W 9b

STATE OF CALIFORNIA -- THE RESOURCES AGENCY Arnold Schwarzenegger, *Governor*

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

ADDENDUM

DATE: December 10, 2007

TO: Commissioners and Interested Parties

FROM: South Central District Staff

SUBJECT: Agenda Item **W 9b**
Coastal Development Application No. **4-06-118 (LACDPW)**

The purpose of this addendum is to:

1. Attach correspondence to the Commission received from Santa Monica Baykeeper in opposition to the proposed project (**Exhibit 1** of this addendum). The letter states that the applicant's proposed project, that includes installing rip rap armoring along the stream bank, is not a long term solution to bank stability, erosion, and water quality problems of Tuna Canyon Creek. Santa Monica Baykeeper recommends the existing road and culvert should be replaced with an elevated roadway that would allow the creek to recapture floodplain and dissipate the erosive forces of large storm flows. Staff would note that the feasibility of an elevated roadway on caissons is similar to the retaining wall alternative analyzed by the County Geotechnical and Materials Engineering Division, which was determined infeasible due to the composition and depth of the landslide debris in this area (more than 60 feet deep and highly fractured). No competent materials were found in the borings drilled at the site.

2. Make the following corrections to the November 20, 2007 staff report for CDP Application No. 4-06-118 (additions are underlined and deletions are shown in ~~strikethrough~~).

a. The following policy reference is hereby added to the beginning of Section B on Page 11 of the staff report. The findings for this policy can be found on Page 29 of the staff report.

Section 30236 of the Coastal Act states that:

> ***Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.***

b. The third paragraph on Page 31 of the staff report is hereby revised as follows:

Special Condition Two (2) requires re-vegetation of all areas of the project site temporarily disturbed by grading and construction activities, and requires restoration of disturbed chaparral

habitat (at a ratio of 3:1 or greater) as mitigation for all areas (approximately one acre) permanently displaced due to the realigned road and installation of the terrace drain system. The restoration ~~may be implemented on the project site if appropriate area exists, or alternatively, the restoration may~~ shall be implemented in a suitable location off-site, subject to the review and approval of the Executive Director, that is restricted in perpetuity from development or is public parkland. The 3:1 mitigation cannot be accomplished at the project site because no appropriate disturbed chaparral habitat exists on-site. The restoration area shall be delineated on a site plan and shall be located in the same ~~vicinity of~~ watershed as the project site within the coastal zone of the Santa Monica Mountains. Special Condition 2 further stipulates that all planted materials must be native plant species that are appropriate for chaparral habitat. Additionally, all invasive and non-native plant species shall be removed from the restoration and project area. In addition, Special Condition 2 also requires the applicant implement a five year monitoring program to ensure the success of the replanting.

c. The first paragraph on Page 10 of the staff report is hereby revised as follows to provide clarification regarding sycamore and oak trees in the drainage area.

According to the applicant's submitted biological reconnaissance survey conducted in July 2005 by URS Corporation, the project site contains native chaparral and oak-sycamore woodland vegetation. It is estimated that just over one acre (46,000 sq. ft.) of native mixed chaparral vegetation on the upland slope and 0.22-acres (9,600 sq. ft.) of riparian vegetation along Tuna Canyon Creek will be disturbed by the proposed project. In addition, the proposed project will require the removal of eleven (11) Coast Live oak trees on the upland slope that are at least 6 inches in diameter four and a half feet above ground (**Exhibit 4**). The applicant proposes to restore the riparian corridor in place (1:1 mitigation ratio) and implement Best Management Practices (BMPs) for erosion, pollution, and sediment control to avoid adverse impacts to the stream channel. Several California sycamore and Coast Live oak trees are situated in the riparian corridor and on the slopes above the drainage. The applicant's biologist indicates that these trees will be avoided as feasible during project construction.

d. Special Condition No. Five (5) on Page 8 is hereby revised as follows:

5. Oak and Sycamore Tree Protection, Mitigation, and Monitoring

To ensure that the oak and sycamore trees located in the area of the on-site drainage are protected during construction activities, temporary protective barrier fencing shall be installed around the protected zones (5 feet beyond dripline or 15 feet from the trunk, whichever is greater) of all oak and sycamore trees and retained during all construction operations. A biological consultant, arborist, or other resource specialist shall be present on-site during construction operations in the area of the drainage and shall immediately notify the Executive Director if unpermitted activities occur or if any oak or sycamore trees are damaged, removed, or impacted beyond the scope of the work allowed by Coastal Development Permit 4-06-118. This monitor shall have the authority to require the applicant to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise. Should any of the oak or sycamore trees in the area of the drainage be damaged or removed as a result of construction activities, at least ten replacement plants shall be planted on the project site as mitigation. In that case, the applicant shall submit, for the review and approval of the Executive Director, a supplemental oak and/or sycamore tree replacement planting program, prepared by a qualified biologist, arborist, or other qualified resource specialist, which specifies replacement tree locations, planting specifications, and a monitoring program to ensure that the replacement planting program is successful. An annual monitoring report on the supplemental oak tree replacement area shall be submitted for the review and approval of the Executive Director for

each of the 10 years. Upon submittal of the replacement planting program, the Executive Director shall determine if an amendment to Permit No. 4-06-118, or an additional coastal development permit, from the Commission is required.

Prior to issuance of the Coastal Development Permit, the applicant shall submit, for the review and approval of the Executive Director, an off-site oak tree replacement planting program, which specifies replacement tree locations, tree or seedling size planting specifications, and a ten-year monitoring program with specific performance standards to ensure that the replacement planting program is successful. The applicant may coordinate with the Mountains Restoration Trust to prepare and implement the off-site oak tree replacement planting program. At least one hundred and ten (110) replacement seedlings, less than one year old, grown from acorns collected in the selected planting area, shall be planted as mitigation for impacts to eleven (11) oak trees as a result of the proposed project. All replacement seedlings must be planted in a suitable location off-site that is restricted in perpetuity from development or is public parkland. An appropriate off-site planting area may be identified in collaboration with the Mountains Restoration Trust (MRT), and shall be located in the Tuna Canyon watershed within the coastal zone of the Santa Monica Mountains. The applicant shall commence implementation of the approved off-site oak tree replacement planting program concurrently with the commencement of construction on the project site. An annual monitoring report on the oak tree replacement area shall be submitted for the review and approval of the Executive Director for each of the 10 years. If monitoring indicates the oak trees are not in conformance with or has failed to meet the performance standards specified in the monitoring program approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental planting plan for the review and approval of the Executive Director. The revised planting plan shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

e. The following is hereby added to the end of Page 32 of the staff report.

In addition, in order to ensure that impacts to oak and sycamore trees in the area of the on-site drainage is avoided during construction operations, **Special Condition Five (5)** also requires that the applicant to install temporary protective barrier fencing around the protected zones (5 feet beyond dripline or 15 feet from the trunk, whichever is greater) of all oak and sycamore trees and retained during all construction operations. To ensure that no impacts outside the scope of work allowed by this permit occur to the oak and sycamore trees in the area of the drainage, **Special Condition Five (5)** requires the applicant to retain the services of a qualified biological consultant or arborist, who shall be present on site during construction operations in the area of the drainage. The consultant shall immediately notify the Executive Director if unpermitted activities occur or if any oak or sycamore trees in the drainage corridor are damaged, removed, or impacted beyond the scope of the work allowed by this permit. This monitor shall have the authority to require the applicants to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise. The applicant shall provide on-site oak tree mitigation, at a 10:1 ratio, in the event that any oak tree is damaged or lost. Should any of the oak or sycamore trees in the area of the drainage be damaged or removed as a result of construction activities, at least ten replacement plants shall be planted on the project site as mitigation. In that case, the applicant shall submit, for the review and approval of the Executive Director, a supplemental oak and/or sycamore tree replacement planting program, prepared by a qualified biologist, arborist, or other qualified resource specialist, which specifies replacement tree locations, planting specifications, and a monitoring program to ensure that the replacement planting program is successful. Upon submittal of the replacement planting program, the Executive Director shall determine if an amendment to Permit No. 4-06-118, or an additional coastal development permit, from the Commission is required.

SANTA MONICA BAYKEEPER

December 7, 2007
California Coastal Commission
89 South California Street Suite 200
Ventura, CA 93001

Re: Deny Application No: 4-06-118

Dear Commissioners,

The Santa Monica Baykeeper strongly urges the Commission to **deny** staff's recommendation on ***Permit Application 4-06-118*** to realign 350 linear feet Tuna Canyon Road and place 710 cubic yards of half-ton rip rap and 284 tons of 48-inch boulders in an approximately 7,300 sq. ft. area downslope in Tuna Canyon Creek. As proposed, this project will increase environmental degradation on Tuna Canyon Creek at the project location as well as downstream on public lands. Furthermore, the application and proposal submitted by the Los Angeles County Department of Public Works ignores the causes of the problem – the undersized artificially narrowed stream channel and the solid culvert – which are causing stream channel erosion and bank scour downstream on publicly held property. Further, the County insists on installing rip-rap, an obsolete technology that has proven over and over again not to work, including its failure at this location. Instead, they propose to fix the eroded failed rip-rap bank armoring with new boulder rip-rap armoring. This will simply continue the cycle and create future problems for the downstream riparian ESHA. We therefore urge the Commission to deny this application and require the County to address the problems (narrowed stream channel and culvert) causing the stream bank instability and contributing to environmental and water quality degradation in Tuna Canyon Creek.

Sections 30230 and 30231 of the Coastal Act require that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, **restored** through among other means, minimizing adverse effects of waste water discharge and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas must be protected against disruption of habitat values.

Background: Considerable time and resources have been spent documenting in-stream habitat and specifically the impacts associated with stream armoring throughout the Santa Monica Mountains. Detailed surveys and mapping on more than 70 linear miles of streams in the Malibu Creek Watershed was completed in 2005 by Heal the Bay. Of the 70 miles mapped, 20.9 miles or 30.3% of all mapped streams had armoring or hardened stream banks. The majority of these hardened stream banks were in some state of disrepair and had either failed or were in the process of failing. Of the 987 bank armoring projects that were documented and surveyed, 62% had failed or were in such disrepair they were considered failing. Notably, rip-rap failed at an alarming rate of more than 60%.

The County currently operates and maintains numerous undersized hard bottom culverts and roads that are too near stream channels throughout the Santa Monica Mountains, all of which are suffering a similar fate. These structures and hardened streambanks cause stream channel and stream bank erosion which contribute to instream sediment loading. Every time one of the rip-rap or other type of armored stream banks are eroded by the stream, the County proposes to replace the problem area using the same structure and materials that just failed. While other alternatives may initially be more expensive to construct, they will provide a long term solution. Current approaches, i.e., rip rap and other armoring are serial failures that accomplish neither goal of keeping roads safe and passable or meet the intentions of the Coastal Act (Sections 30230 and 30231) We urge the Commission to require the County to find a solution that will benefit the environment and the long term stability and access of roads in the Santa Monica Mountains.

P.O. Box 10096 · Marina del Rey · CA · 90295 | 310·305·9645 | Fax 310·305·7985 | ww

EXHIBIT NO. 1
APPLICATION NO.
4-06-118 addendum
Correspondence

SANTA MONICA BAYKEEPER

Recommendations: Santa Monica Baykeeper strongly recommends that the County address the **actual source** of the problem – a stream channel that has been undersized to accommodate the road with a solid bottom culvert-- both of which have been causing stream channel and bank erosion since they were installed. These structures should be replaced with an elevated roadway that affords Tuna Creek the ability to recapture some floodplain and dissipate the erosive forces of large storm events. The current bank instability then should be addressed after the cause of the problem (narrowed stream channel) is corrected. At that time we strongly recommend a bioengineering solution which incorporates **no stream bank armoring including "buried rip rap."** This will prevent further problems in the future.

Approaching the problem in this matter is sustainable, environmentally responsible, and fiscally responsible over the long term. Additionally, the recommended actions will permanently address streambank and channel erosion, a significant sediment source in the Santa Monica Mountains, and help attain and maintain water quality objectives, as required by the Clean Water Act. Use of an elevated road bed is a long term real solution to this problem which impacts numerous streams in the Santa Monica Mountains. In fact, at a meeting was recently held by Cal-Trans and various stakeholders in the Topanga Creek watershed regarding a failing rip-rap section of Topanga Creek known as the Topanga Narrows. Cal-Trans is actively designing a project that will replace the rip-rap with retaining walls and elevated roadbeds along the 2700 linear foot section of Topanga Canyon Road and Creek. **The proposed Tuna Canyon project is only 350 linear feet.** It makes sense for the County to follow the State's lead on this and to create a long term solution to this problem. It also makes sense to address this problem at its source now, rather than to go back and address it later the next time these streambanks fail..

Conclusion: The currently proposed road realignment and hardened streambanks will (1) do nothing to correct the true cause of the bank instability that is forcing this project; (2) decrease riparian ESHA habitat; and (3) increase bank instability downstream on publicly held land. Morever, the increased stream bank erosion will further degrade water quality and contribute more sediment load to an already overburdened watershed. In addition, this is only one of numerous roads owned and maintained by the County that present the same issues. We further urge the County and the Coastal Commission to address the actual cause of the problem, as discussed above, and to develop a sustainable, as well as an environmentally and fiscally responsible strategy for addressing these issues. As proposed, Santa Monica Baykeeper believes that this project is ill-conceived and ill-advised. We therefore urge the Commission to deny this permit application.

We appreciate the opportunity to comment on this permit request.

Sincerely,

Mark Abramson
Director of Watershed Programs
Santa Monica Baykeeper

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

W 9b

Filed:	6/26/07
180th Day:	12/23/07
Staff:	D. Christensen
Staff Report:	11/20/07
Hearing Date:	12/12/07

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-06-118

APPLICANT: Los Angeles County Department of Public Works

PROJECT LOCATION: Tuna Canyon Road at Mile Markers 4.97, 4.98, and 5.04, Santa Monica Mountains, Los Angeles County

PROJECT DESCRIPTION: Reconstruction of approximately 350 lineal feet of Tuna Canyon Road to a new alignment approximately 15 feet southwest of its current alignment in order to repair the roadway damaged by landslide failure. The proposed project involves 18,810 cu. yds. grading (18,700 cu. yds. cut, 110 cu. yds. fill) to realign road, bench and re-grade embankment slopes, installation of a terrace drain system with new drain pipes on the upslope side of the realigned road segment, placement of approximately 710 cu. yds. of rip rap and 284 tons of boulders with willow stakes in an approximately 7,300 sq. ft. area of Tuna Canyon Creek, and re-vegetation of the riparian area located at Tuna Canyon Road Mile Markers 4.97, 4.98, and 5.04, Santa Monica Mountains, Los Angeles County.

