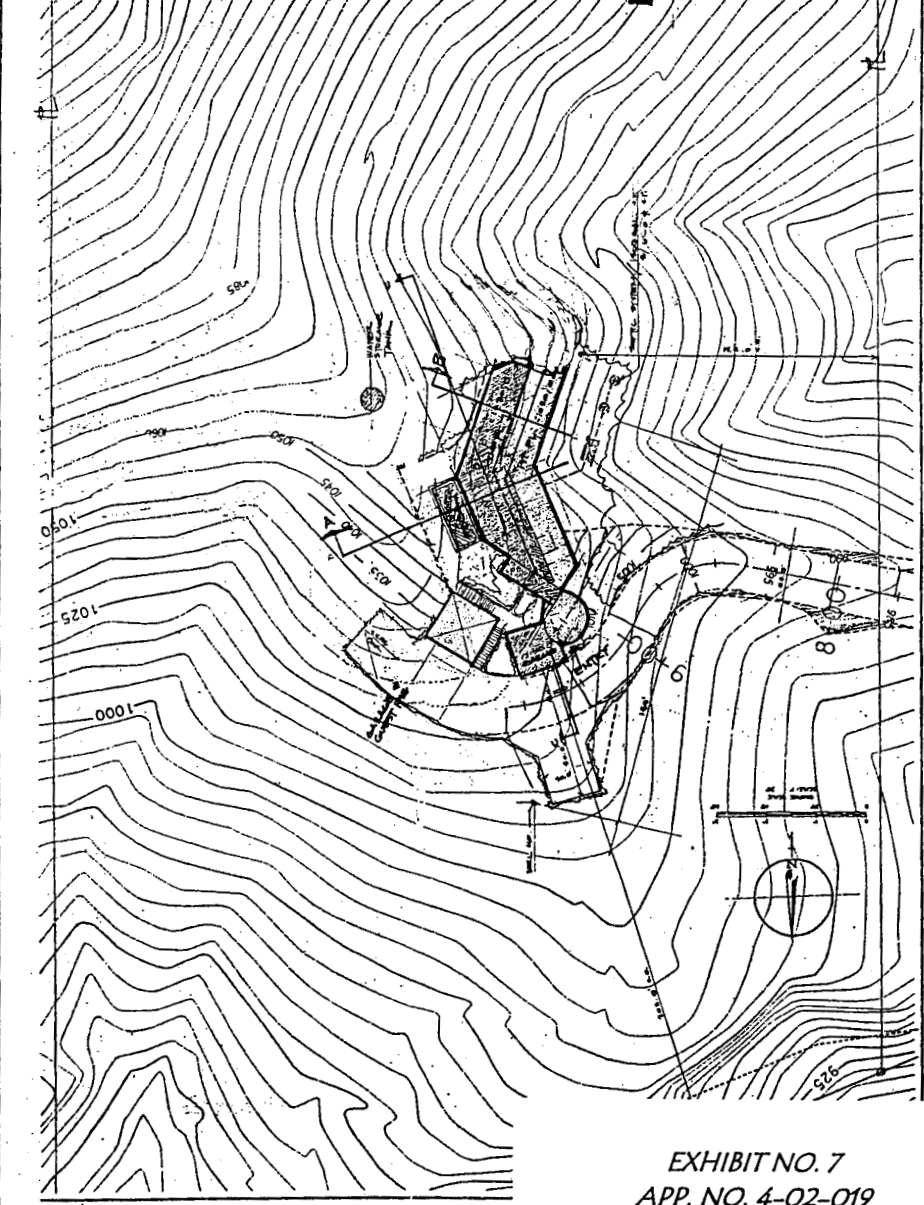
