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STATE OF CALIFORNIA - THE RESOURCES AGENCY PETE WILSON, *Governor*

CALIFORNIA COASTAL COMMISSION

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49th Day: 7/4/97
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Staff: A. Padilla
Staff Report: 6/13/97
Hearing Date: 7/8-11/97
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 5-97-144

APPLICANT: Maguire Thomas Partners AGENT: Robert Miller

PROJECT LOCATION: 13250 Jefferson Boulevard, Playa del Rey, City of Los Angeles.

PROJECT DESCRIPTION: Installation of a temporary (3 years) 6 ft. high by 540 ft. long chain link fence adjacent to an ongoing native dunes habitat restoration area and request for a three year extension for the restoration project.

Lot area:	9.76 acres
Zoning:	Open Space
Ht abv fin grade:	6 feet

LOCAL APPROVALS RECEIVED: City of Los Angeles Approval in Concept

SUBSTANTIVE FILE DOCUMENTS:

1. Certified Playa Vista Land Use Plan, City of Los Angeles

2. Coastal Development Permit #5-90-174 (Maguire Thomas Partners-Playa Vista)

STAFF RECOMMENDATION:

Staff recommends that the Commission approve the proposed project with special conditions regarding monitoring of the dune restoration, time limitation of fencing, and acknowldgment that this permit does not constitute a waiver of any public rights which may exist on the property.

STAFF SUMMARY: The proposed temporary fence is for the protection against significant disruption of habitat values during the on-going dune restoration project and to allow the restoration project, permitted under a previous coastal developemnt permit, to continue for an additional 3 years. The proposed fence will not adversely impact any significant resources in the area. Access into this coastal area will be temporarily impacted but in this case is appropriate to prevent disturbances that impede the restoration process.

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions.

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, 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 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

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 this permit is reported to the Commission. 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. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

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

5. Inspections. The Commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.

6. 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.

7. 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. Approval of Final Monitoring Plan

The applicant shall submit a habitat monitoring, remediation, and maintenance program to the Coastal Commission at the end of the of the restoration project. This plan shall specify that the monitoring will continue for at least 5 years after the end of the 3 year extension on the implementation period or at the end of the implementation period if completed before the end of 3 years. The monitoring of the dune area shall be conducted monthly during the time of vegetation establishment (approximately 3 years) to determine plant survival and need for replanting, and seasonally (at least 4 times a year) thereafter.

The monitoring plan shall include evaluation methods (including species of fauna and flora to be monitored, and number and location of sites designated for sampling) for determining restoration success. Minimum standards for determining success include: (1) 60% coverage of the dunes with the perennial native dune plant species listed in the Statement of Work Schedule [pp. 14-15 of Attachment X, Dunes Revegetation and Ecosystem Restoration Plan (See Exhibit #5 of staff report)]; and (2) evidence of a stable community of native flora and fauna with a consistent species diversity and density (within a 30% range of variability). The monitoring plan shall identify remedial efforts to be immediately implemented in the event the proposed dune restoration effort proves unsuccessful, as measured by the above standards.

Additionally, the monitoring reports shall include plans for implementation (or continuation) of any maintenance necessary to assure future viability of the restored dune ecosystem. The applicant shall also continue to inspect the entire area where non-native plants have been removed, to assess whether further removal is necessary. The Coastal Commission shall be provided with all monitoring reports and implementation plans for remedial work and ongoing maintenance.

In the event that plants fail to establish, based on the above standards, within 2 1/2 years of the issuance of this permit, the applicant shall apply to amend the permit for additional time that will be necessary to complete the revegetation.

2. Fence Placement and Removal

The placement of the approximately 540 linear feet of temporary chain link fence along the western portion of the project area (as designated in Exhibit #2) is limited to 3 years (the length of the extension of the dune restoration project). Upon completion of the restoration project, or within 3 years from the date of Commission approval of this permit, which ever comes first, the applicant shall remove the fencing or apply for an amendment to this coastal development permit to allow an extension of time.

3. Public Rights

By acceptance of this permit, the applicant acknowledges, on behalf of him/herself and his/her successors in interest, that issuance of the

permit shall not constitute a waiver of any public rights which may exist on the property.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

A. Project Description and Background

The applicant proposes to temporarily install, for a period of three years, a 6 ft. high by 540 ft. long chain link fence adjacent to an ongoing native dunes habitat restoration area. The applicant is also requesting to continue work on a dune restoration project that was part of the 18-month non-native plant removal and coastal dune restoration plan approved under Coastal Development Permit #5-90-174 (Maguire Thomas Partners-Playa Vista). The former project encompassed the identical 10 acres proposed to be revegetated in the present permit.

The proposed project site (fencing and dune restoration) is located along the western portion of an approximately 10 acre site previously approved by the Commission for dune restoration. The approximately 10 acre site is boarded to the south by the commercial area along Culver Boulevard, to the north by Ballona Channel, to the east by the Ballona Wetlands, and to the west by apartment complexes on the bluffs at Vista del Mar, in Playa del Rey.

The proposed fence will be located in two separate locations. One section of the fence will be located near the terminus of 66th Avenue. The second and longer section will be located just south of the terminus of 63rd Avenue and extend to the existing fence near the Ballona Creek channel. The proposed fencing will be located in the approximate area where a segment of the previously approved temporary fencing was located under CDP #5-90-174.