LOCAL APPROVALS RECEIVED: N/A

SUBSTANTIVE FILE DOCUMENTS: Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification, dated August 23, 2007; Biological Reconnaissance Survey prepared by URS Corp., dated August 22, 2005; LACDPW Geotechnical Engineering Analysis, dated 9/13/07; LACDPW Slope Stability Analysis, dated 9/25/07; LACDPW Geotechnical Recommendations, dated 11/2/05; California Department of Fish & Game Streambed Alteration Agreement Application No.1600-2007-0083-R5 letter dated June 12, 2007; U.S. Army Corps of Engineers letter regarding required certifications and special conditions, dated March 27, 2007; Los Angeles County Oak Tree Permit Waiver, approved October 1, 2007.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends **approval** of the proposed development with six (6) special conditions regarding riparian habitat mitigation and restoration, chaparral habitat mitigation and restoration, project responsibilities and timing, assumption of risk, oak tree mitigation and monitoring, and nesting bird protection measures. The standard of review for the proposed project is the Chapter Three policies of the Coastal Act. In addition, the policies of the certified Malibu – Santa Monica Mountains Land Use Plan (LUP) serve as guidance.

STAFF NOTE: DUE TO PERMIT STREAMLINING ACT REQUIREMENTS, THE COMMISSION MUST ACT ON THIS PERMIT APPLICATION AT THE DECEMBER 2007 COMMISSION HEARING.

I. STAFF RECOMMENDATION

MOTION: ***I move that the Commission approve Coastal Development Permit No. 4-06-118 pursuant to the staff recommendation.***

Staff Recommendation of Approval:

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

Resolution to Approve the Permit:

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

II. STANDARD CONDITIONS

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

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

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

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

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

III. SPECIAL CONDITIONS

1. Riparian Habitat Mitigation and Restoration Plan

Prior to issuance of the Coastal Development Permit, the applicant shall submit, for the review and approval of the Executive Director, a detailed Riparian Habitat Mitigation and Restoration Plan, prepared by a biologist or environmental resource specialist with qualifications acceptable to the Executive Director, for all areas of the project site either temporarily disturbed by grading and construction activities or permanently displaced due to the installation of the rip rap. Within 60 days of completion of the project approved pursuant to this permit, the applicant shall commence implementation of the approved riparian habitat restoration and mitigation plan. The Executive Director may grant additional time for good cause. The plans shall identify the species, extent, and location of all plant materials to be removed or planted and shall incorporate the following criteria:

a. Technical Specifications

The Restoration Plan shall provide for the following:

1) Restoration of disturbed riparian habitat (at a ratio of 3:1 or greater) as mitigation for all areas permanently displaced by the proposed development (the approximately 7,000 sq. ft. area where rip rap will be installed). The mitigation shall be implemented in a suitable location off-site, subject to the review and approval of the Executive Director, that is restricted in perpetuity from development or is public parkland. The mitigation area shall be delineated on a site plan and shall be located within the coastal zone of the Santa Monica Mountains and within the same watershed as the project site. All invasive and non-native plant species shall be removed from the mitigation area. The restoration plan for off-site mitigation may be prepared and implemented in consultation with the Mountains Restoration Trust (MRT).

2) Revegetation of all areas where riparian vegetation have been temporarily disturbed or removed due to construction activities using native plant species that are appropriate for a riparian habitat area. All invasive and non-native plant species shall be removed from the stream channel/riparian vegetation corridor within the revegetation area.

3) Planting of the ungrouted rip rap slopes with willow stakes.

The plan shall include detailed documentation of conditions prior to the approved construction activity (including photographs taken from pre-designated sites annotated to a copy of the site plans) and specify restoration goals and specific performance standards to judge the success of the restoration effort.

The plan shall also provide information on removal methods for exotic species, salvage of existing vegetation, revegetation methods and vegetation maintenance. The plan shall further include details regarding the types, sizes, and location of plants to be placed within the mitigation and revegetation areas. Only native plant species appropriate for a riparian/oak woodland and which are endemic to the Santa Monica Mountains shall be used, as listed by the California Native Plant Society - Santa Monica Mountains Chapter in their document entitled Recommended List of Plants for Landscaping in the Santa Monica Mountains dated February 5, 1996. All plant species shall be of local genetic stock. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be employed or allowed to naturalize or persist on the site. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized or maintained within the property. Successful site restoration shall be determined if the revegetation of native plant species on site is adequate to provide 90% coverage by the end of the five (5) year monitoring period and is able to survive without additional outside inputs, such as supplemental irrigation. The plan shall also include a detailed description of the process, materials, and methods to be used to meet the approved goals and performance standards and specify the preferable time of year to carry out restoration activities and describe the interim supplemental watering requirements that will be necessary.

b. Monitoring Program

A monitoring program shall be implemented to monitor the riparian habitat restoration/revegetation for compliance with the specified guidelines and performance standards. The applicant shall submit, upon completion of the initial planting, a written report prepared by a qualified resource specialist, for the review and approval of the Executive Director, documenting the completion of the initial planting/revegetation work. This report shall also include photographs taken from pre-designated sites (annotated to a copy of the site plans) documenting the completion of the initial planting/revegetation work.

Five years from the date of issuance of this coastal development permit, the applicant shall submit for the review and approval of the Executive Director, a Riparian Habitat Restoration Monitoring Report, prepared by a qualified biologist or Resource Specialist, that certifies the off-site restoration/mitigation and on-site revegetation is in conformance with the restoration plan approved pursuant to this Special Condition. The monitoring report shall include photographic documentation of plant species and plant coverage.

If the monitoring report indicates the vegetation and restoration is not in conformance with or has failed to meet the performance standards specified in the restoration plan approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental restoration plan for the review and approval of the Executive Director. The revised restoration plan must be prepared by a qualified biologist or Resource Specialist and shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

2. Chaparral Habitat Mitigation and Restoration Plan

Prior to issuance of the Coastal Development Permit, the applicant shall submit, for the review and approval of the Executive Director, a detailed Chaparral Habitat Mitigation and Restoration Plan, prepared by a biologist or environmental resource specialist with qualifications acceptable to the Executive Director, for all areas of the project site temporarily disturbed by grading and construction activities and/or permanently displaced due to the installation of the terrace drain system. Within 60 days of completion of the project approved pursuant to this permit, the applicant shall commence implementation of the approved Chaparral Habitat Mitigation and Restoration Plan. The Executive Director may grant additional time for good cause. The plans shall identify the species, extent, and location of all plant materials to be removed or planted and shall incorporate the following criteria:

a. Technical Specifications

The Restoration Plan shall provide for both of the following:

1) Revegetation for all areas of the project site temporarily disturbed by grading and construction activities.
2) Restoration of disturbed chaparral habitat (at a ratio of 3:1 or greater) as mitigation for all areas (approximately one acre) permanently displaced due to the realigned road and installation of the terrace drain system. The restoration shall be implemented in a suitable location off-site, subject to the review and approval of the Executive Director, that is restricted in perpetuity from development or is public parkland. The restoration area shall be delineated on a site plan and shall be located in the same watershed as the project site within the coastal zone of the Santa Monica Mountains. All invasive and non-native plant species shall be removed from the mitigation area. The restoration plan for off-site mitigation may be prepared and implemented in consultation with the MRT.

The plan shall include detailed documentation of conditions on site prior to the approved construction activity (including photographs taken from pre-designated sites annotated to a copy of the site plans) and specify restoration goals and specific performance standards to judge the success of the restoration effort.

The plan shall also provide information on removal methods for exotic species, salvage of existing vegetation, revegetation methods and vegetation maintenance. The plan

shall further include details regarding the types, sizes, and location of plants to be placed within the mitigation and revegetation areas. Only native plant species appropriate for a chaparral habitat and which are endemic to the Santa Monica Mountains shall be used, as listed by the California Native Plant Society - Santa Monica Mountains Chapter in their document entitled Recommended List of Native Plants for Landscaping in the Santa Monica Mountains, dated February 5, 1996. All native plant species shall be of local genetic stock. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be employed or allowed to naturalize or persist on the site. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized or maintained within the property. Site restoration shall be deemed successful if the revegetation of native plant species on site is adequate to provide 90% coverage by the end of the five (5) year monitoring period and is able to survive without additional outside inputs, such as supplemental irrigation. The plan shall also include a detailed description of the process, materials, and methods to be used to meet the approved goals and performance standards and specify the preferable time of year to carry out restoration activities and describe the interim supplemental watering requirements that will be necessary.

b. Monitoring Program

A monitoring program shall be implemented to monitor the chaparral habitat restoration/revegetation for compliance with the specified guidelines and performance standards. The applicant shall submit, upon completion of the initial planting, a written report prepared by a qualified resource specialist, for the review and approval of the Executive Director, documenting the completion of the initial planting/revegetation work. This report shall also include photographs taken from pre-designated sites (annotated to a copy of the site plans) documenting the completion of the initial planting/revegetation work.

Five years from the date of issuance of this coastal development permit, the applicant shall submit for the review and approval of the Executive Director, a Chaparral Habitat Restoration Monitoring Report, prepared by a qualified biologist or Resource Specialist, that certifies whether the restoration/mitigation and revegetation is in conformance with the restoration plan approved pursuant to this Special Condition. The monitoring report shall include photographic documentation of plant species and plant coverage.

If the monitoring report indicates the vegetation and restoration is not in conformance with or has failed to meet the performance standards specified in the restoration plan approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental restoration plan for the review and approval of the Executive Director and shall implement the approved version of the plan. The revised restoration plan must be prepared by a qualified biologist or Resource Specialist and shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

3. Project Responsibilities and Timing

The permittee shall comply with the following work-related requirements:

(a) Excavation and grading shall take place only during the dry season (April 1 – October 31). This period may be extended for a limited period of time if the situation warrants such a limited extension, if approved by the Executive Director.

(b) Prior to commencement of any work approved by this permit, the work area shall be flagged to identify limits of construction and identify natural areas off limits to construction traffic. All temporary flagging, staking, and fencing shall be removed upon completion of the project.

(c) No construction materials, debris, or waste shall be placed or stored where it may be subject to erosion and dispersion or encroach into a habitat area or drainage.

(d) Construction materials, chemicals, debris, and sediment shall be properly contained and secured on-site to prevent the unintended transport of material, chemicals, debris, and sediment into habitat areas and coastal waters by wind, rain, or tracking. Best Management Practices and Good Housekeeping Practices, designed to prevent spillage and/or runoff of construction-related materials and to contain sediment and contaminants associated with the construction activity, shall be implemented prior to the on-set of such activity. All proposed BMPs, as well as those required by DFG, RWQCB, and USACE, shall be implemented and shall be maintained in a functional condition throughout the duration of the project.

(e) Debris and excavated material shall be appropriately disposed at a legal disposal site. If the disposal site is located in the coastal zone, a coastal development permit or an amendment to this permit, shall be required before disposal can take place unless the Executive Director determines that no amendment or new permit is required.

(f) Debris and excavated material shall be removed from the project area as necessary to prevent the accumulation of sediment and other debris which may be discharged into habitat areas and coastal waters.

(g) Any and all debris resulting from construction activities shall be removed from the project site within 7 days of completion of construction.

4. Assumption of Risk, Waiver of Liability and Indemnity Agreement

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

respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement.

5. Oak Tree Mitigation and Monitoring

Prior to issuance of the Coastal Development Permit, the applicant shall submit, for the review and approval of the Executive Director, an off-site oak tree replacement planting program, which specifies replacement tree locations, tree or seedling size planting specifications, and a ten-year monitoring program with specific performance standards to ensure that the replacement planting program is successful. The applicant may coordinate with the Mountains Restoration Trust to prepare and implement the off-site oak tree replacement planting program. At least one hundred and ten (110) replacement seedlings, less than one year old, grown from acorns collected in the selected planting area, shall be planted as mitigation for impacts to eleven (11) oak trees as a result of the proposed project. All replacement seedlings must be planted in a suitable location off-site that is restricted in perpetuity from development or is public parkland. An appropriate off-site planting area may be identified in collaboration with the Mountains Restoration Trust (MRT), and shall be located in the Tuna Canyon watershed within the coastal zone of the Santa Monica Mountains. The applicant shall commence implementation of the approved off-site oak tree replacement planting program concurrently with the commencement of construction on the project site. An annual monitoring report on the oak tree replacement area shall be submitted for the review and approval of the Executive Director for each of the 10 years. If monitoring indicates the oak trees are not in conformance with or has failed to meet the performance standards specified in the monitoring program approved pursuant to this permit, the applicant, or successors in interest, shall submit a revised or supplemental planting plan for the review and approval of the Executive Director. The revised planting plan shall specify measures to remediate those portions of the original plan that have failed or are not in conformance with the original approved plan.

6. Nesting Bird Protection Measures

A qualified biologist, with experience in conducting bird surveys, shall conduct bird surveys 30 days prior to construction to detect any active bird nests in the vegetation to be removed and any other such habitat within 200 feet of the construction area. The last survey should be conducted 3 days prior to the initiation of clearance/construction. If an active nest is located, clearing/construction within 200 feet shall be postponed until the nest(s) is vacated and juveniles have fledged and there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area. The project biologist shall record the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to protection of nesting birds.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description and Background

The proposed project is located along Tuna Canyon Road at Mile Markers 4.97, 4.98, and 5.04 within Tuna Canyon in the western Santa Monica Mountains, approximately ¾ of a mile inland from the coast (**Exhibits 1-2**). The proposed project is situated within public parkland (Tuna Canyon Park) owned by the Mountains Restoration Trust (**Exhibit 9**). The Mountains Restoration Trust has granted Los Angeles County an easement for road and drainage purposes and authorized the County to complete that portion of the proposed project that is located on the property outside of the public road right-of-way. Tuna Canyon Park is 1,255-acres in size and links over 18,000 acres of contiguous protected open space from Topanga State Park west to Las Flores Canyon. Tuna Canyon Creek, a significant blue line stream, is located at the base of Tuna Canyon Road in this area. Tuna Canyon Creek and its associated riparian corridor are designated as an Environmentally Sensitive Habitat Area (ESHA) in the Malibu/Santa Monica Mountains Land Use Plan (LUP). The LUP also designates the vicinity of the proposed project as within the Tuna Canyon Significant Watershed area (**Exhibit 8**).

The applicant proposes to realign a 350-ft. section of Tuna Canyon Road 15 feet southwest (into the hillside) of its current alignment. The road embankment failed along this section of Tuna Canyon Road after the winter 2005 storm season. Much of the hillside below the road eroded down to Tuna Canyon Creek and resulted in a damaged road and an extremely steep and damaged embankment. The proposed road realignment will improve the stability of the roadway by moving the road further away from the near vertical descending slope. The road realignment will require 18,810 cu. yds. of grading (18,700 cu. yds. cut, 110 cu. yds. fill, and 18,590 cu. yds. export) to realign the road and bench/re-grade the embankment to a 1.5:1 gradient (**Exhibits 3-7**).