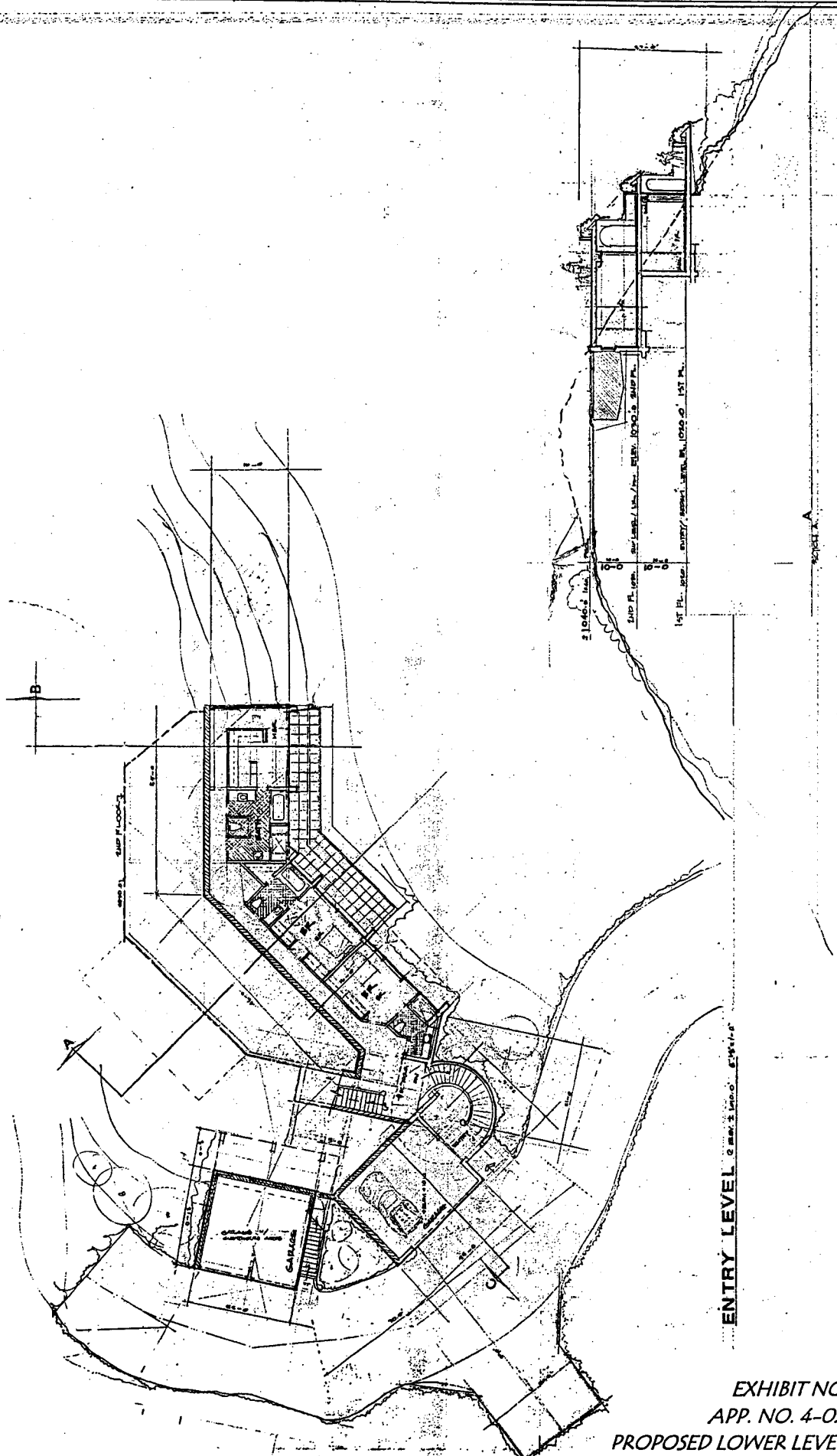