The location of the fence is not intended to define or demarcate habitat or property boundaries. The intent of the fence is to limit intrusion into the dune restoration site during the implementation of the restoration plan.

On May 15, 1997, an Emergency Permit was approved by the Executive Director for the temporary chain link fence. The Emergency Permit was determined to be necessary due to human and pet disturbances of the sensitive native plants and animals found within the dune area. The fence has been constructed consistent with the Emergency Permit. As required by the conditions of the Emergency Permit the applicant is currently applying for a Coastal Development Permit for the development completed under the Emergency Permit in order for the development to become permanent (in this case, for a period of 3 years).

B. Project History

In May of 1990 the Commission approved a Coastal Development permit for an 18-month non-native plant removal and coastal dune restoration plan [(5-90-174 Maguire Thomas Partners-Playa Vista)]. The primary objective of the restoration project was 1) non-native plant removal; and 2) dune restoration. The project occurred in the Ballona Creek and Centinela Creek drainages which are located south of Ballona Channel, west of Lincoln Boulevard, and east of

Vista del Mar.

The first 6-month phase of the 18-month project included: the removal and subsequent repair of existing, permanent fencing adjacent to Ballona Channel; the installation of a 7,000-linear ft. temporary chain link fence around the southern, eastern, and western periphery of the project area located north of Culver Boulevard, south of Ballona Channel, and east of Vista del Mar; the installation of a temporary buried irrigation line running off an existing water utility; the establishment of a temporary native plant nursery (about 500 square feet); the removal of non-native species (including the application of a herbicide to pampas grass); and, the removal of approximately 40 yards of compacted foreign soil form the dune area and the recontouring of the affected dune area with native sand.

The second and third 6-month phases were similar to the first phase as the phases also involved: the hand clearance of non-native vegetation form across the entire site above the 2 ft. mean sea level contour in degraded dune and wetland areas; the augmentation or reintroduction of native seeds and plants at the dune area; and the implementation of a habitat monitoring program.

The Coastal Development Permit was conditioned to require a monitoring program; removal of temporary fence after 18 months; application to the Department of Fish and Game for a Streambed Alteration Permit; restriction in the use of "footprint" mechanical equipment (outside of the dune restoration area); and a condition placing the applicant on notice that the issuance of the permit does not constitute a waiver of any public rights which may have existed on the property.

At this point in the restoration project most of the ice-plant and pampas grass has been removed from the dune restoration area; trash and debris has been removed; the temporary native plant nursery has been established; and some replanting of native vegetation has taken place.

According to the applicant, the restoration project, which was originally estimated to take 18 months, is taking longer than expected. Although significant progress has been made since the start of the restoration project, the project is conducted solely by volunteers and the process is slower than expected. With the construction of the fence, to keep people, pets and vandals out of the dune restoration area, and an additional three years to continue the restoration work, the applicant feels that the project will be completed.

C. Coastal Resources

At one time, the Playa del Rey sand dunes, as well as the greater main El Segundo sand dune systems hosted substantial dune-associated biota. Today, less than 5% of the historic native species densities remain at Playa del Rey (and across the main El Segundo) sand dune systems, while less than 1% of the historic sand dune-associated plant species cover remains.

The ongoing loss of these coastal dune species and associated habitat means the loss of valuable coastal resources which, as described in Section 30107.5 of the coastal Act, are environmentally sensitive. Section 30107.5 states:

> "Environmentally sensitive area" means any area in which plant or animal like 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 development.

The project area-- even in its degraded state-- qualifies as an environmentally sensitive area. Under CDP #5-90-174 the Commission approved the restoration of the proposed Playa del Rey Sand Dunes area and the riparian and wetland habitat in the Centinela and Ballona Creeks drainages. The Commission found that the restoration plan, as conditioned, was consistent with Coastal Act Section 30240(a), which states:

> (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

The Playa Vista Land Use Plan, which was certified on May 13, 1987, provides for the maintenance, enhancement, and restoration of sensitive habitats, such as dunes and wetlands, in the project area. The LUP further provides that permitted uses in these particular areas include "habitat management" and "controlled nature study;" both of which will be accomplished through the implementation of the proposed project.

The Commission evaluated the proposed project-phase components for any potential disruptions to the sensitive habitat. The Commission found that the installation of the temporary fence around the periphery of the property would help to guarantee against trampling of native vegetation by domestic and feral animals and disturbances to native animal species both of which could exacerbate habitat degradation and frustrate progress in the proposed restoration effort.

With the original permit the applicant submitted a General Dunes Habitat Monitoring Plan (see Exhibit #6) as part of the project application. The Commission found that this plan was adequate for the duration of the implementation period, however, a long-term monitoring plan was not finalized. To ensure that proper long-term monitoring was part of the restoration project, the Commission required, as a condition, that a long-term monitoring plan be submitted once the restoration project was completed. The monitoring plan was required to include standards for judgement of successful restoration, and requirements for sampling schedule additional resource protection through the development and analysis of collected data. As originally conditioned this permit is also conditioned to require submittal of a long-term monitoring plan at the completion of the restoration project.

The proposed fence will be temporary (3 years), will not be located in any biologically sensitive areas, and will help in the restoration of the dunes. The Commission concludes that the construction of the proposed fence along the western portion of the applicant's property and the extension of the dune's restoration work for an additional 3 years, as conditioned, poses no significant impacts to the existing habitat. The Commission finds, therefore, that the subject proposal is consistent with Coastal Act Section 30240(a).