Tuna Canyon Creek is located at the base of the road embankment. In order to stabilize the slope and help support the realigned roadway, the applicant proposes to place approximately 710 cu. yds. of half-ton rip rap and 284 tons of 48-inch boulders in an approximately 7,300 sq. ft. area of the downslope Tuna Canyon Creek. Soil and willow stakes will be planted in the interstitial areas within the rock rip rap. The applicant also proposes to re-vegetate the riparian areas of Tuna Canyon Creek that will not be covered in rock but have been destroyed by the landslide or will be disturbed by construction. Geotextile fabric and native seed mix will be placed along the upper slopes for erosion control. The steep slope above the realigned road segment will also be benched, re-graded, and a terrace drain system installed. The proposed roadway realignment will require two existing corrugated metal pipe culverts that convey runoff beneath the damaged road segment in this area to be replaced by two new reinforced concrete pipes.

According to the applicant's submitted biological reconnaissance survey conducted in July 2005 by URS Corporation, the project site contains native chaparral and oak-

sycamore woodland vegetation. It is estimated that just over one acre (46,000 sq. ft.) of native mixed chaparral vegetation on the upland slope and 0.22-acres (9,600 sq. ft.) of riparian vegetation along Tuna Canyon Creek will be disturbed by the proposed project. In addition, the proposed project will require the removal of eleven (11) Coast Live oak trees that are at least 6 inches in diameter four and a half feet above ground (**Exhibit 4**). The applicant proposes to restore the riparian corridor in place (1:1 mitigation ratio) and implement Best Management Practices (BMPs) for erosion, pollution, and sediment control to avoid adverse impacts to the stream channel.

The Regional Water Quality Control Board has issued a Clean Water Act Section 401 Water Quality Certification for the proposed project, dated August 23, 2007. The certification contains various conditions, which include the following:

- Mitigation, at a 1:1 ratio, for temporary impacts to 0.22 acres of vegetated streambed.
- Revegetation with native species.
- Submission of annual mitigation monitoring reports each year for a period of five years after planting.
- All open space and mitigation areas shall be placed within a conservation easement to ensure preservation in perpetuity.
- Implementation of all necessary control measures and best management practices to prevent degradation of water quality from the proposed project.

The project requires a Section 404 permit from the United States Army Corps of Engineers (USACE), which may not be issued until after Commission approval of a CDP. In addition, the project requires a Streambed Alteration Agreement from the California Department Fish & Game (DFG). However, in a letter dated June 12, 2007, DFG notified the applicant to complete the project without a Streambed Alteration Agreement because DFG was unable to provide the applicant with a draft agreement before their statutory deadline.

Coastal Permit Required for Repair and Maintenance within ESHA

The proposed work is designed to repair a damaged public roadway. The project constitutes repair and maintenance work. The Commission has expressly recognized, since 1978, certain types of repair and maintenance work related to roads as exempt from permit requirements pursuant to Section 13252 of the Commission's regulations and Section 30610(d) of the Public Resource Code. See California Public Resources Code ("PRC") Section 30610(d) and the "Repair, Maintenance and Utility Hook-Up Exclusions From Permit Requirements" (adopted by the Commission on Sept. 5, 1978) (hereafter, "R&M Exclusions") Appendix I, § 3 (referring to "installation of slope protection devices, minor drainage facilities"). However, the exemptions provided by the above referenced sections and the R&M Exclusions are limited. Accordingly, California Code of Regulations, Title 14 ("14 CCR"), Section 13252 (a) lists extraordinary methods of repair and maintenance that do still require a permit. Among those methods is any repair or maintenance "located in an environmentally sensitive habitat area." 14 CCR

§ 13252(a)(3). Since this project would occur within such an area, the method by which this project is conducted is not exempt, and a permit is required. In addition, further review of the R&M Exclusions Guidelines confirms that this proposed repair and maintenance is not exempt from permit requirements based on that document because the proposed development is located outside the "roadway prism" or the roadway property or easement.

Similarly, 14 CCR Section 13252(a) states that "activities specifically described in the [R&M Exclusions guidance document that] that will have a risk of substantial adverse impact on . . . environmentally sensitive habitat area" are not exempt based on that document and may require a coastal development permit, pursuant to the normal application of section 13252. Thus, in this case, although the project is a repair and maintenance project, since the work is to be performed within an ESHA, Section 13252(a)'s limits on the repair and maintenance exemption do apply, and this project does require a permit to ensure that the method employed is as consistent as possible with the Chapter 3 policies of the Coastal Act. Moreover, this project involves excavation, and the R&M Exclusions guidance document expressly states that a permit is required "for excavation . . . outside of the roadway prism" Id. at § II.A., page 2. Therefore, a coastal development permit is required for this project.

B. Environmentally Sensitive Habitat and Water Quality

Section 30230 of the Coastal Act states that:

> ***Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.***

Section 30231 states:

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

Section 30240 states:

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

> ***significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.***

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

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

Sections 30230 and 30231 of the Coastal Act require that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through among other means, minimizing adverse effects of waste water discharge and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. In addition, Section 30240 of the Coastal Act states that environmentally sensitive habitat areas must be protected against disruption of habitat values.

The proposed project is located along Tuna Canyon Road at Mile Markers 4.97, 4.98, and 5.04 within Tuna Canyon in the western Santa Monica Mountains, approximately ¾ of a mile inland from the coast. The applicant proposes to realign a 350-ft. section of Tuna Canyon Road 15 feet southwest (into the hillside) of its current alignment. The road embankment failed along this section of Tuna Canyon Road after the winter 2005 storm season. Much of the hillside below the road eroded down to Tuna Canyon Creek and resulted in a damaged road and an extremely steep and damaged embankment. The proposed road realignment will improve the stability of the roadway by moving the road further away from the near vertical descending slope. Tuna Canyon Creek, a significant blue line stream, is located at the base of Tuna Canyon Road in this area. Tuna Canyon Creek and its associated riparian corridor are designated as an Environmentally Sensitive Habitat Area (ESHA) in the Malibu/Santa Monica Mountains Land Use Plan (LUP). The LUP also designates the vicinity of the proposed project as within the Tuna Canyon Significant Watershed area.

In order to stabilize the slope and help support the realigned roadway, the applicant proposes to place approximately 710 cu. yds. of half-ton rip rap and 284 tons of 48-inch boulders in an approximately 7,300 sq. ft. area of the downslope Tuna Canyon Creek. Soil and willow stakes will be planted in the interstitial areas within the rock rip rap. The applicant also proposes to re-vegetate the riparian areas of Tuna Canyon Creek that will not be covered in rock but have been destroyed by the landslide or will be disturbed by construction. Geotextile fabric and native seed mix will be placed along the upper slopes for erosion control. The steep slope above the realigned road segment will also be benched, re-graded, and a terrace drain system installed. According to the applicant's submitted biological reconnaissance survey conducted in July 2005 by URS Corporation, the project site contains mixed chaparral and oak-sycamore woodland vegetation. It is estimated that just over one acre (46,000 sq. ft.) of native mixed chaparral vegetation on the upland slope and 0.22-acres (9,600 sq. ft.) of riparian

vegetation along Tuna Canyon Creek will be disturbed by the proposed project. The applicant proposes to restore the riparian corridor in place (1:1 mitigation ratio). In addition, the proposed project will require the removal of eleven (11) Coast Live oak trees that are at least 6 inches in diameter four and a half feet above ground.

1. 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 undisturbed[1]. 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 2000[2]. Therefore, this relatively pristine area is both large and mostly unfragmented, which fulfills a fundamental tenet of conservation biology[3]. The need for large contiguous areas of natural habitat in order to maintain critical ecological processes has been emphasized by many conservation biologists[4].

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

---

[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.

ecosystems[5]. 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 Agency[6] 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 conclusions of that report[7]. 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 important[8].

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 deer[9]. Large terrestrial predators are particularly good indicators of habitat connectivity and of the general health of the ecosystem[10]. 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 bobcat[11]. Sightings of cougars in both inland and coastal areas of the Santa Monica Mountains[12] 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

---

[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

[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. Conerv. 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.

stable and have less frequent extinctions than habitats without extended spatial structure[13]. Beyond simply destabilizing the ecosystem, fragmentation and disturbance 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 outlets[15]. 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 types[16] 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

---

[13] Gause, G. F. 1934. The struggle for existence. Balitmore, 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.

[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.

have designated the area to be a local hot-spot of endangerment in need of special protection[17].

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, 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.

2. 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 review[18]. 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 Holland[19]. 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 Mountains[20] are: coastal sage scrub, chaparral, riparian woodland, coast live oak woodland, and grasslands.

---

[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.

[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.)

a. 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.[21] 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 process[22]. 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."[23] Several other researchers have noted the replacement of chaparral by coastal sage scrub, or coastal sage scrub by chaparral depending on fire history.[24] In transitional and other settings, the mosaic of chaparral and coastal sage scrub enriches the seasonal plant resource base and provides additional habitat variability and seasonality for the many species that inhabit the area.

b. 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

[21] Cooper, W.S. 1922. The broad-sclerophyll vegetation of California. Carnegie Institution of Washington Publication 319. 124 pp.
[22] 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).
[23] Hanes, T.L. 1965. Ecological studies on two closely related chaparral shrubs in southern California. Ecological Monographs 41:27-52.
[24] 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.

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 saturated[25]. New growth of chaparral evergreen shrubs takes place about four months later than coastal sage scrub plants and it continues later into the summer[26]. For example, in coastal sage scrub, California sagebrush flowers and grows from August to February and coyote bush flowers from August to November[27]. 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 spring[28]. The insects in turn are followed by insectivorous birds such as the blue-gray gnatcatcher[29], 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 the Santa Monica Mountains[30]. Five species of hummingbirds also follow the flowering cycle[31].

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

---

[25] 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.

[26] Schoenherr, A. A. 1992. A natural history of California. University of California Press, Berkeley. 772p.

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

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

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

[30] 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.

[31] 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

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 type[32].

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 students[33]."

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 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 lakes[34].

When the community mosaic is disrupted and fragmented by development, many chaparral-associated native bird species are impacted. In a study of landscape-level

---

[32] 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.

[33] 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.

[34] 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.

fragmentation in the Santa Monica Mountains, Stralberg[35] 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. Soule[36] 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.

c. 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 (tens of feet) 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 plants[37]. 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 chaparral[38]. 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 sugarbush[39]. The rare red shank chaparral plant community also occurs in the Santa Monica Mountains. Although included within the category "northern mixed chaparral" in 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

---

[35] 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.
[36] 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.
[37] Dr. Stephen Davis, Pepperdine University. Presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.
[38] 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.
[39] Ibid.

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 bush[40].

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 checkerbloom[41]. 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.[42]

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 specialist[43]. 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

---

[40] Ibid.
[41] 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.
[42] Ibid.
[43] 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 below[44], so chaparral literally holds the hillsides together and prevents slippage.[45] 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 time[46]. Thus, the erosion from a 2-inch rain-day event drops from 5 yd^3/acre of soil one year after a fire to 1 yd^3/acre after 4 years.[47]

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.

d. Riparian Woodland

Riparian woodlands occur along both perennial and intermittent streams and drainages 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 area. Riparian communities are the most species-rich to be found in the Santa Monica Mountains. As a result 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 lifecycles[48]. 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 or drainage channels 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

---

[44] 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.

[45] 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.

[46] 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.

[47] Ibid.

[48] 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.

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 listing[49], 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 work[50] has found that although the Pacific pond turtle spends the wet season in streams, it also requires upland habitat for refuge during the dry season. Thus, in coastal southern California, the Pacific pond turtle requires both streams and intact adjacent upland habitats such as coastal sage scrub, woodlands or chaparral as part of their normal life cycle. The turtles spend about four months of the year in upland refuge sites located an average distance of 50 m (but up to 280 m) from the edge of the creek bed. Similarly, nesting sites where the females lay eggs are also located in upland habitats an average of 30 m (but up to 170 m) from the creek. Occasionally, these turtles move up to 2 miles across upland habitat[51]. 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 streambed[52]. 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 lost[53].

---

[49] 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.

[50] 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*).

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

[52] Dr, Lee Kats, Pepperdine University, personal communication to Dr J. Allen, CCC.

[53] 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.

Writing at the same time as Faber, Bowler asserted that, *"[t]here is no question that riparian habitat in southern California is endangered."*[54] 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 disturbances[55]. Human-caused increased fire frequency has resulted in increased sedimentation rates, which exacerbates the cannibalistic predation of adult newts on the larval stages.[56] 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 crayfish[57]. These introduced predators have eliminated the newts from streams where they previously occurred by both direct predation and suppression of breeding.

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.

3. Oak Trees

In addition to the riparian and chaparral habitats on the project site, there are also oak trees. These oaks are interspersed with chaparral on the subject site. Even when oak trees do not form a woodland, as on the project site, the Commission has considered the individual trees to be a significant resource deserving of protection. In this case, the trees are located within the chaparral ESHA. Native trees prevent the erosion of hillsides and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife. Native trees that are not part of a larger, intact woodland or are interspersed with another habitat type nonetheless provide nesting or roosting habitat for raptors and other birds that are rare, threatened, endangered, fully protected, or species of special concern. Furthermore, individual oak trees such as those on the subject site do provide

---

[54] 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.

[55] 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.

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

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

habitat for a wide variety of wildlife species and are considered to be an important part of the character and scenic quality of the area.

According to Oaks of California, "Coast live oak is unique among the California oaks in its ability to thrive along the coast…Proximity to the ocean provides a milder climate for coast live oak, with warmer winters (seldom encountering frost or snow) and less sweltering summers than found inland. Fog is common, providing additional relief from heat and drought…Inland, it can be found at elevations up to 5,000 feet with groves that spread across valleys, on steep hillsides, in rocky canyons, and along streams and intermittent watercourses" (Pavlik, Muick, Johnson, and Popper, 1991). The coast live oak is a large, evergreen tree with a dense, round crown and large limbs. Its trunk divides into either erect limbs or, more commonly, into crooked, wide-spreading limbs that sometimes touch or trail the ground. They can grow to 30 to 70 feet high and 35 to 80 feet wide.

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

Oak trees are a part of the California native plant community and need special attention to maintain and protect their health. Oak trees in developed areas often suffer decline and early death due to conditions that are preventable. Damage can often take years to become evident and by the time the tree shows obvious signs of disease it is usually too late to restore the health of the tree. Oak trees provide important habitat and shading for other animal species, such as deer and bees. Oak trees are very long lived, some up to 250 years old, relatively slow growing, becoming large trees between 30 to 70 feet high, and are sensitive to surrounding land uses, grading or excavation at or near the roots and irrigation of the root area particularly during the summer dormancy. Improper watering, especially during the hot summer months when the tree is dormant and disturbance to root areas are the most common causes of tree loss.