EXHIBIT NO. 7
 APP. NO. 4-02-019
 PROPOSED SITE PLAN

PROJECT LOCATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

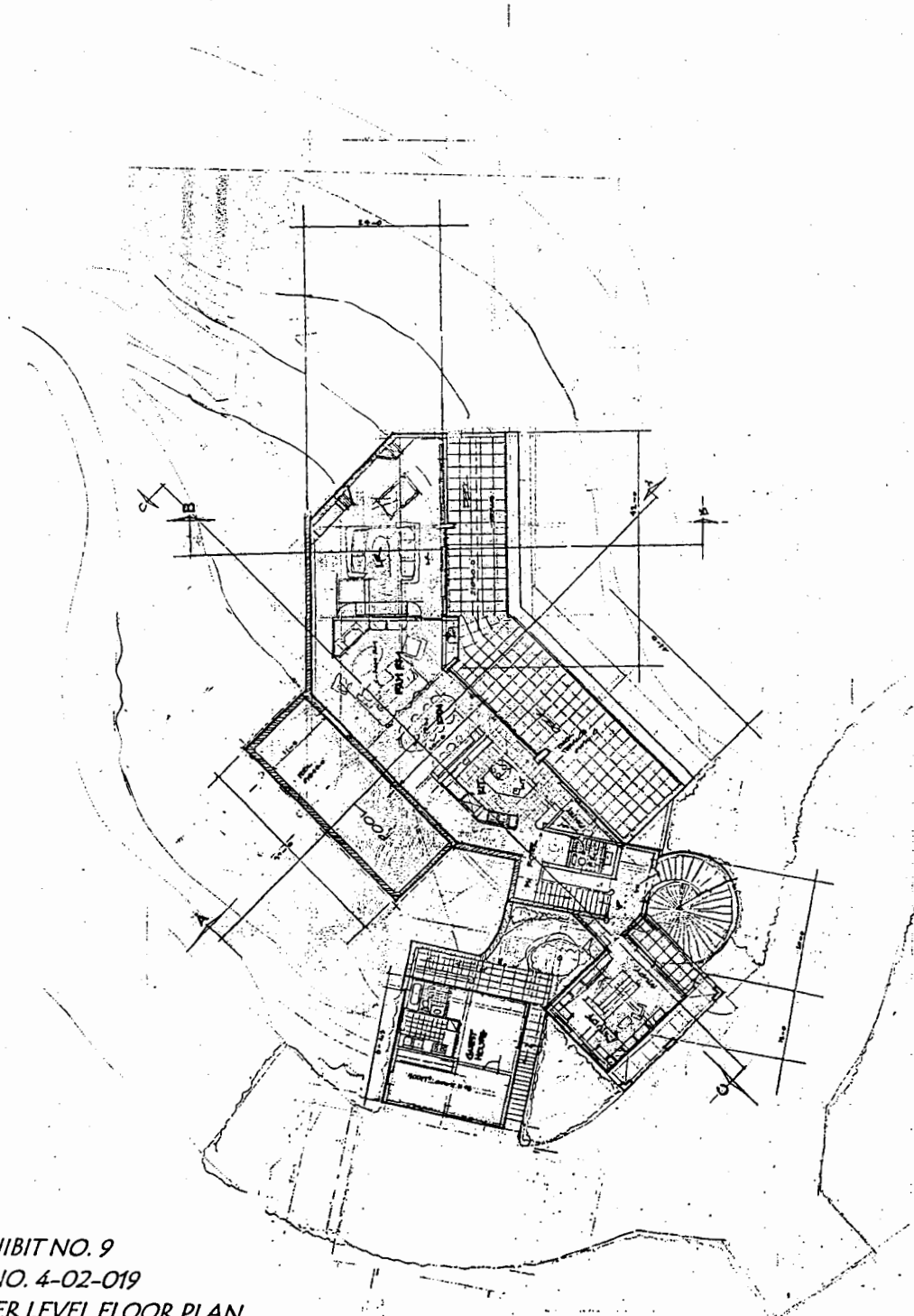
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ENTRY LEVEL @ 1000.0' TO 1000.0' @ 1000.0'

EXHIBIT NO. 8
 APP. NO. 4-02-019
 PROPOSED LOWER LEVEL AND GARAGE
 FLOOR PLAN



UPPER LEVEL

EXHIBIT NO. 9
APP. NO. 4-02-019
PROPOSED UPPER LEVEL FLOOR PLAN

REVISIONS	NO.	DATE	BY	CHKD.
1				
2				
3				
4				
5				

PROJECT NO.	4-02-019
DATE	10/15/10
SCALE	AS SHOWN
DESIGNER	W. J. ...
CHECKER	...