D. Public Access

Section 30210 of the Coastal Act states:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30212 of the Coastal Act states in part:

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,....

Coastal Act Section 30213 which states:

Lower cost visitor and recreational facilities shall be protected, encouraged, and where feasible, provided. Developments providing public recreational opportunities are preferred.

Section 30214 of the Coastal Act states in part:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area....

The Coastal Act provides that public coastal access be maintained and provided. The installation of the fencing at the subject area will temporarily block the public's access to coastal resources. The installation of the chain link fencing, however, is necessary to protect the sensitive habitat while under restoration.

In evaluating the restoration plan approved under #5-90-174 the Commission analyzed the proposal for its consistency with public access issues of the Coastal Act. The Commission found that the dunes are particularly sensitive and could be easily disturbed and damaged by the trampling of domestic animals, off-road vehicles, and other intruders. The subject area is one which-- in its degraded state and while undergoing restoration-- can tolerate only minimal amounts of ground disturbance, and thus the fragility of the resource calls for the limitation of access. Although the original fencing would temporarily block the public's access to coastal resources, the installation of the chain link fencing was necessary to protect the sensitive habitat while under restoration.

Section A, 1b.(6) of the certified Land Use Plan for Playa Vista provides that:

> In Area B (which includes the project area), public access to and along the boundaries of the wetlands shall be controlled to protect sensitive habitats from human intrusion...

Consistent with the above referenced section of the Playa Vista LUP the proposed fencing is to prevent disturbances that impede the restoration process of the area while the area is being restored. In three years, once the dunes are restored--biological values and recreational values enhanced--the fence will be removed and controlled public access to the area will be permitted. To ensure that the fence will be removed once the restoration project is completed, in approximately 3 years, the subject permit has been conditioned so that upon completion of the restoration project or no later than 3 years from the date of Commission action, the fencing will be removed, or the applicant shall apply for an amendment to this Coastal Development Permit to extend the length of time for the fence.

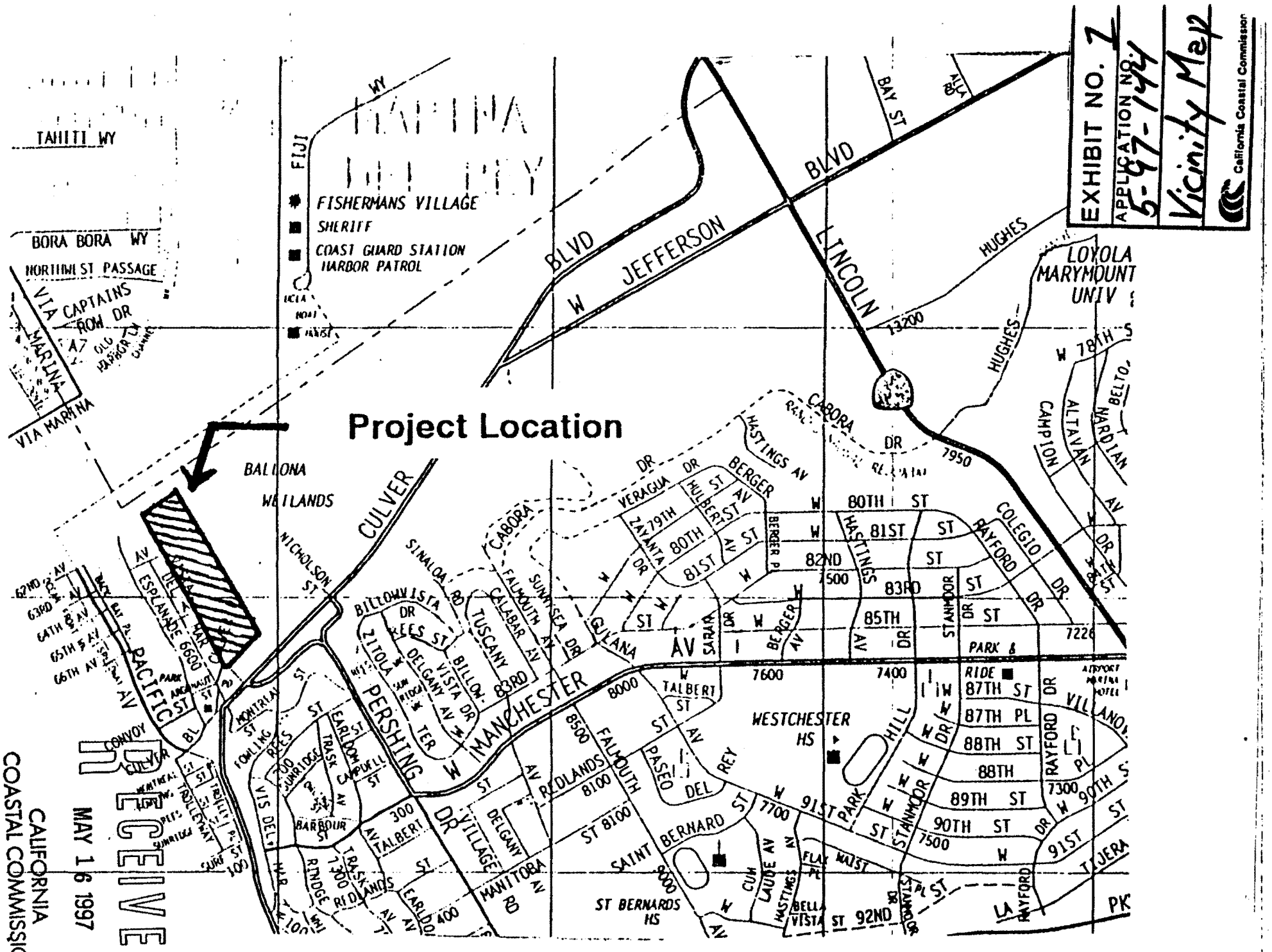
Further, to ensure public rights and thus public access to the project site, the subject permit has been conditioned so that the applicant acknowledges, on behalf of itself and its successors in interest, that issuance of the permit does not constitute a waiver of any public rights which may exist on the property, and acknowledges that issuance of the permit and construction of the permitted development shall not be used or construed to interfere with any public rights that may exist on the property.