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

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

This publication goes on to state:

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

Application of the Section 30240 ESHA Protection Policy

Tuna Canyon Creek, a significant blue line stream, and its associated riparian corridor are designated as an Environmentally Sensitive Habitat Area (ESHA) in the Malibu/Santa Monica Mountains Land Use Plan (LUP). The subject reach of Tuna Canyon Creek enters the project site through a culvert beneath a bend in Tuna Canyon Road. The stream is then flanked on either side by the embankments of the roadway. Nonetheless, there is still an intact riparian woodland along this reach of the stream. The LUP also designates the vicinity of the proposed project as within the Tuna Canyon Significant Watershed area. The proposed project is also situated among a large contiguous area of relatively undisturbed open space that is part of Tuna Canyon Park (public parkland that links over 18,000 acres of contiguous protected open space from Topanga State Park west to Las Flores Canyon). According to the applicant's submitted biological reconnaissance survey conducted in July 2005 by URS Corporation, the project site contains native chaparral and oak-sycamore woodland vegetation. Staff has consulted aerial photographs of the surrounding area and has confirmed that the project site is part of a large, contiguous area of undisturbed natural habitat. Based on all of this information, the Commission finds that the habitat on the project site meets the definition of ESHA, pursuant to Section 30107.5 of the Coastal Act. The only exceptions to this determination are the roadway itself and existing disturbed road shoulder areas that obviously do not support ESHA.

The proposed project involves realigning a 350-ft. section of Tuna Canyon Road 15 feet southwest (into the hillside) of its current alignment. The road embankment failed along this section of Tuna Canyon Road after the winter 2005 storm season. The road realignment will require 18,810 cu. yds. of grading (18,700 cu. yds. cut, 110 cu. yds. fill, and 18,590 cu. yds. export) to realign the road and bench/re-grade the embankment to a 1.5:1 gradient. Tuna Canyon Creek is located at the base of the road embankment. In order to stabilize the slope and help support the realigned roadway, the applicant proposes to place approximately 710 cu. yds. of half-ton rip rap and 284 tons of 48-inch boulders in an approximately 7,300 sq. ft. area of the downslope Tuna Canyon Creek.

Soil and willow stakes will be planted in the interstitial areas of the rip rap. The applicant also proposes to re-vegetate the riparian areas where no rip rap will be placed along the disturbed section of Tuna Canyon Creek. Geotextile fabric and native seed mix will be placed along the upper slopes for erosion control. The steep slope above the realigned road segment will also be benched, re-graded, and a terrace drain system installed. The proposed roadway realignment will require two existing corrugated metal pipe culverts that convey upslope runoff under the damaged roadway in this area to be replaced by two new reinforced concrete pipes (**Exhibits 3-7**).

It is estimated that just over one acre (46,000 sq. ft.) of native mixed chaparral vegetation on the upland slope, and 0.22-acres (9,600 sq. ft.) of riparian vegetation along Tuna Canyon Creek that meets the definition of ESHA under the Coastal Act will be disturbed by the proposed project. In addition, the proposed project will require the removal of eleven (11) Coast Live oak trees that are at least 6 inches in diameter four and a half feet above ground.

As discussed in greater detail above, the Commission finds that chaparral habitat, such as the native vegetation located on the subject site, provide important habitat for wildlife. In past permit actions, the Commission has found that new development within chaparral habitat areas, such as the proposed project, results in potential adverse effects to chaparral habitat and downstream riparian habitat and ultimately marine resources from increased erosion, contaminated storm runoff, disturbance to wildlife, and loss of chaparral plant and animal habitat. In addition, the proposed project is partially located within the active channel of a natural drainage and will also result in significant adverse impacts to riparian woodland habitat. As discussed in greater detail above, the Commission finds that seasonal streams and drainages, such as the drainage located on the subject site provide important habitat for riparian plant and animal species. Section 30231 of the Coastal Act provides that the quality of coastal waters and streams shall be maintained and restored whenever feasible. In past permit actions, the Commission has found that new development within riparian areas, such as the proposed project, results in potential adverse effects to riparian habitat and marine resources from increased erosion, contaminated storm runoff, disturbance to wildlife, and loss of riparian plant and animal habitat. The Coastal Act further requires that environmentally sensitive habitat areas, such as the subject site, be maintained, enhanced, and where feasible, restored.

Coastal Act Section 30240 requires that ESHA be protected against any significant disruption of habitat values, and that only resource dependent uses be allowed within ESHA. Further, Section 30240 requires that development in areas adjacent to environmentally sensitive habitat areas be sited and designed to prevent impacts which would significantly degrade such areas and shall be compatible with the continuance of such habitat areas. In order to protect streams, natural drainages, and riparian ESHA, the Commission has consistently required new development to be designed or located in a manner that will provide a buffer between new development and the outer edge of riparian vegetation (including riparian oak-sycamore woodland areas such as the project site). A buffer provides a transition between development and the habitat, and provides

area for runoff from development to be infiltrated. The Commission has typically required a buffer of at least 100 feet around riparian ESHA for new development. Given that the project addresses a slope failure in a fixed location, the siting of such development to avoid impacts to ESHA is necessarily constrained. In this case, the slope failure itself is located within ESHA. As a result, it is not possible to relocate the proposed development in a manner that would avoid or provide a buffer from the sensitive habitat areas. Therefore, it is essential to consider design options that would reduce impacts to ESHA, consistent with Coastal Act Section 30240.

To assist in the determination of whether a project is consistent with Sections 30230, 30231, and 30240 of the Coastal Act, the Commission has, in past coastal development permit actions for new development in the Santa Monica Mountains, looked to the certified Malibu/Santa Monica Mountains Land Use Plan (LUP) for guidance. The 1986 LUP has been found to be consistent with the Coastal Act and provides specific standards for development within the Santa Monica Mountains. In its findings regarding the certification of the Malibu/Santa Monica Mountains LUP, the Commission emphasized the importance placed by the Coastal Act on protection of sensitive environmental resources finding that:

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

Specifically, Policy 76 of the LUP, in concert with the Coastal Act, limits stream alterations. In addition, Policy 82 of the LUP, in concert with the Coastal Act, provides that grading shall be minimized to ensure that the potential negative effects of runoff and erosion on watershed and streams is minimized. Further, Policies 84 and 94, in concert with the Coastal Act, provide that disturbed areas shall be revegetated with native plant species within environmentally sensitive habitat areas and significant watersheds. In addition, Section 30231 of the Coastal Act specifically provides that the quality of coastal waters and streams shall be maintained and restored whenever feasible.

In this case, the proposed project includes realignment of the road 15 feet to the southwest and further away from the damaged, near vertical embankment, benching/re-grading the road embankment and the steep slope above the realigned road segment, placement of approximately 710 cu. yds. of half-ton rip rap and 284 tons of 48-inch boulders in an approximately 7,300 sq. ft. area of the downslope Tuna Canyon Creek for slope protection, and installation of a terrace drain system on the slope above the realigned road. In the area of the proposed project, Tuna Canyon Creek is flanked on both sides by Tuna Canyon Road. The creek enters the project area through a culvert beneath the switchback bend in Tuna Canyon Road. Due to the narrowness of the channel and steepness of the banks in the area of the road embankment failure, it is not possible to provide a buffer from riparian ESHA in this case.

Pursuant to Section 30236 of the Coastal Act, certain types of channelization projects and other developments resulting in the alterations of rivers and streams may be allowed when necessary for a required flood control project, such as the proposed project, where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development and only if such development incorporates the best mitigation measures feasible. In this case, the proposed project for the placement of rock rip rap within a stream channel constitutes a required flood control project and is necessary in order to stabilize an eroding slope and protect an existing public roadway. Thus, the proposed project is considered an allowable type of development within a stream consistent with the provisions of Section 30236 of the Coastal Act.

The proposed project is designed to repair the existing public road that was previously damaged due to storm activity. The project constitutes necessary repair and maintenance work. As discussed in detail above, although the proposed repair of the existing public roadway and its supporting slopes is generally consistent with the types of repair and maintenance activities that are allowed under Coastal Act and the R&M Guidelines for public projects, in this case, the project is located within ESHA and therefore, a coastal development permit is required.

The County Geotechnical and Materials Engineering Division has submitted an engineering and alternatives analysis for the proposed project, which indicates that the excessive runoff during the January 2005 storm season caused the road and hillside to fail along this section of Tuna Canyon Road. The project site is located within a large ancient landslide, parts of which are active and unstable. The applicant's engineering analysis indicates that to improve the stability of the roadway and prevent further slope failure, the proposed road realignment and slope stabilization work is required.

The analysis indicates that another alternative that was considered was to construct a retaining wall along the entire length of the slope failure road embankment in order to stabilize the existing road configuration. However, the County determined that the geologic site conditions were unsuitable for wall foundations. The landslide is more than 60 feet deep and is composed of highly fractured landslide debris. No competent materials were found in the borings drilled at the site. The proposed project was determined to be the most feasible and effective method to improve the overall stability of the road. The applicant has also determined that the proposed rip rap in the downslope stream, as well as the upslope terrace drain system, are necessary in order to improve the overall stability of the slope supporting this section of Tuna Canyon Road and to maintain the public's ability to use this road for vehicular access. Due to the geologic site conditions, narrowness of the channel, and the steepness of the banks at this location, the Commission finds that there are no other feasible alternatives to the proposed project that would result in less adverse impacts to coastal resources. Further, given that slope protection is needed within the drainage channel itself in order to prevent erosion of the road shoulder and eventually the road itself, it is not possible to redesign or relocate the proposed development in a manner that would provide for a buffer from the sensitive habitat areas on site. In addition, the "no project", or road

closure, alternative is not viable in this case because Tuna Canyon Road is a public roadway that must be maintained for vehicular and emergency access. In addition, this alternative would result in continued slope failure and erosion into Tuna Canyon Creek. Thus, the Commission finds that there are no other feasible alternatives to the proposed project that would avoid or further reduce impacts to sensitive coastal resources.

However, the project would still result in unavoidable adverse impacts to ESHA on site. Thus, in past permit actions, the Commission has found that in order to ensure that new development is consistent with the above referenced resource protection policies of both the Coastal Act and LUP, the riparian habitat area on site that will be disturbed as a result of proposed development should be revegetated and restored. The applicant proposes to plant willow stakes within the rip-rap in the stream. Planting will help to provide shading and thereby reduce the heating impacts to water in the stream from the presence of the rip rap. However, this planting will not restore the habitat values of the stream and riparian ESHA within the rip rap areas. The presence of the rock, even with willow plantings will result in permanent impacts to approximately 7,000 sq. ft. of riparian ESHA. Additionally, the applicant proposes to restore the riparian areas on the upper slopes where rip rap is not proposed. These areas will be disturbed or vegetation will be removed during the construction of the project. With the proposed riparian restoration, the project can be considered to temporarily impact these habitat areas.

In order to ensure that impact to riparian ESHA are mitigated to the maximum extent feasible, the Commission finds that **Special Condition One (1)** is necessary to ensure that adverse effects to riparian habitat and water quality from increased erosion and sedimentation are minimized. Specifically, **Special Condition One (1)** requires that prior to issuance of the permit, the applicant shall submit, for the review and approval of the Executive Director, a detailed Riparian Habitat Restoration Plan and Monitoring Program, prepared by a biologist or environmental resource specialist with qualifications acceptable to the Executive Director, for all areas of the project site either temporarily disturbed by grading and construction activities or permanently displaced due to the installation of the rip rap. Within 60 days of the issuance of this coastal development permit, the applicant shall commence implementation of the approved riparian habitat restoration and mitigation plan. The Executive Director may grant additional time for good cause.

The Restoration Plan required pursuant to **Special Condition One (1)** shall provide for the mitigation for ESHA impacts to riparian habitat permanently displaced by the proposed development (including, but not limited to, the approximately 7,000 sq. ft. area where rip rap has been installed) by restoring disturbed riparian habitat at an off-site location (subject to the review and approval of the Executive Director) at a 3:1 ratio. This 3:1 mitigation cannot be accomplished on the project site because no appropriate disturbed riparian habitat exists on-site. Areas where riparian and native vegetation have been either temporarily disturbed or removed due to construction activities shall be replanted with appropriate riparian or native plant species in the same location appropriate for an oak woodland/riparian area. The restoration area shall be delineated on a site plan and shall be located in the same vicinity of the project site within the

coastal zone of the Santa Monica Mountains. All invasive and non-native plant species shall be removed from the stream channel/riparian vegetation corridor within the Restoration Plan area. The stream channel/riparian vegetation corridor shall be revegetated with native plant species appropriate for both riparian and oak woodland habitat areas. In addition, **Special Condition One (1)** also requires the applicant implement a five year monitoring program to ensure the success of the replanting.

In past permit actions, the Commission has found that in order to ensure that repair work is as consistent as possible with the above referenced resource protection policies of both the Coastal Act and LUP, all chaparral habitat areas on site that will be disturbed as a result of proposed development should be revegetated and restored. Therefore, the Commission finds that **Special Condition Two (2)** is necessary to ensure that adverse effects to the chaparral habitat from increased erosion and sedimentation are minimized. Specifically, **Special Condition Two (2)** requires that, prior to issuance of the permit, the applicant shall submit, for the review and approval of the Executive Director, a detailed Chaparral Habitat Restoration Plan and Monitoring Program, prepared by a biologist or environmental resource specialist with qualifications acceptable to the Executive Director, for all areas of the project site temporarily disturbed by grading and construction activities and/or permanently displaced due to the installation of the terrace drain system. Within 60 days of the issuance of this coastal development permit, the applicant shall commence implementation of the approved Chaparral Habitat Restoration Plan. The Executive Director may grant additional time for good cause.

Special Condition Two (2) requires re-vegetation of all areas of the project site temporarily disturbed by grading and construction activities, and requires restoration of disturbed chaparral habitat (at a ratio of 3:1 or greater) as mitigation for all areas (approximately one acre) permanently displaced due to the realigned road and installation of the terrace drain system. The restoration may be implemented on the project site if appropriate area exists, or alternatively, the restoration may be implemented off-site subject to the review and approval of the Executive Director. The restoration area shall be delineated on a site plan and shall be located in the same vicinity of the project site within the coastal zone of the Santa Monica Mountains. Special Condition 2 further stipulates that all planted materials must be native plant species that are appropriate for chaparral habitat. Additionally, all invasive and non-native plant species shall be removed from the restoration and project area. In addition, Special Condition 2 also requires the applicant implement a five year monitoring program to ensure the success of the replanting.

Further, as discussed above, there are many oak trees on the site, interspersed with chaparral habitat. Given the importance of oak woodlands and individual oak trees, even those that have been disturbed or fragmented by development, the Commission has consistently required, through past permit actions, that new development avoid the removal of oak trees, unless there is no feasible alternative for siting or designing the development. Further, given the sensitivity of oak trees to disturbance or encroachment of development into the root zone, the Commission has required that encroachments

within the protected zone (5 feet beyond the dripline, or 15 feet from the trunk, whichever is greater) be avoided unless there is no feasible alternative for the siting of development. The Commission has determined that in cases where the removal of oak trees is unavoidable, the planting of replacement trees is necessary as mitigation, at a ratio of at least ten seedlings for every tree impacted. If there is suitable area on the project site, replacement trees should be provided on-site. The Commission has found, through permit actions, based on the recommendations of resource specialists studying oak restoration that oak trees are most successfully established when planted as acorns collected in the local area or seedlings grown from such acorns. Many factors, over the life of the restoration, can result in the death of the replacement trees. In order to ensure that adequate replacement is eventually reached, it is necessary to provide a replacement ratio of at least ten replacement trees for every tree removed or impacted to account for the mortality of some of the replacement trees.