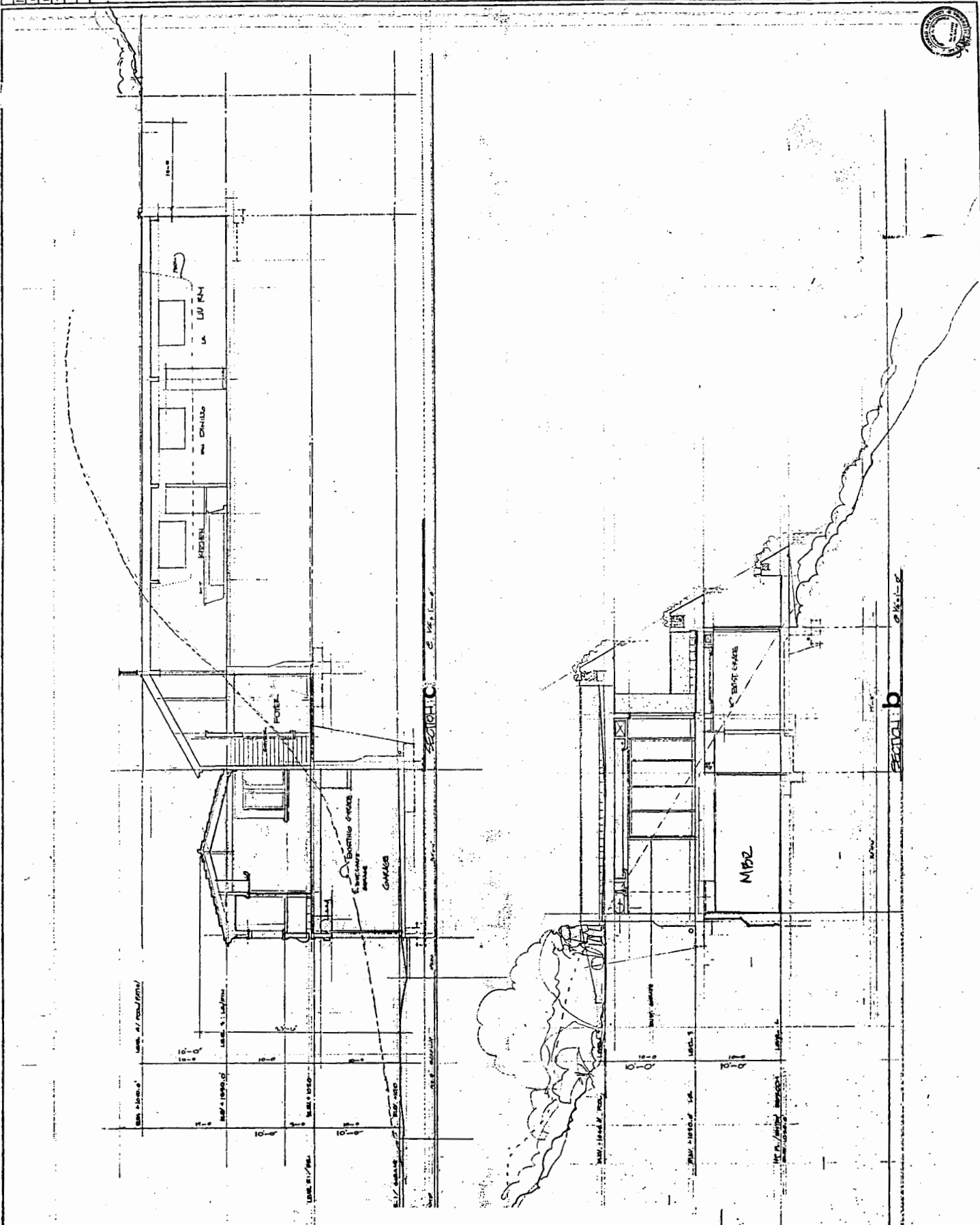


EXHIBIT NO. 11