The Commission finds that installation of a temporary fence and the approval of the restoration project for an additional three years will ultimately enhance public access to this coastal resource, and is consistent with Sections 30210, 30212(a), and Section 30214 of the Coastal Act and with the Playa Vista Land Use Plan.

E. CEQA

Section 13096(a) of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications 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)(i) 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 impact which the activity may have on the environment.

There are no negative impacts caused by the proposed development which have not been adequately mitigated. Therefore, the proposed project is found consistent with CEQA and the policies of the Coastal Act.



VICINITY MAP

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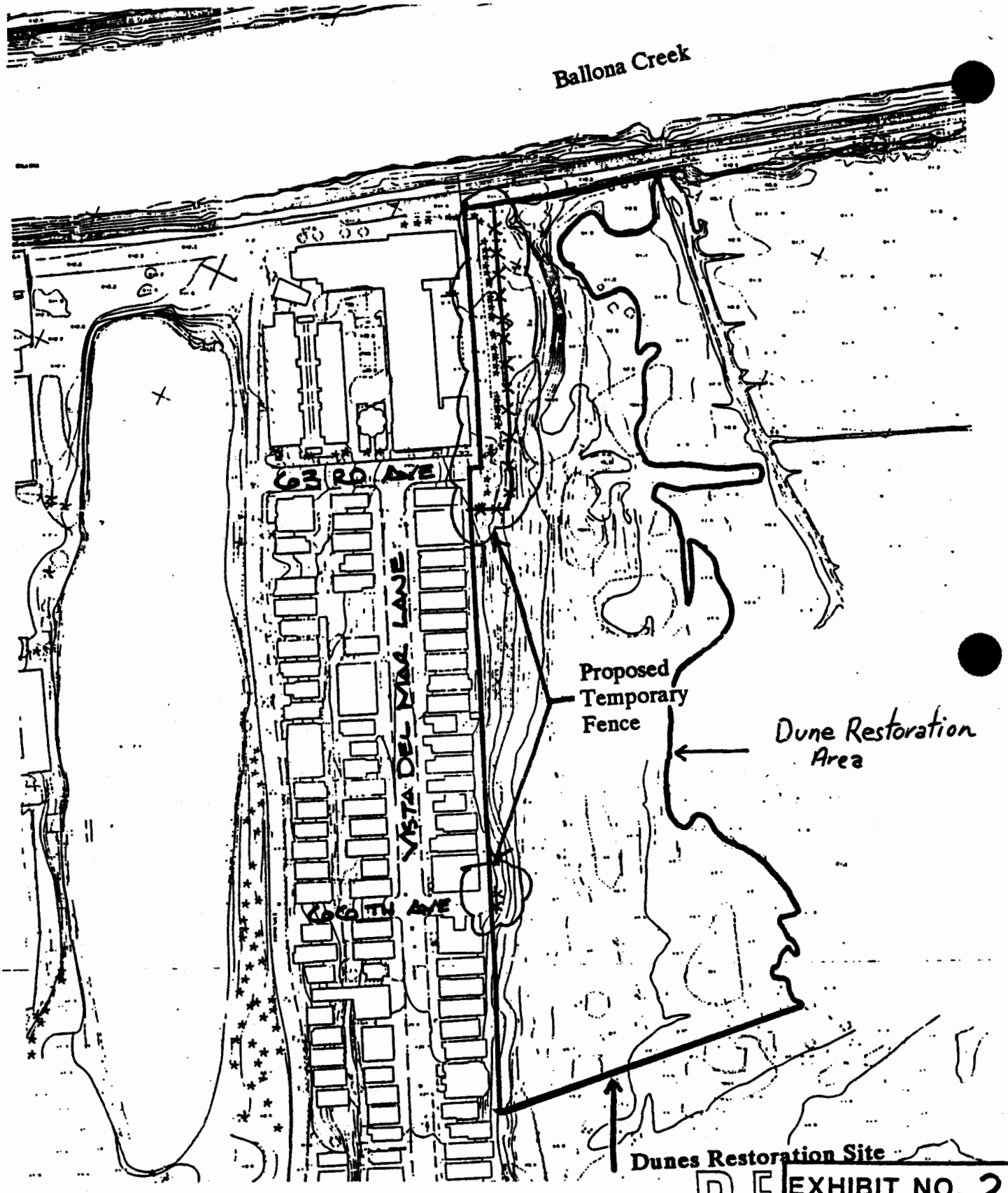