In the case of the proposed development, slope stabilization work on the slope above the realigned road segment will require the removal of eleven (11) Coast Live oak trees that are at least 6 inches in diameter four and a half feet above ground. Given the instability and steepness of the slopes in the project area and the location of oak trees, staff has concluded that it is not feasible to site or design development that can avoid the removal of the eleven oak trees on the slope. The Commission agrees with staff's assessment.

In order to mitigate the impacts from the removal of eleven (11) oak trees, a total of one hundred and ten (110) replacement trees must be planted. In order to provide this mitigation, the Commission finds it necessary to require the applicant to plant one hundred and ten replacement trees, as detailed in **Special Condition Six (6)**. **Special Condition Six (6)** requires the applicant to plant at least one hundred and ten (110) replacement seedlings, less than one year old, grown from acorns collected in the selected off-site planting area. Typically, the commission will require such mitigation to be carried out on the project site, if suitable habitat exists therein. Since on-site mitigation is not feasible given the site's constrained topographic and geologic conditions, all replacement seedlings must be planted in a suitable location off-site that is restricted from development or is public parkland. An appropriate off-site mitigation area shall be identified within the Tuna Canyon watershed. **Special Condition Six (6)** also requires the applicant to submit an off-site oak tree replacement planting program, which specifies replacement tree locations, tree or seedling size planting specifications, and a ten-year monitoring program to ensure that the replacement planting program is successful. The applicant may coordinate with the Mountains Restoration Trust to prepare and implement the off-site oak tree replacement planting program. The applicant shall commence implementation of the approved off-site oak tree replacement planting program concurrently with the commencement of construction on the project site.

Finally, the project area is situated within and adjacent to the Tuna Canyon Creek channel that is considered to be ESHA and the potential exists for impacts to the water quality of the creek, particularly from erosion of sediment from the site. The sensitive

habitats found in the stream and downstream of the project site could be adversely impacted by the proposed project through the introduction of excavated materials, chemicals, debris or sediment into the stream. Additionally, petroleum hydrocarbons including oil and grease from vehicles could be introduced to the stream through runoff. The discharge of these pollutants to coastal waters can cause cumulative impacts such as: eutrophication and anoxic conditions resulting in fish kills and diseases and the alteration of aquatic habitat including adverse changes to species composition and size; excess nutrients causing algae blooms and sedimentation increasing turbidity, which both reduce the penetration of sunlight needed by aquatic vegetation which provides food and cover for aquatic species; disruptions to the reproductive cycle of aquatic species; acute and sublethal toxicity in marine organisms leading to adverse changes in reproduction and feeding behavior; and human diseases such as hepatitis and dysentery. These impacts reduce the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes and reduce optimum populations of marine organisms and have adverse impacts on human health.

With the applicant's proposed BMPs and control measures to protect water quality, impacts to Tuna Canyon Creek will be minimized. Therefore, the Commission finds it necessary to require the applicant to implement best management and good housekeeping practices as proposed, as well as those required by DFG, RWQCB, and USACE, as detailed in **Special Condition Three (3)** to further reduce potential impacts. Furthermore, excavated materials that are placed in stockpiles are subject to increased erosion. In order to ensure that excavated material will be limited to the designated temporary stockpile areas and be properly removed and disposed in a timely manner, **Special Condition Three (3)** also requires the applicant to properly contain, secure, and remove all debris and excavated material from the site.

In addition to the impacts discussed above, other impacts to Tuna Canyon Creek and its oak-sycamore woodland habitats can result from the construction phase of the project. Construction activities could disturb bird species if they are nesting within or close to the project site. In order to minimize any construction impacts to nesting birds, the Commission finds it necessary to require the applicant to survey the area within 200 feet of the construction zone to detect the nests of any bird species, 30 days prior to the commencement of construction. If any such nests are found, measures must be taken to avoid impacts. These requirements are set forth in **Special Condition Six (6)**.

The Commission finds that the proposed project, only as conditioned, will serve to maintain the quality of coastal waters to the extent possible and to minimize impacts to environmentally sensitive habitat area, while still allowing the repair project to proceed. It is thus as consistent as feasible with Sections 30230, 30231, and 30240 of the Coastal Act.

C. Hazards and Geologic Stability

Coastal Act Section 30253 states in part:

New development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

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

The Los Angeles County Department of Public Works (LACDPW) is requesting approval to realign a 350-ft. section of Tuna Canyon Road 15 feet southwest (into the hillside) of its current alignment. The road embankment failed along this section of Tuna Canyon Road after the winter 2005 storm season. The road realignment will require 18,810 cu. yds. of grading (18,700 cu. yds. cut, 110 cu. yds. fill, and 18,590 cu. yds. export) to realign the road and bench/re-grade the embankment to a 1.5:1 gradient. Tuna Canyon Creek is located at the base of the road embankment. In order to stabilize the slope and help support the realigned roadway, the applicant proposes to place approximately 710 cu. yds. of half-ton rip rap and 284 tons of 48-inch boulders in an approximately 7,300 sq. ft. area of the downslope Tuna Canyon Creek. Soil and willow stakes will be placed in the rip rap. The applicant also proposes to re-vegetate the riparian area along the disturbed section of Tuna Canyon Creek. Geotextile fabric and native seed mix will be placed along the upper slopes for erosion control. The steep slope above the realigned road segment will also be benched, re-graded, and a terrace drain system installed. The proposed roadway realignment will require two existing corrugated metal pipe culverts in this area to be replaced by two new reinforced concrete pipes.

The Geotechnical and Materials Engineering Division of Los Angeles County Department of Public Works (LACDPW) has determined that the proposed road work is necessary to improve the stability of Tuna Canyon Road in order to maintain the public's ability to use this road for vehicular traffic and for fire safety access. However, the Commission also notes that the proposed development, although necessary to remediate a hazardous eroding road embankment slope condition, and although it will reduce the risks associated with the site, will still not eliminate the potential for erosion of the steep slope on the subject site. The Commission finds that minimization of site erosion will add to the stability of the site. Erosion can best be minimized by requiring the applicant to plant all disturbed areas of the site with native plants compatible with the surrounding riparian/oak woodland habitat. Further, in past permit actions, the Commission has found that invasive and non-native plant species are typically characterized as having a shallow root structure in comparison with their high surface/foliage weight and/or require a greater amount of irrigation and maintenance than native vegetation. The Commission notes that non-native and invasive plant

species with high surface/foliage weight and shallow root structures do not serve to stabilize steep slopes, such as the slopes on the subject site, and that such vegetation results in potential adverse effects to the geologic stability of the project site. In comparison, the Commission finds that native plant species are typically characterized not only by a well developed and extensive root structure in comparison to their surface/foliage weight but also by their low irrigation and maintenance requirements. Therefore, in order to ensure the stability and geotechnical safety of the site, **Special Conditions One (1) and Two (2)** specifically require that all proposed disturbed areas on the subject site be stabilized with native vegetation appropriate for a riparian/oak woodland and chaparral habitat.

Further, the proposed project, as conditioned to ensure that the disturbed slopes on the site are revegetated with native vegetation, has been designed to ensure slope stability on site to the maximum extent feasible. However, the Coastal Act recognizes that certain development projects located in geologically hazardous areas, such as the subject site, still involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to determine who should assume the risk. When development in areas of identified hazards is proposed, the Commission considers the hazard associated with the project site and the potential cost to the public, as well as the need to maintain this road for vehicular and emergency access. As such, the Commission finds that due to the foreseeable possibility of erosion, flooding, and slope failure, the applicant shall assume these risks as a condition of approval. Therefore, **Special Condition Four (4)** requires the applicant to waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development. The applicant's assumption of risk, will show that the applicant is aware of and appreciates the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

Therefore, for the reasons discussed above, the Commission finds that the proposed project, as conditioned, is consistent with Section 30253 of the Coastal Act.

D. Local Coastal Program

Section 30604 of the Coastal Act states:

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

Section 30604(a) of the Coastal Act provides that the Commission shall issue a Coastal Development Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with Chapter 3 policies of the Coastal Act. The preceding sections provide findings that the

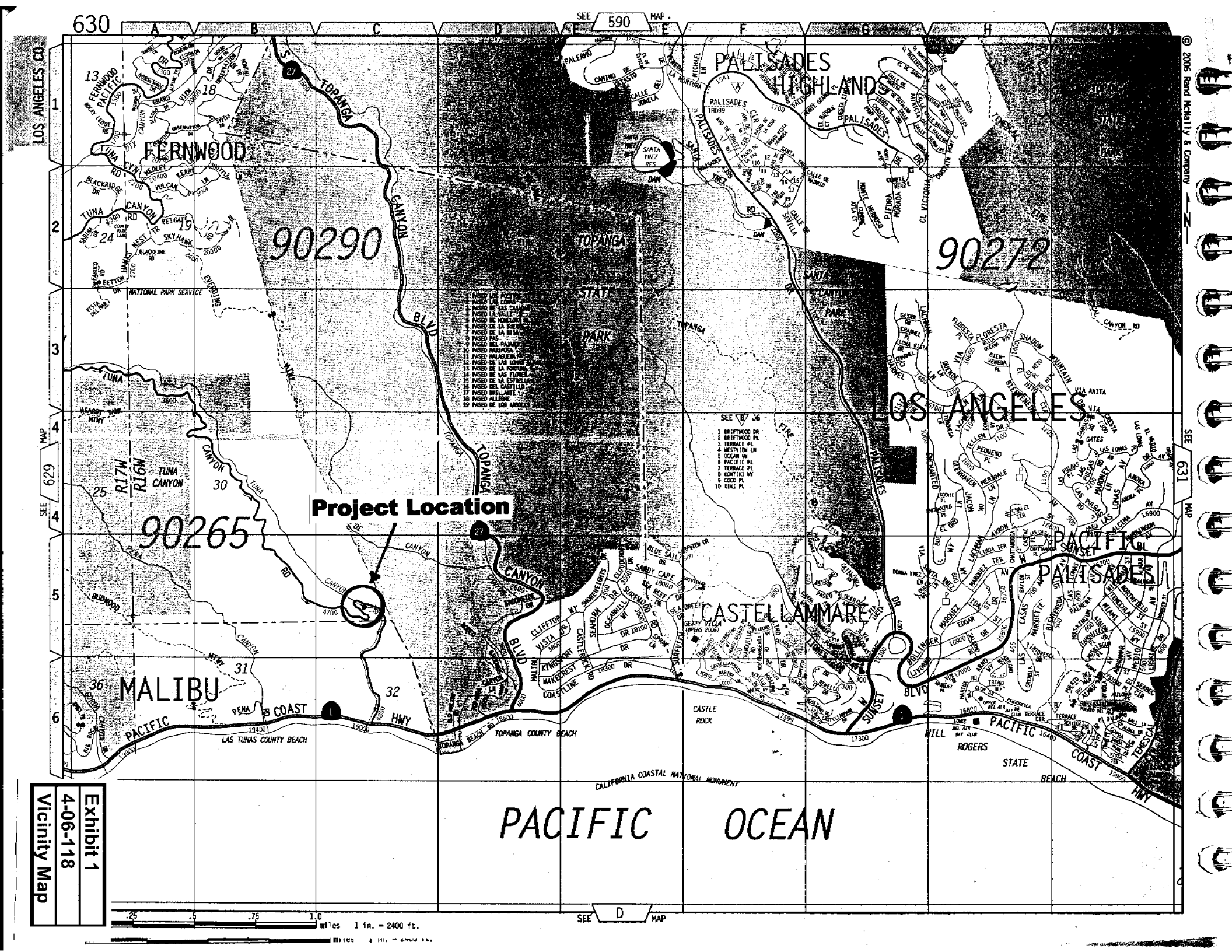
proposed project will be in conformity with the provisions of Chapter 3 to the greatest extent possible if certain conditions are incorporated into the project and are accepted by the applicant. As conditioned, the proposed development will not create adverse impacts and is found to be consistent with the applicable policies contained in Chapter 3 to the greatest extent possible. Therefore, the Commission finds that approval of the proposed development, as conditioned, will not prejudice the County of Los Angeles' ability to prepare a Local Coastal Program for this area which is also consistent with the policies of Chapter 3 of the Coastal Act, as required by Section 30604(a).

E. CEQA

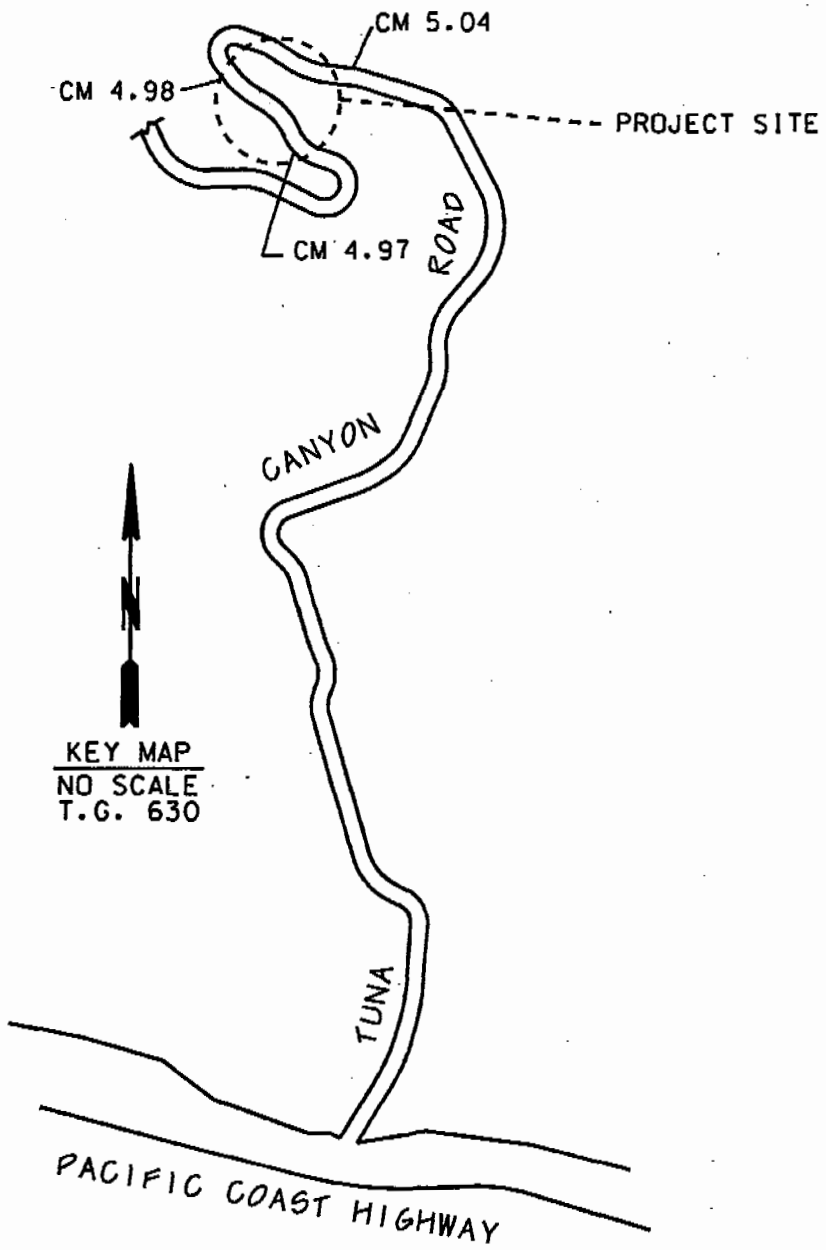
Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California 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 County of Los Angeles found that the proposed project was statutorily exempt pursuant to Section 21080 (b) (3) of the California Environmental Quality Act in October 2005.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed development is authorized by the Act and, as conditioned, is as consistent with the policies of the Coastal Act as is possible. Feasible mitigation measures which will minimize all adverse environmental effects have been required as special conditions. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.