 APP. NO. 4-02-019
 PROPOSED SECTIONS

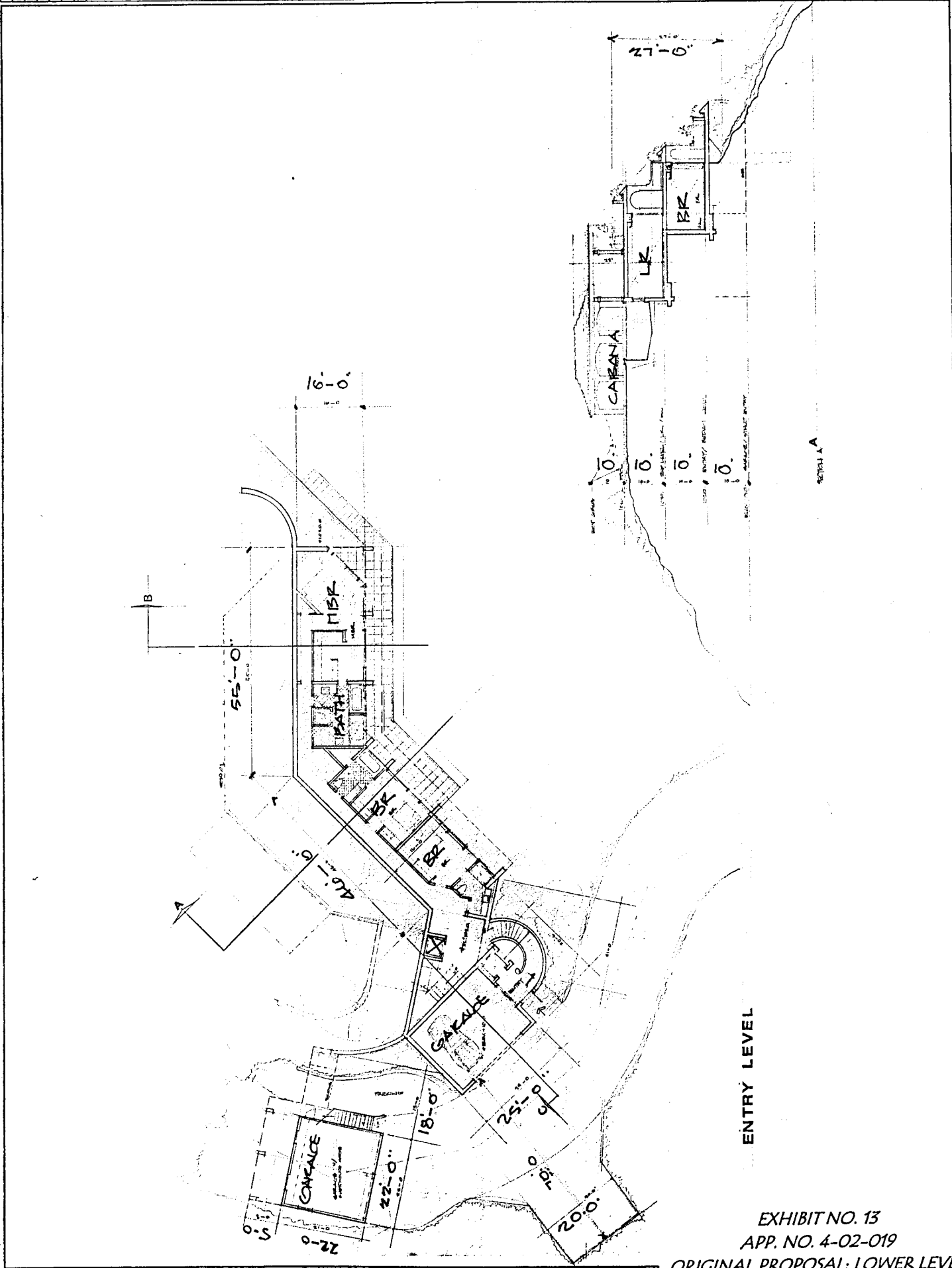