SITE PLAN

5-97-144

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EXHIBIT NO. 2

APPLICATION NO. 5-97-144

Site Plan

California Coastal Commission

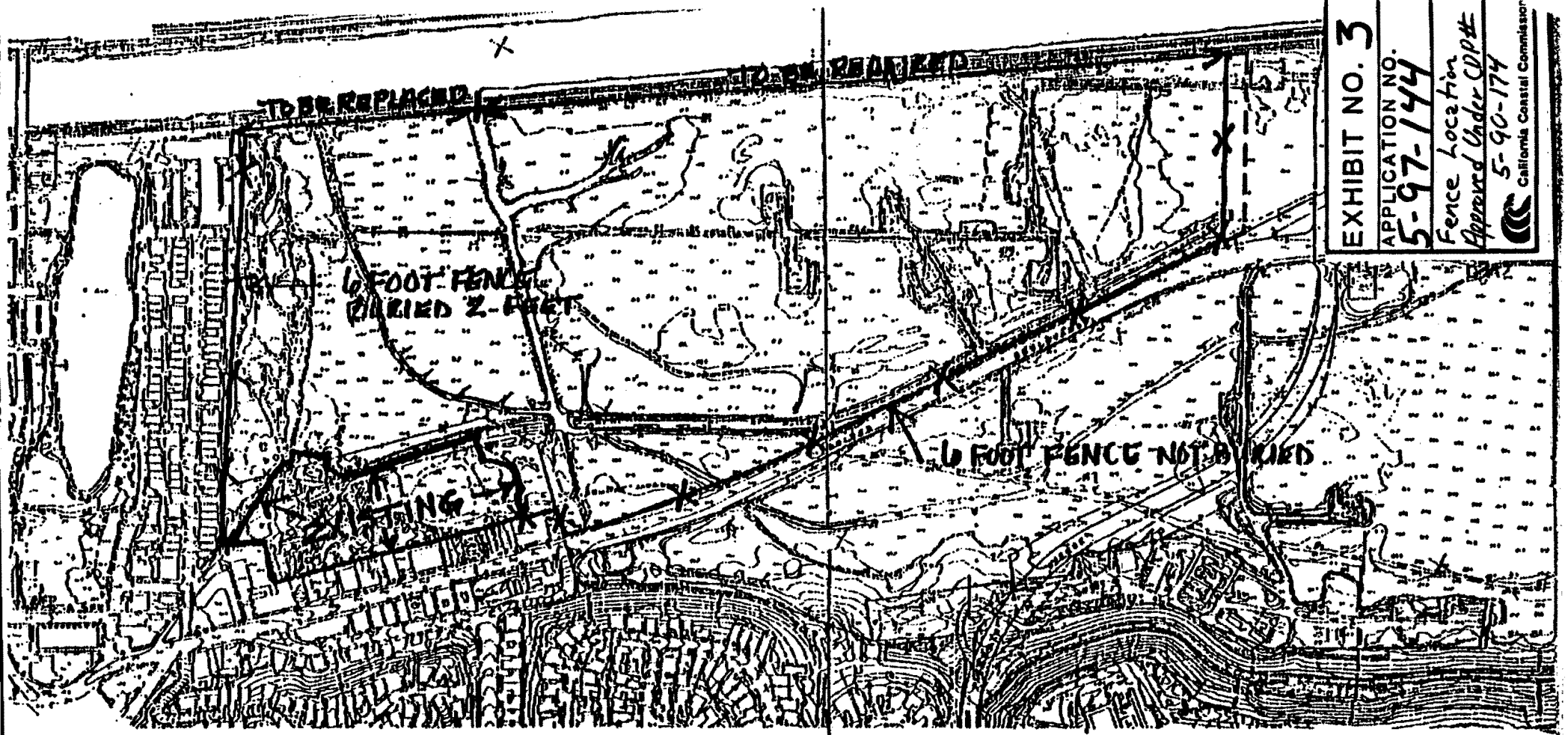

EXHIBIT NO. 3
APPLICATION NO. 5-97-144
Fence Location Approved Under CDP# 5-90-174
California Coastal Commission