LOCATION MAP



TUNA CANYON ROAD @ MM4.97/4.98/5.04

RDC0014679

Exhibit 2
4-06-118
Location Map

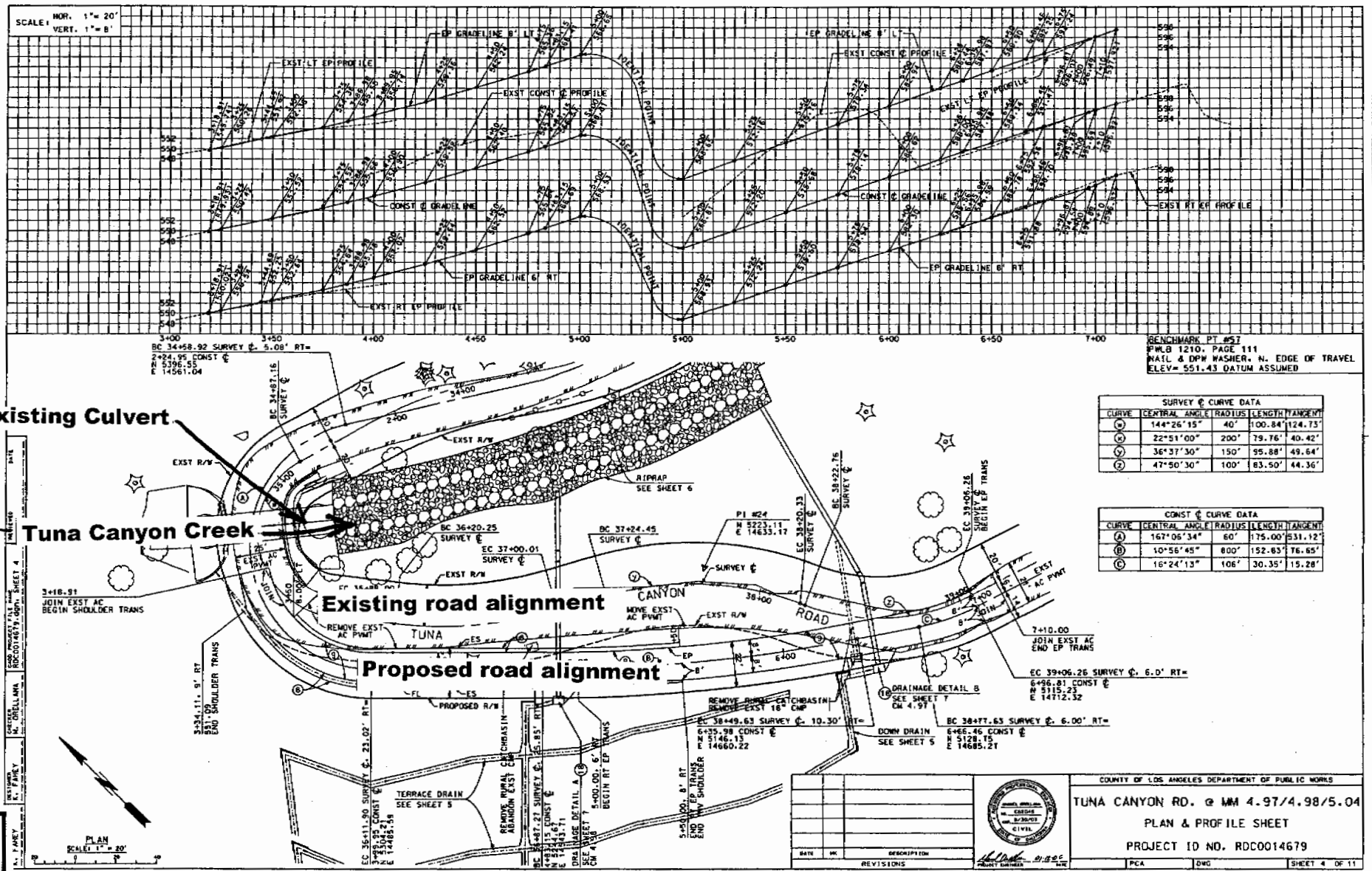
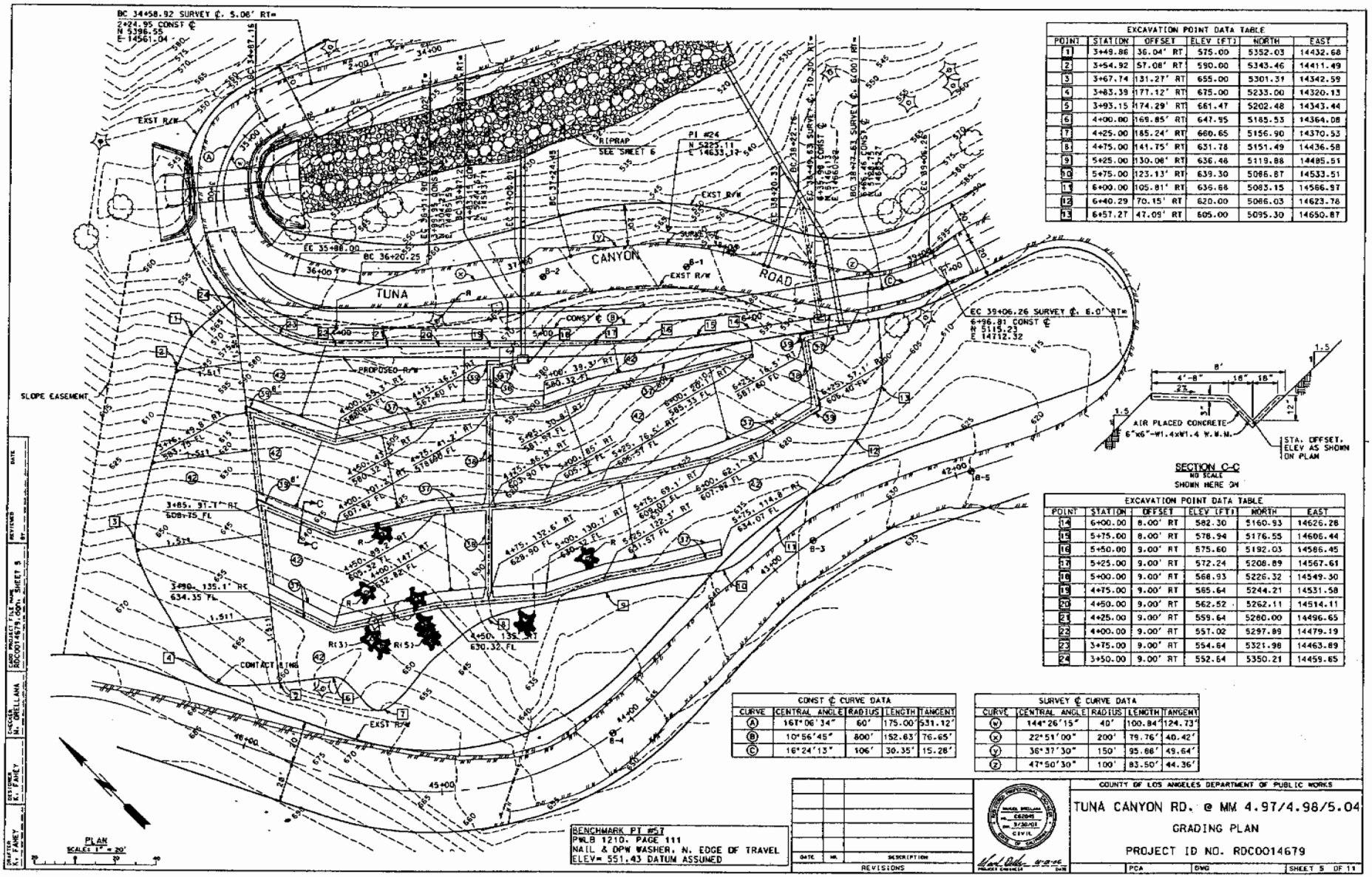


Exhibit 3
4-06-118
Site Plan



EXCAVATION POINT DATA TABLE					
POINT	STATION	OFFSET	ELEV (FT)	NORTH	EAST
1	3+49.86	36.04' RT	575.00	5352.03	14432.68
2	3+54.92	57.08' RT	590.00	5343.46	14411.49
3	3+67.74	131.27' RT	655.00	5301.31	14342.59
4	3+83.38	177.12' RT	675.00	5233.00	14320.13
5	3+93.15	174.29' RT	661.47	5202.48	14343.44
6	4+00.00	169.85' RT	647.95	5185.53	14364.08
7	4+25.00	185.24' RT	660.65	5156.90	14370.53
8	4+75.00	141.75' RT	631.78	5151.49	14436.58
9	5+25.00	130.06' RT	636.46	5119.88	14485.51
10	5+75.00	123.13' RT	639.30	5086.87	14533.51
11	6+00.00	105.81' RT	636.68	5083.15	14586.97
12	6+40.29	70.15' RT	620.00	5086.03	14623.78
13	6+57.27	47.09' RT	605.00	5095.30	14650.87

EXCAVATION POINT DATA TABLE					
POINT	STATION	OFFSET	ELEV (FT)	NORTH	EAST
14	6+00.00	8.00' RT	582.30	5160.93	14626.28
15	5+75.00	8.00' RT	578.94	5176.55	14606.44
16	5+50.00	9.00' RT	575.60	5192.03	14586.45
17	5+25.00	9.00' RT	572.24	5208.89	14567.61
18	5+00.00	9.00' RT	568.93	5226.32	14549.30
19	4+75.00	9.00' RT	565.64	5244.21	14531.58
20	4+50.00	9.00' RT	562.52	5262.11	14514.11
21	4+25.00	9.00' RT	559.64	5280.00	14496.65
22	4+00.00	9.00' RT	557.02	5297.89	14479.19
23	3+75.00	9.00' RT	554.64	5321.98	14463.89
24	3+50.00	9.00' RT	552.64	5350.21	14459.65

CONST ℄ CURVE DATA				
CURVE	CENTRAL ANGLE	RADIUS	LENGTH	TANGENT
(A)	161°06'34"	60'	175.00'	531.12'
(B)	10°56'45"	800'	152.83'	76.65'
(C)	16°24'13"	106'	30.35'	15.28'

SURVEY ℄ CURVE DATA				
CURVE	CENTRAL ANGLE	RADIUS	LENGTH	TANGENT
(W)	144°26'15"	40'	100.84'	124.73'
(X)	22°51'00"	200'	79.76'	40.42'
(Y)	36°37'30"	150'	95.88'	49.64'
(Z)	47°50'30"	100'	83.50'	44.36'

DATE	NO.	DESCRIPTION
		REVISIONS

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TUNA CANYON RD. @ MM 4.97/4.98/5.04

GRADING PLAN

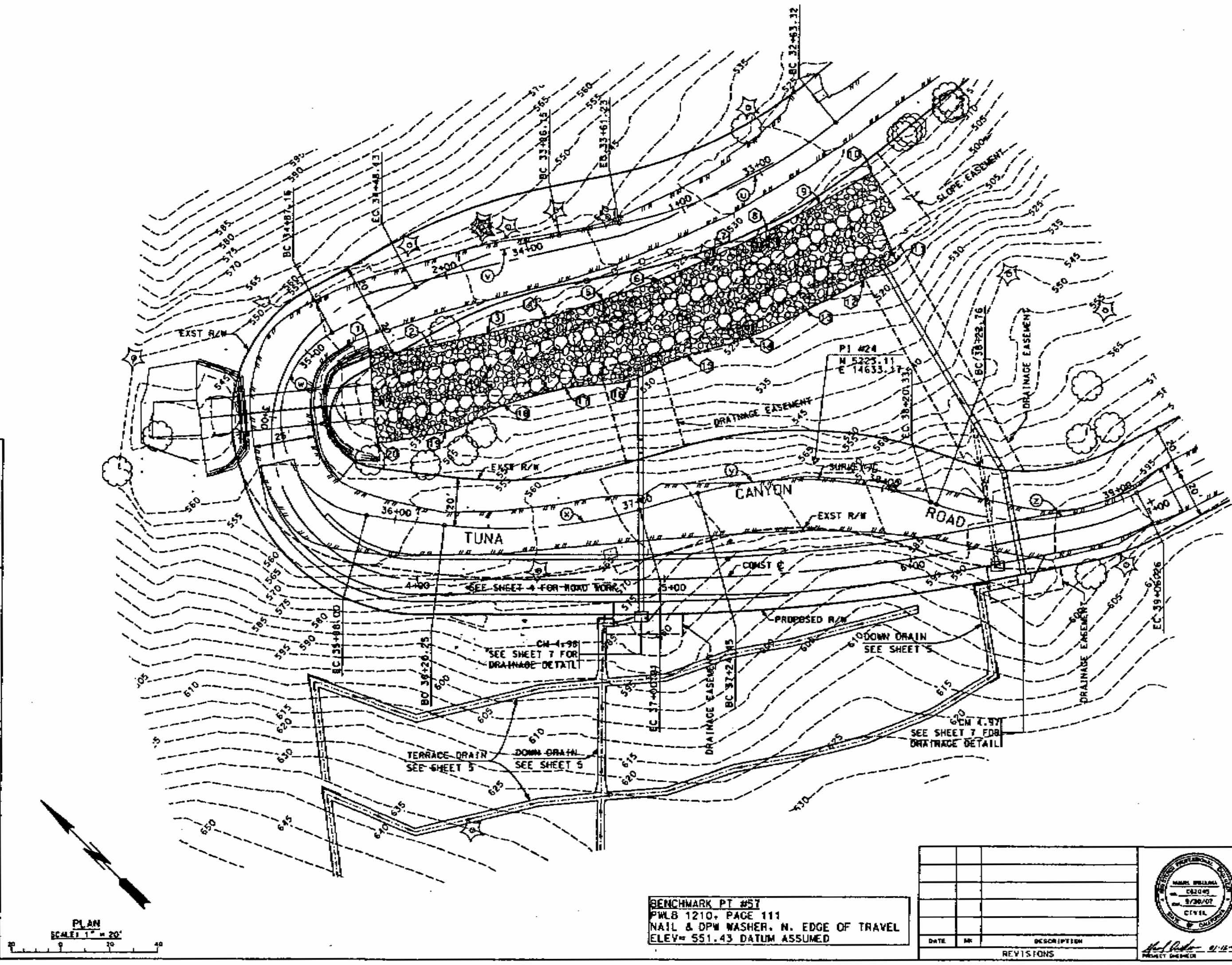
PROJECT ID NO. RDC0014679

PCA | DWG | SHEET 5 OF 11

DESIGNED K. FAHEY | DRAFTED K. FAHEY | CHECKED M. ORELLANA | LAND PROJECT FILE NAME RDC0014679_000n_SHEET 5

: Oak trees to be removed

Exhibit 4
4-06-118
Grading Plan



POINT DATA TABLE			
POINT	STATION	OFFSET	ELEVATION
1	34+78.11	15.94' LT	537.47'
2	34+54.63	23.70' LT	534.40'
3	34+28.49	29.71' LT	533.35'
4	34+00.00	31.45' LT	530.43'
5	33+73.79	29.10' LT	527.83'
6	33+51.19	25.54' LT	524.34'
7	33+29.73	23.12' LT	522.58'
8	33+08.02	22.18' LT	523.01'
9	32+66.28	22.76' LT	517.56'
10	32+64.74	24.86' LT	515.72'
11	32+76.11	59.83' LT	511.30'
12	32+87.84	58.70' LT	517.56'
13	33+07.82	58.16' LT	523.01'
14	33+27.78	59.02' LT	522.58'
15	37+32.87	55.94' LT	524.34'
16	37+10.48	51.98' LT	527.83'
17	36+78.82	55.30' LT	530.43'
18	36+44.52	50.90' LT	515.72'
19	36+16.01	37.91' LT	534.40'
20	35+88.81	29.90' LT	538.90'