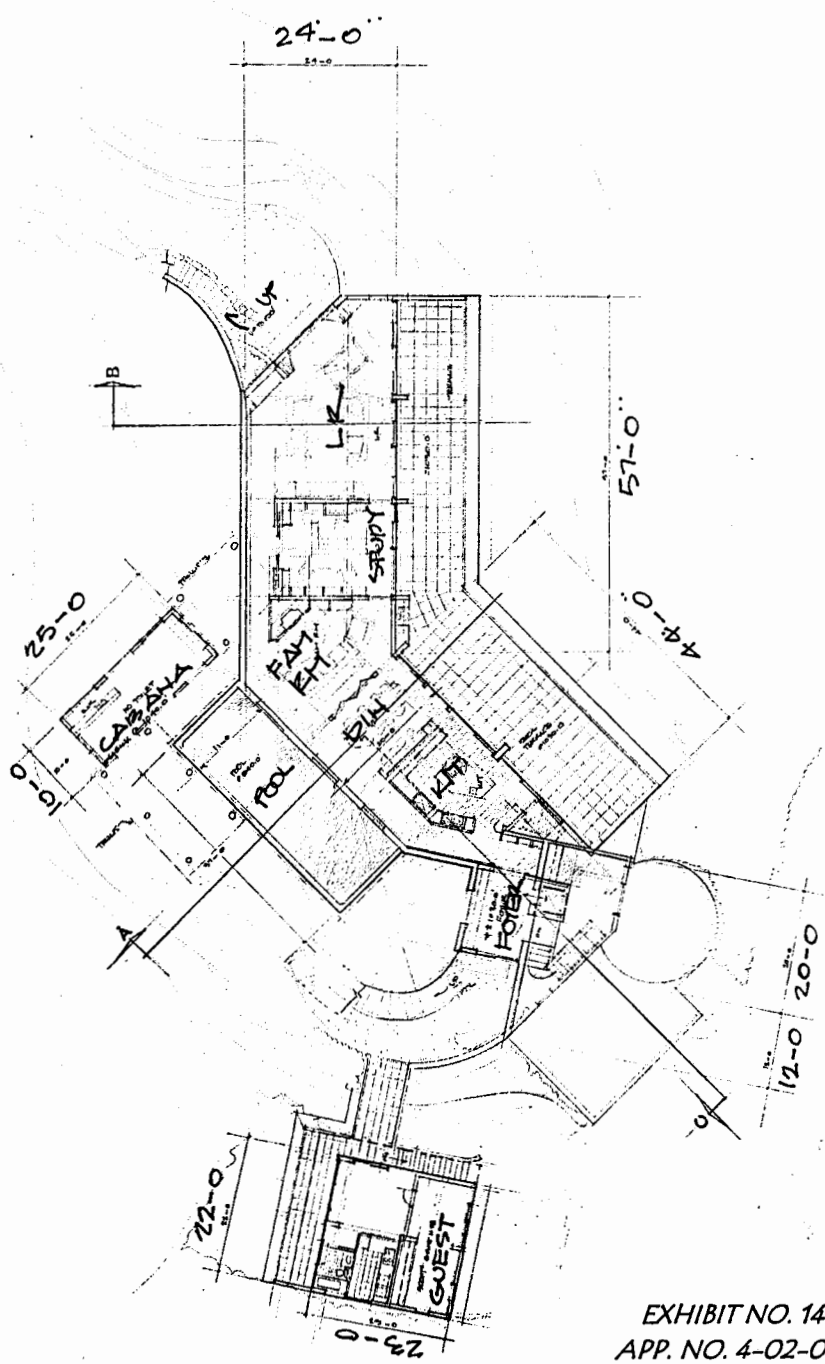