Revised East Fence Boundary, as per condition No. 2

X — X — X — X TO BE INSTALLED, AS PROPOSED

REVISED ATTACHMENT III & IIIa 4/17/90

PROPOSED TEMPORARY FENCING

MAP 3
EXISTING TOPOGRAPHY

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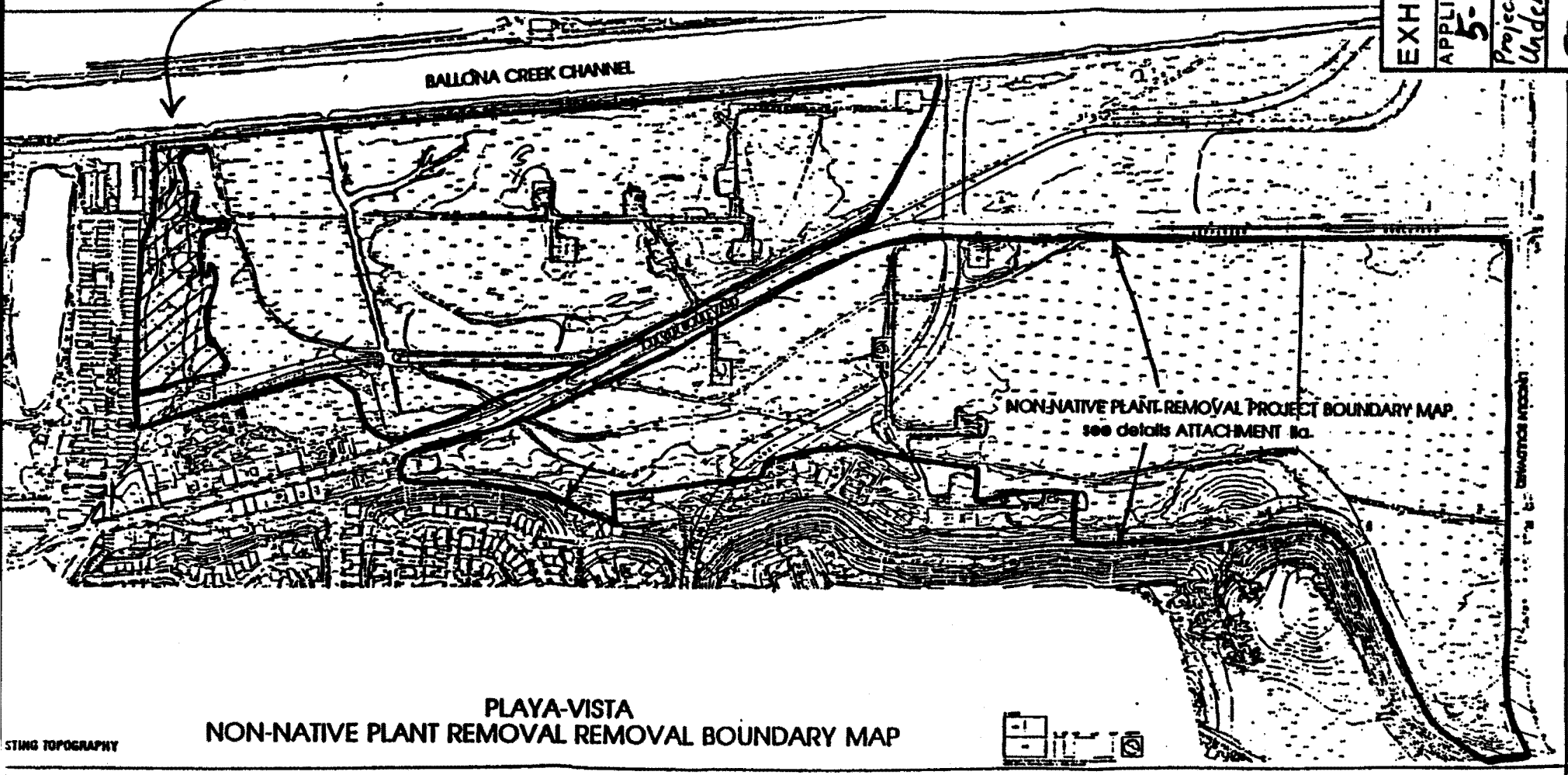
EXHIBIT NO. 4
APPLICATION NO. 5-97-147
Project Site Approved Under CDP #5-90-176
California Coastal Commission



PLAYA-VISTA
NON-NATIVE PLANT REMOVAL REMOVAL BOUNDARY MAP

STING TOPOGRAPHY

ATTACHMENT II - NON-NATIVE PLANT REMOVAL PROJECT BOUNDARY MAP

Phase 1

six months.

1. A temporary fence will be installed around the periphery of the property, excepting the east exposure, yet designed to curtail any trespass. Fencing is the only insurance against further destruction from trampling. A biologist familiar with the biota will be on site during installation.

2. An irrigation line will be installed as indicated on figure 4. A 1.5" PVC buried line will extend cross the property about 600 ', reduced to 1" for the balance. Standard hose bibbs will be provided at 100 ' intervals. The line will follow about the 6' msl contour. A biologist will be on site to supervise alignment.

3. All *Myoporum* will be cut at the base, less than 12 " above ground level, and removed from the site. Pampas grass in the dune area will be treated with an approved herbicide and allowed to die in situ for later removal.

4. Areas 1A, 1B, 1C, 2A, 2B will be completely hand cleared of non-native plant cover (115,000 sq. ft) and treated as follows.

5. The compacted foreign soil of the roadway lying between areas 2A and 2B, comprising about 40 yards, will be removed and the native sand re-contoured.

6. Annual species will be augmented by spreading an appropriate seed mix (schedule 1) following soil preparation. The same preparation will benefit the subsequent container plantings. Following clearing, the areas will be irrigated by an equivalent 1 inch rainfall. Allowing a 14 day germination period, an approved post emergent monocot specific herb (Fusillade) will be applied. Following the recommended

From Dunes Restoration Plan
Non-Native 2nd Plant Removal Plan

EXHIBIT NO. 5
APPLICATION NO. 5-97-144
Restoration & Planting Plan Approved Under CDP # 5-90-174
California Coastal Commission

period, an annual seedmix will be spread. Seeds of perennial species will be planted at the same time (schedule 2) and the area subsequently watered according to a schedule appropriate to the prevailing seasonal conditions. Depending on the season of the start of effort, seed selection may vary.

7. A total of 4537 individual native perennial plants of 15 species will be established in containers following schedule 3. They will be ready for planting before the end of phase 1. Planting will be done in patches in areas 1A, 2A, and 2B (above 6' msl) following a plan to be prepared. The plan will provide an approximate 60% cover by these and other perennial species, from planted seed and natural residual seed, when all mature in three to four years. Replacement of failed establishments and possible later plantings will ultimately provide variable cohorts of these species.