SURVEY ℄ CURVE DATA				
CURVE	CENTRAL ANGLE	RADIUS	LENGTH	TANGENT
U	28°03'00"	200'	97.91'	49.96'
V	17°45'20"	200'	61.98'	31.24'
W	144°26'15"	40'	100.84'	124.73'
X	22°51'00"	200'	79.76'	40.42'
Y	36°37'30"	150'	95.88'	49.64'
Z	47°50'30"	100'	83.50'	44.36'

BENCHMARK PT #57
PWLB 1210, PAGE 111
NAIL & DPW WASHER, N. EDGE OF TRAVEL
ELEV= 551.43 DATUM ASSUMED

DESIGNER K. FAHEY | CHECKER M. ORELLANA | CADD PROJECT FILE NAME RDC0014679.dgn, SHEET 6 | REVIEWED BY | DATE

REVISIONS: DATE | BY | DESCRIPTION

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

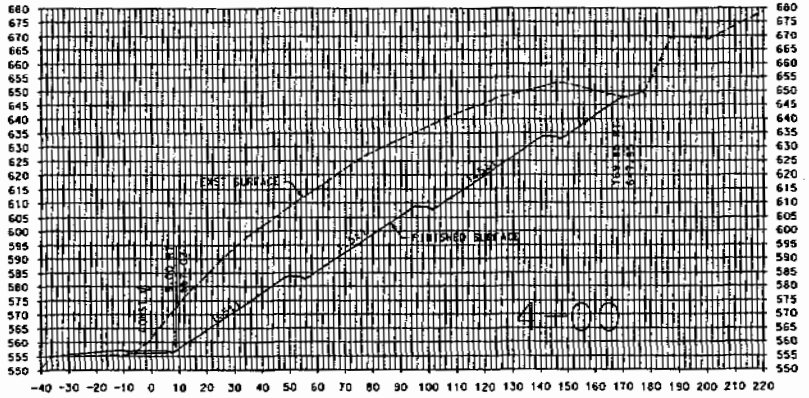
TUNA CANYON RD. @ MM 4.97/4.98/5.04

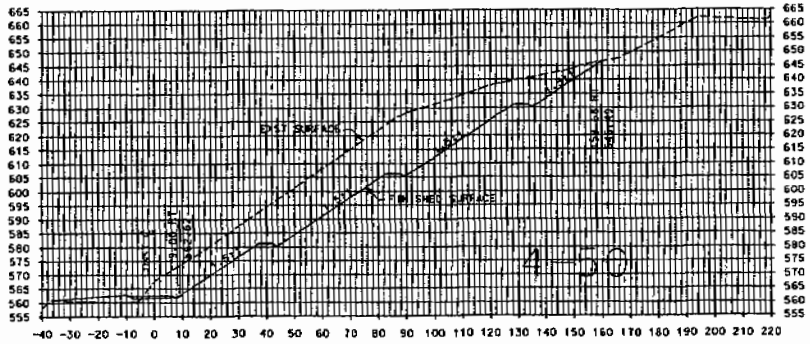
RIPRAP PLAN

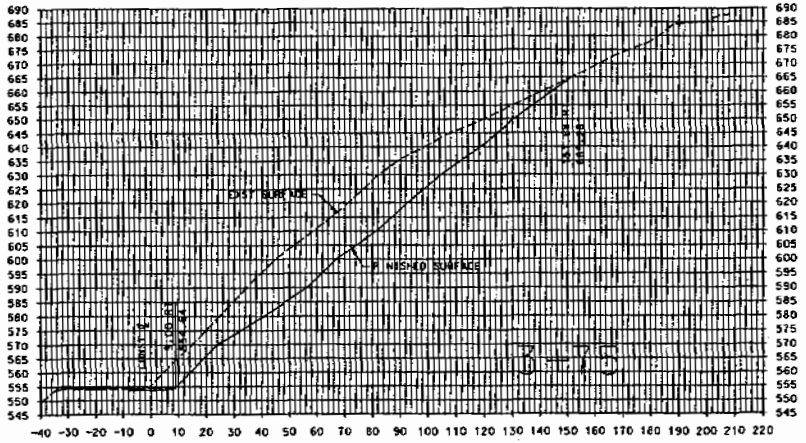
PROJECT ID NO. RDC0014679

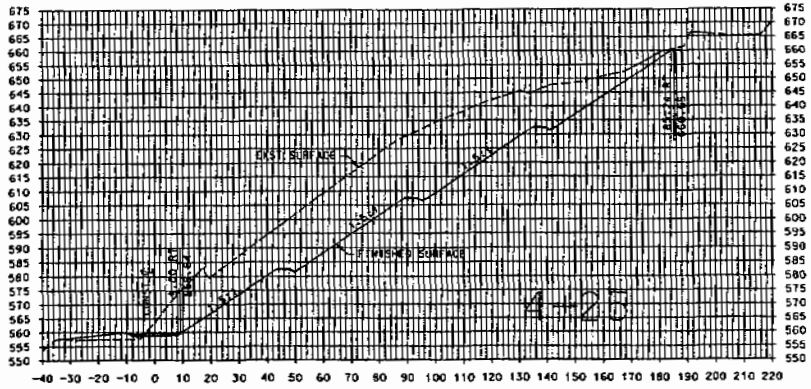
PCA | DWG | SHEET 6 OF 11

Exhibit 5
4-06-118
Rip Rap Plan









DESIGNED M. ORELLANA | CADD PROJECT FILE NAME RDC0014679.dgn, SHEET 8 | REVISIONED BY | DATE

DRAWN FAHEY

DATE	BY	DESCRIPTION
		REVISIONS

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TUNA CANYON RD. @ MM 4.97/4.98/5.04

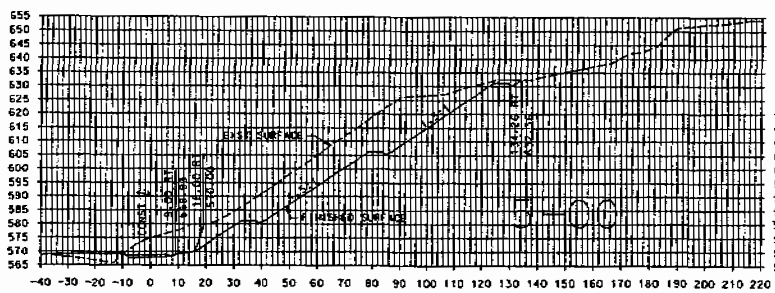
CROSS SECTIONS

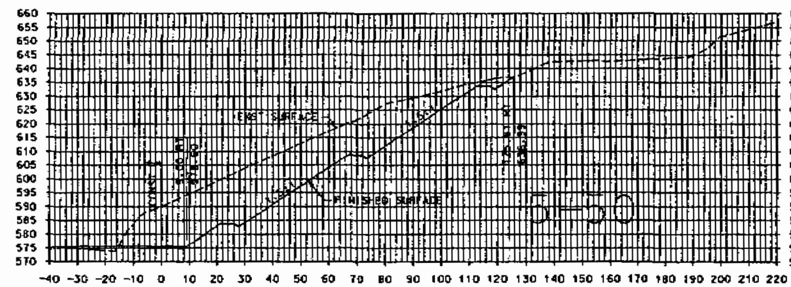
STATION 3+75 TO STATION 4+75

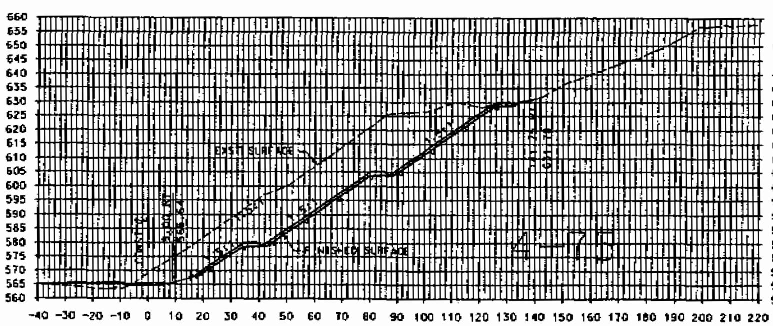
PROJECT ID NO. RDC0014679

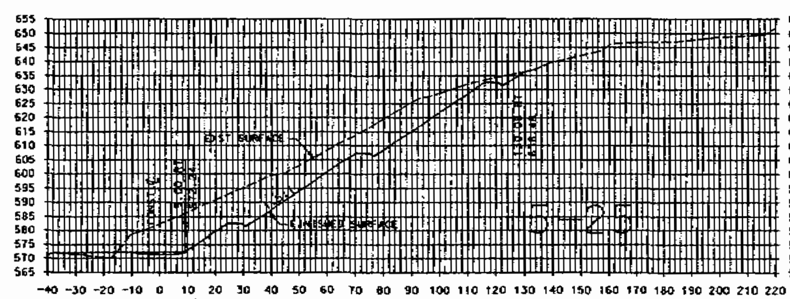
PCA | DWG | SHEET 8 OF 11

Exhibit 6
4-06-118
Cross Sections









DRAFTER K. FAHEY | DESIGNER K. FAHEY | CHECKER M. ORELLANA | CADD PROJECT FILE NAME RDC0014679.dgn; SHEET 9 | REVIEWED BY | DATE

REVISIONS — DATE | MK | DESCRIPTION

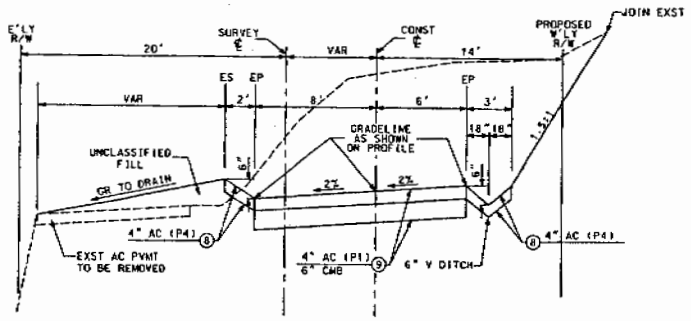
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TUNA CANYON RD. @ MM 4.97/4.98/5.04

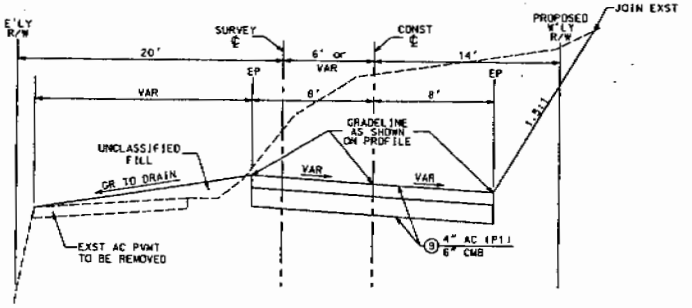
CROSS SECTIONS
STATION 5+00 TO STATION 6+25

PROJECT ID NO. RDC0014679

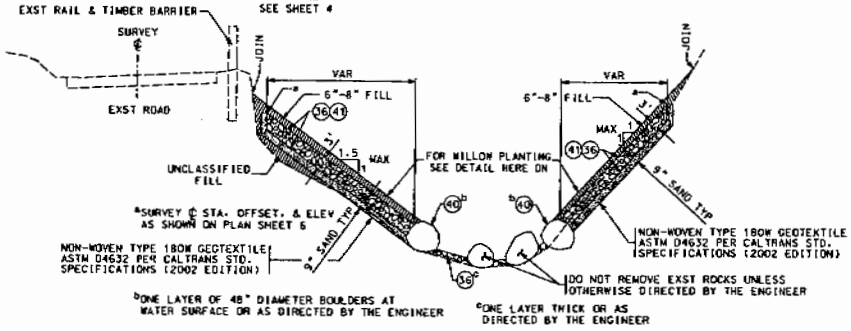
PCA | DWG | SHEET 9 OF 11



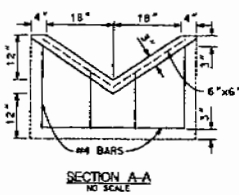
TYPICAL SECTION
STA 3+50 to STA 5+00
NO SCALE
SEE SHEET 4



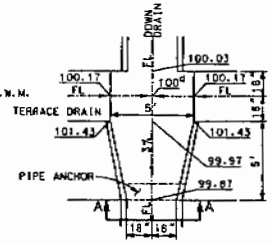
TYPICAL SECTION
STA 5+50 to STA 7+10
NO SCALE
SEE SHEET 4



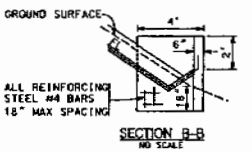
TYPICAL RIPRAP SECTION
NO SCALE
SEE SHEET 6



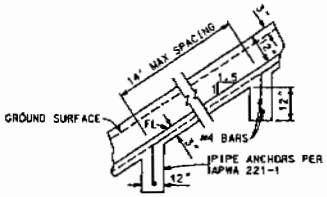
SECTION A-A
NO SCALE



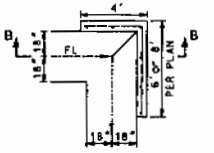
TYPICAL TERRACE TO DOWN DRAIN DETAIL
NO SCALE
SEE SHEET 5
[d] ELEVATION AS SHOWN ON PLAN



SECTION B-B
NO SCALE



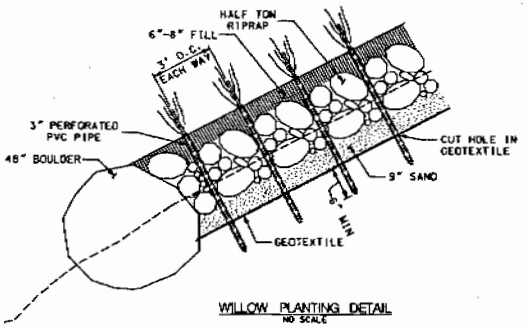
TYPICAL DOWN DRAIN DETAIL
NO SCALE
SEE SHEET 5



SPLASH WALL DETAIL
NO SCALE
SEE SHEET 5

DRAIN & SPLASH WALL NOTES

1. CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI. CONCRETE MAY BE PNEUMATICALLY PLACED.
2. DRAIN REINFORCING SHALL BE 6"x6"-W1.4xW1.4 WELDED WIRE MESH (W.W.M.) OR APPROVED EQUAL.
3. GROUND SHALL BE PRE-WETTED TO THE SATISFACTION OF THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE. MOISTURE LOSS RETARDANT SHALL BE USED WHEN REQUIRED BY THE ENGINEER.