EXHIBIT NO. 13
 APP. NO. 4-02-019
 ORIGINAL PROPOSAL: LOWER LEVEL
 AND GARAGE FLOOR PLAN

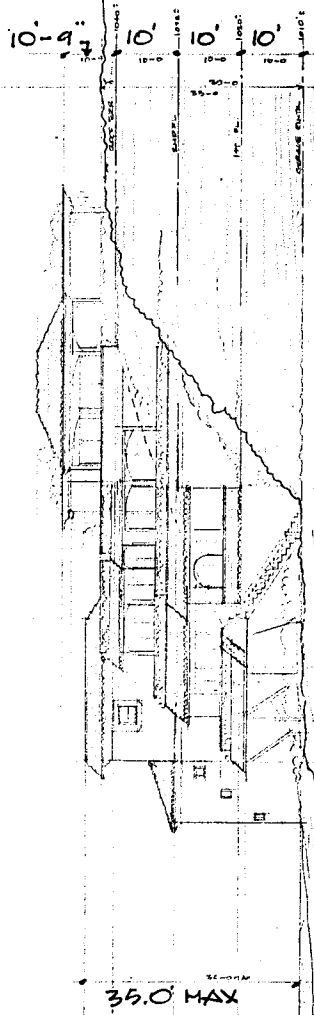


UPPER LEVEL

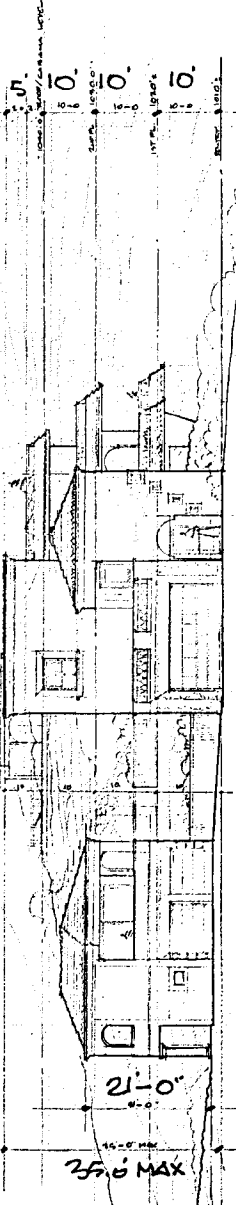
EXHIBIT NO. 14
 APP. NO. 4-02-019
 ORIGINAL PROPOSAL: UPPER LEVEL
 FLOOR PLAN

REVISIONS BY	
DATE	

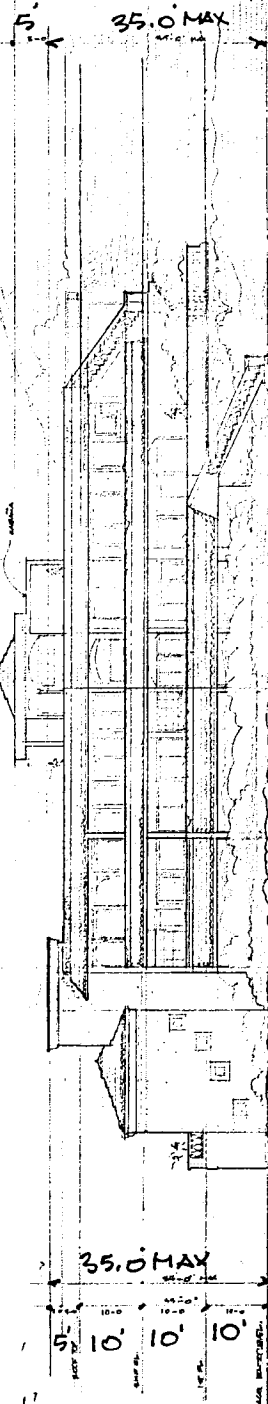
DATE	
BY	
SCALE	
PROJECT NO.	
7	



SOUTH ELEVATION 2'-1/8" = 1'-0"



NORTH ELEVATION 2'-1/8" = 1'-0"



WEST ELEVATION 2'-1/8" = 1'-0"

EXHIBIT NO. 15
 APP. NO. 4-02-019
 ORIGINAL PROPOSAL: SOUTH, NORTH
 AND WEST ELEVATIONS

CALIFORNIA COASTAL COMMISSION

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



M E M O R A N D U M

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

TO: Ventura Staff

SUBJECT: Designation of ESHA in the Santa Monica Mountains

DATE: March 25, 2003

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

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

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

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

*EXHIBIT NO. 17
APP. NO. 4-02-019
DR. DIXON'S BIOLOGICAL MEMO*

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

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

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

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

Ecosystem Context of the Habitats of the Santa Monica Mountains

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

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

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

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

² Ibid.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

¹⁵ NPS. 2000. op.cit.

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

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

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

Major Habitats within the Santa Monica Mountains

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

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

Riparian Woodland

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

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

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

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

²¹ Ibid.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Coastal Sage Scrub and Chaparral

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

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

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

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

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

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

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

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

Relationships Among Coastal Sage Scrub, Chaparral and Riparian Communities

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Coastal Sage Scrub

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

⁵² *Ibid.*

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

⁵⁴ Westman, W.E. 1981. *op. cit.*

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

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

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

⁵⁸ NPS, 2000, *op. cit.*

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

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

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

Chaparral

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

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

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

⁶⁰ Westman, W.E. 1981. op. cit.

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

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

⁶³ Ibid.

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

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

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

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

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

⁶⁴ Ibid.

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

⁶⁶ Ibid.

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

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

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

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

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

Oak Woodland and Savanna

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

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

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

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

⁷¹ Ibid.

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

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

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

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

Grasslands

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

California Perennial Grassland

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

⁷² NPS 2000. op. cit.

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

⁷⁴ Cody, M.L. 1977. Birds. Pp. 223-231 in 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, wren-tit, blue-gray gnatcatcher, California thrasher, orange-crowned warbler, rufous-crowned sparrow, spotted towhee, California towhee) and 3) urban-associated species

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

⁸⁶ 1996 Los Angeles County Fire Code Section 1117.2.1

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

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

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

⁹⁰ Ibid.

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

Effects of Fuel Clearance on Arthropod Communities

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

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

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

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

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

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

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

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

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

Artificial Night Lighting

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

Summary

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

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

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

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

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

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

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

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

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

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

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

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

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