8. Clear, mark and plant a belt transect extending from the toe of the backdune to the 2' msl contour across the south edge of area 2. Use a seedmix of known aggressive species, and strand species, as a test of adaptedness to the chemical (salt) gradient which may exist in this area. Assay for soil salinity and groundwater hydrology.

9. Locate seed sources for appropriate strains of extirpated species which are not currently available.

10. Monitoring for species of concern will be started following the outline in table 2. The data will provide baseline information which will quantify responses of key organisms to habitat management. Monitoring will be continuing.

Phase 2

six months.

1. Hand clear all non-native plants from areas 1C and 2C. Hand clear all iceplant in 20 foot wide alternate swaths across the remaining areas, including a 20 foot zone along the interface of the saltmarsh.

2. The understory of areas 1C and 2C will be seeded with a mix appropriate to this habitat and the open cleared places of all areas will be seeded and planted. The number and distribution of container plants and seed mixes will be determined consequent to an analysis of the first six month effort.

3. Re-contour area 3A according to an engineered plan which will be developed. Planting schedules will be established when the program can be accurately forecast. Slopes will be stabilized by stapled jute over a layer of compost, seeded with a dense native annual cover crop and interplanted with container grown perennials as employed for area 2A.

Phase 3

six months.

1. Hand clear remaining non-native plants, essentially iceplant, from all areas.

2. Establish and set out container plants on a schedule to be determined following analysis of work performed in the first two phases. Complete revegetation of area 3B.

3. Prepare report describing work performed to date, including results of clearing and planting, monitoring and status of species of concern and all problem areas.

Schedule 3, Phase 1
Container plants requirements

Revegetation of site 1A and 2A - Dune crest and backdune which require minimal clearing and soil disturbance.
restocking of species extant on site:

Eriogonum parvifolium	550	deepots
Lupinus camissonis	400	deepots or gal
Haplopappus ericoides	15	gal

reintroduction, LAX stock

Encelia californica	35	gal
Galium angustifolia	150	deepots
Rhus integrifolia	16	gal
Isomeris arborea	32	deepots
Eschscholtzia californica	250	bands
Cardionema ramossisima	150	bands
Calystegia macrostegia	150	bands
Astragalus lecucopsis	150	bands
Corethrogyne filaginifolia	300	bands
Senecio douglasii	150	bands
Melica imperfecta	500	bands
Elymus triticoides	4	gal
Opuntia littoralis	4	direct from cuttings

Revegetation of site 2B, following clearing the total iceplant cover.
restocking of species extant on site:

Eriogonum parvifolium	50	deepots
Lupinus camissonis	200	deepots or gal
Haplopappus ericoides	25	gal

reintroduction, LAX stock

Encelia californica	40	gal
Galium angustifolia	150	deepots
Rhus integrifolia	20	gal
Isomeris arborea	40	deepots
Eschscholtzia californica	400	bands
Cardionema ramossisima	100	bands
Calystegia macrostegia	100	bands
Astragalus lecucopsis	200	bands
Corethrogyne filaginifolia	300	bands
Senecio douglasii	100	bands
Opuntia littoralis	8	direct from cuttings

total containers **4537**

Schedule 1

Perennial seeds which will be individually planted.

(L) signifies species available from the LAX dunes. (B) signifies species found in the Ballona area, but not necessarily on the sand dunes. Unmarked species occur at neither locality.

Sidalacea malvaeflora malvaeflora
Mirabilis laevis
Pholisma paniculata (??)
Cirsium occidentalis (L)
Stipa cernua (L)
Dudleya lanceolata (L)
Dichlostemma pulchella (L)
Gnaphalium bicolor (B)
G, microcephalum (B)
Erysimum suffrutescens (B)
Corethrogyne filaginifolia (B)
Phacelia ramosissima (B)
Datura wrightii (B)
Solanum douglasii (B)

Schedule 2

Annual seeds which will be spread. Quantities will depend on availability.

Includes meadow species which will initially be used only for testing.

Ambrosia acanthicarpa (B)
Rafinesquia californica (B)
Senecio californicus
Plantago erecta (L)
Calandrinia maritima (B)
Amsinckia intermedia
Astragalus tener titi
Descurainea pinnata (L)
Cryptantha clevelandii (L)
Linaria canadensis (L)
Chorizanthe californica (L)
Calyptridium monandrum (L)
Mentzelia gracilenta (L)
Orthocarpus purpurascens
Microseris heterocarpa
Phacelia distans
Phacelia douglasii
Chaenactis glabriuscula (B)
Cryptantha intermedia (B)
Camissonia bistorta (B)
C. lewisii (B)
C. micrantha (B)
Lotus purshianus (B)
Eriogonum gracile (B)
Lepidium lasiocarpum (B)
Lupinus bicolor (B)
L. truncatus (B)
Festuca megalura (B)
Crassula erecta (B)
Lotus strigosus (B)

BALLONA WETLANDS
PLAYA DEL REY SAND DUNES SITE
GENERAL HABITAT MONITORING PLAN

Small mammals will be enumerated by routine live trapping with Sherman 3.5 inch traps. These will be deployed, 40 per trap night, following the transect designated TL 10 by Friesen et al. (1981) for the County Museum survey. The only animals taken at TL 10 during that survey were harvest and house mice. Trapping will be conducted monthly with all animals recorded and released.

The legless lizard population will be estimated preferably by counting the distinctive sinusoidal tracks they leave after night time wandering in spring and summer. Positive collecting data from screening would be too destructive in the limited habitat of Playa del Rey.