WILLOW PLANTING DETAIL
NO SCALE

PLANTING NOTES

1. WILLOW CUTTINGS SHALL BE 1/2 TO 1&1/2 INCHES IN DIAMETER.
2. DRIVE WILLOW STAKE INTO PERFORATED PVC PIPE, THROUGH SAND, GEOTEXTILE, AND 6 INCHES INTO NATIVE GRADE, ACCORDING TO SPEC.
3. USE WILLOW COLLECTED NEAR WORK SITE ACCORDING TO SPEC.

DRAFTED	DESIGNED	CHECKED	CADD PROJECT FILE NAME	REVIEWED	DATE
K. FANEY	K. FANEY	M. ORELLANA	RDC0014679.dgn, SHEET 3	BY	

DATE	INI.	DESCRIPTION
2/1/08	M.O.	UPDATED WILLOW PLANTING DETAIL TO MATCH SPECIAL PROVISIONS, PER ARD.
REVISIONS		

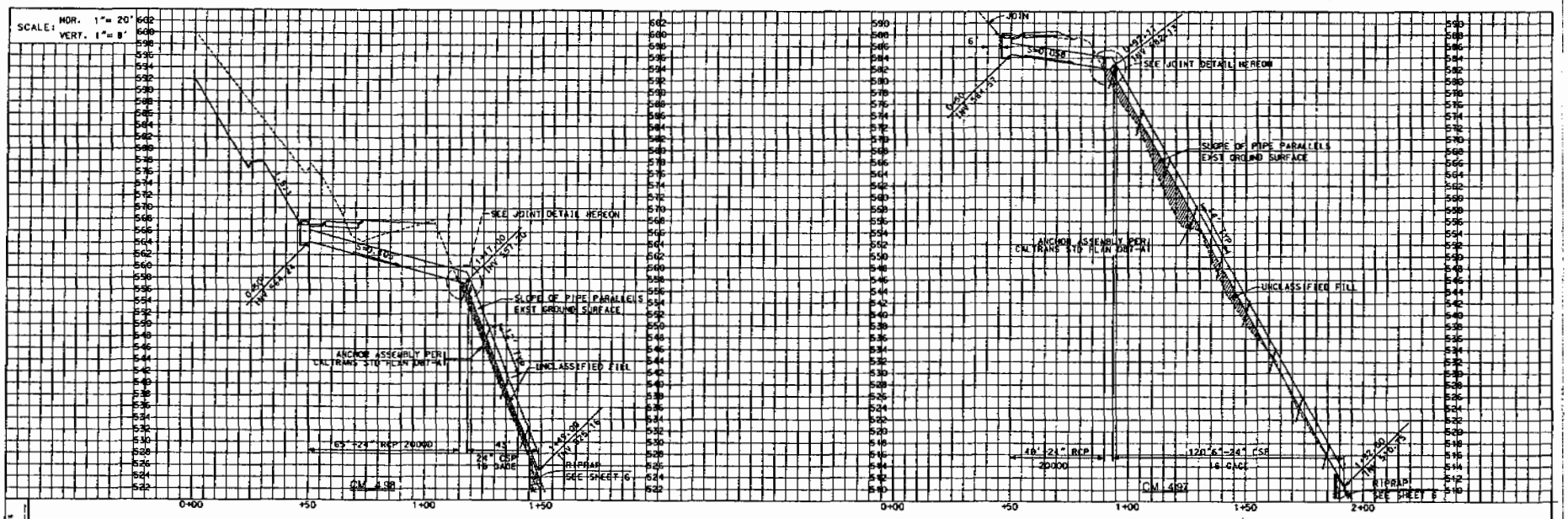
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

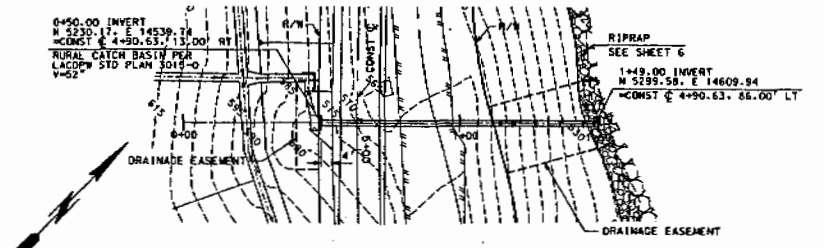
TUNA CANYON RD. @ MM 4.97/4.98/5.04

TYPICAL SECTIONS

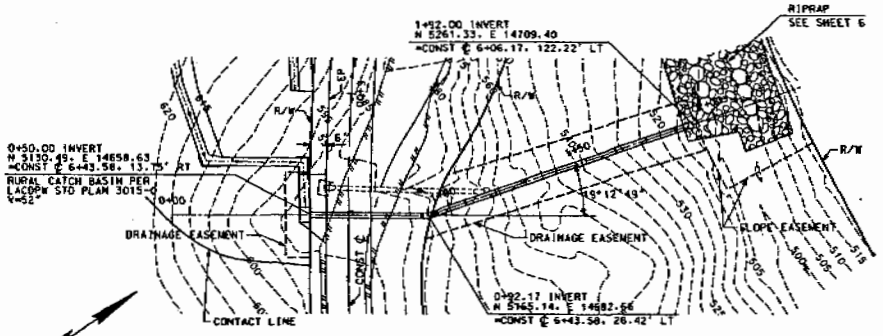
PROJECT ID NO. RDC0014679

PCA	DWG	SHEET 3 OF 11

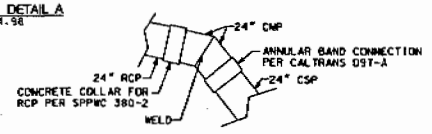




DRAINAGE DETAIL A
CM 4.98



DRAINAGE DETAIL B
CM 4.97



JOINT DETAIL
NO SCALE

PLAN
SCALE: 1" = 20'

DATE	BY	DESCRIPTION
		REVISIONS

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS

TUNA CANYON RD. @ MM 4.97/4.98/5.04

DRAINAGE DETAILS

PROJECT ID NO. RDC0014679

PCA	DWG	SHEET 7 OF 11

Exhibit 7
4-06-118
Drainage Details

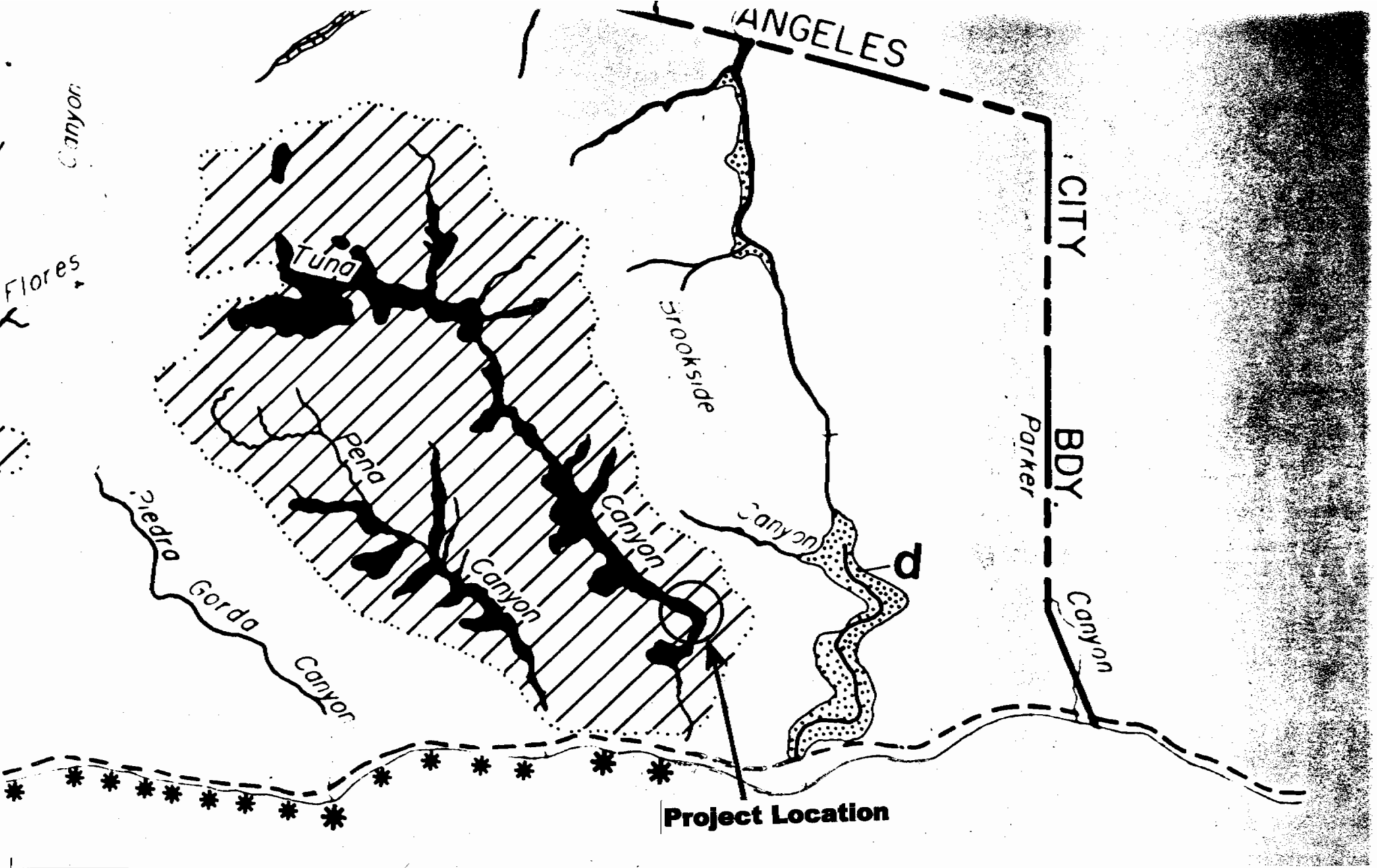
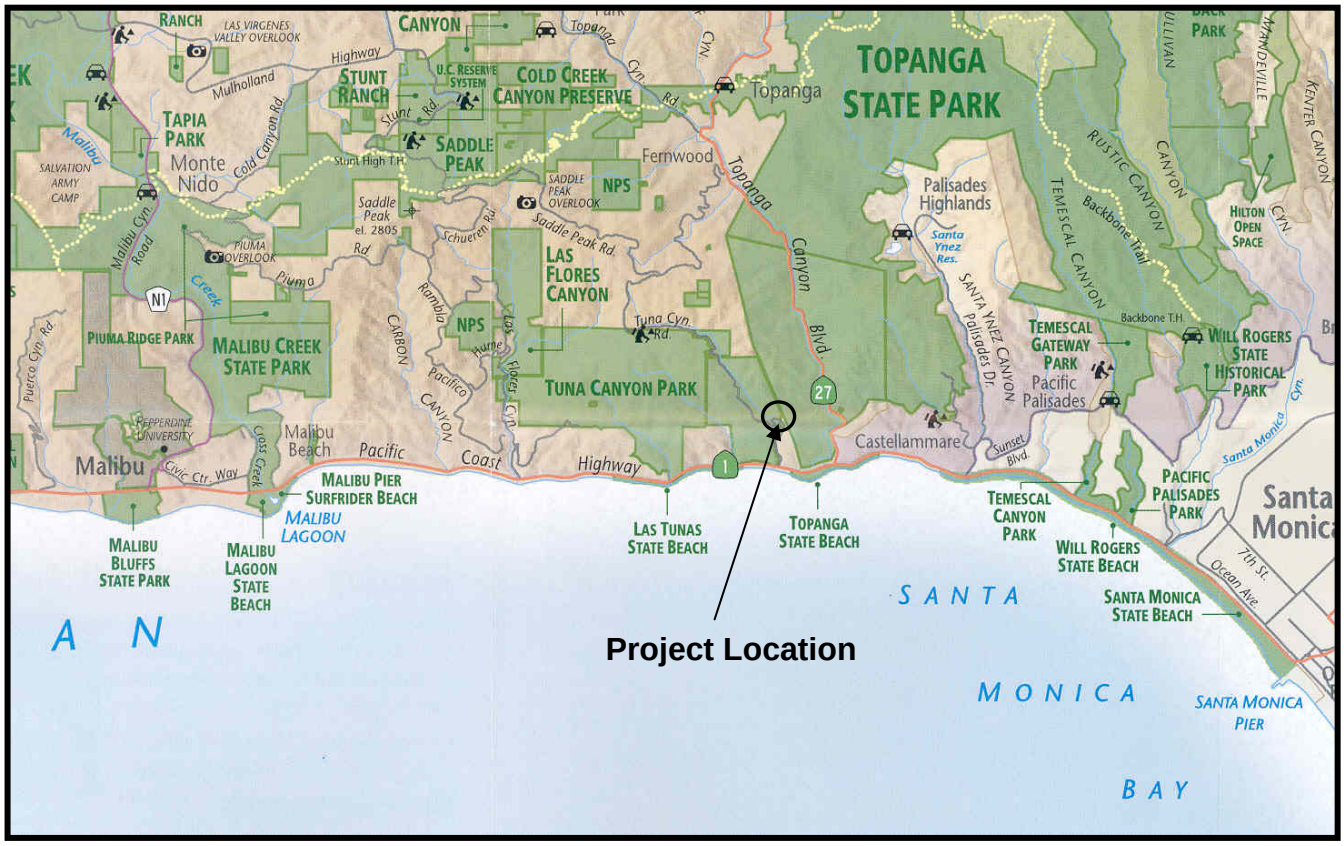


Exhibit 8
4-06-118
LUP Sensitive Resources Map



Santa Monica Mountains Conservancy Parklands and Open Space Map (2002)

EXHIBIT 9
4-06-118
Parkland/Open Space Map