Invertebrate animals, largely insects, are the little things in ecosystems that make the world go around. They comprise the bulk of the herbivores and primary detritivores in most terrestrial communities. Although not as obvious to the human observer as mammals, birds and reptiles, they mirror, with plants, key indicators of the biological health of these communities. Insects and other arthropods will provide the most comprehensive quantitative information on the state of the dunes ecosystem. In addition to those species which will be enumerated from the pitfall traps, described in detail in the next section, regular transects over a set path will be walked weekly by the same experienced entomologist and every species of concern tabulated. A standardized line of sight will validate comparative densities. Because of specific flight periods, the transect walks will be done almost year round. The candidate endangered wandering skipper butterfly can be monitored in this manner. Live information will also

- The El Segundo goat moth will be monitored from a malaise trap which will be set up once security is provided. This unique endemic appears to have a biennial life cycle, with emergence predicted in 1990. It has not been recorded from the site, but should be expected, particularly after augmentation of its foodplant.

- The undescribed El Segundo crab spider can be quantified from standardized sweeping across its usual haunts on the flowerheads of buckwheat and false heather during the autumn.

- The *Onychobaris sp.* weevil has only been reported once. Before any counting scheme can be formulated, it will be first necessary to find out more of its biology.

In general, resources are so depleted many expected insects may no longer be present. Until such time as the re-vegetation is established, insect populations may remain poor. Whatever values obtained will be significant, however, when compared to those obtained in later years, once a native flora is in place.

The flora will be initially monitored by at least two approaches. The keystone coastal buckwheat plants will be individually tagged with cover size and number of flowerheads estimated each fall. The suncup and Pursh's lotus will be counted across a belt transect which will be established in site 2 to give an estimate of status of native annuals. Depending on rate of recovery, other species may later be included in a monitoring program. When the planting schedules are implemented, all extant perennial plants will be recorded on a grid system map. If later follow-up is indictated for any of the included species, quantitative information will be available.

GROUND DWELLING INVERTEBRATE MONITORING PLAN

Background

Although the invertebrate community of the dunes area has not been quantitatively assessed, some qualitative information is available from an earlier survey (see Schreiber, 1981) in addition to more complete data from the nearby El Segundo sand dune fragment at LAX (Mattoni 1990). Prior to and concurrent with restoration of the Playa del Rey site, a comprehensive quantitative survey of ground dwelling invertebrates should be implemented to establish both status and changes in this fauna. The goal can be simply met in a cost effective manner using pitfall traps. The procedures and analytic methods have all been developed and extensive background data from the nearby LAX El Segundo sand dunes is available for comparitive study.

Methods and materials

Pitfall trapping will be implemented using 32 oz plastic cups buried in a manner that the lip of the cups are flush with ground level. During their active period, small ground dwelling animals, mostly insects, fall into the traps. Small aliquots of glycol (anti-freeze) in the traps preserve the material between collections and the traps are covered with plywood roofs to preclude rain and debris from contaminating contents. The traps are serviced at bi-weekly intervals with all contents preserved and classified.

The survey at LAX yielded 156 species of insects, spiders, mites, scorpions, millipeds, centipedes, opilionids, and other arthropods. Species densities varied from 13,000 to several uniques over a one year period. The data base and analytic procedures from that survey have been developed and are available. Identification of the collected material can additional seven species which are expected to occur at

be accurately conducted from the comparative key material available.

A total of 20 traps is proposed. These will be placed in four groups of five each: one set in the relatively undisturbed backdune site (e.g. *Eriogonum parvifolium* cluster), another set in the willow groves, a third set in the dense iceplant cover, and the last set at the dunes/*Distichlis*/saltmarsh interface. Although this low number of traps may not provide statistical confidence in testing between site variance for most species, the trap number must be limited because of very small surviving population sizes of many species and the danger of the trapping itself placing such organisms in peril. Furthermore, until some quantitative testing is undertaken to provide order of magnitude estimates, an experimental sampling program cannot be designed. The complete data of Mattoni (loc.cit.) is available for comparative purposes.

Results and conclusions

The most valuable conclusion from the Playa del Rey study, in addition to the intrinsic worth of species diversity, will be comparison with the LAX populations. Although the LAX dunes communities have been highly impacted by habitat modification, those at Playa del Rey are probably far more depauperate and modified by the presence of exotic species. The magnitude of these differences can only be inferred from quantitative study.

Significance

The study will provide a record of ground dwelling invertebrates endemic to the El Segundo sand dunes, and hence in theory subject to listing as endangered species. At least two of these species, The El Segundo jerusalem cricket and Dorothy's El Segundo weevil have been found recently. An additional seven species which are expected to occur at

Ballona are restricted to southern California dunes and should be considered endangered. Background information sheets on the two known endemics are attached.

Any meaningful evaluation of the success of restoration must consider species diversity beyond the obvious floral and visible faunal components. There is widespread confusion over the meaning of restoration, with the usual view that it is largely "putting the plants back". With increasing public awareness and support of a need to correct past habitat destruction, a thoughtfully implemented Playa del Rey exemplar could accomplish a great deal for public education in providing an insight of what an ecosystem really is.

Although it is unfortunate quantitative studies were not initiated prior to the present time, given the apparent rapid deterioration of habitat values as has recently been reflected in the flora, there is every reason to proceed with the study at once.

Reports and personnel

Semi annual formal reports will be supplied with summarized data outputs available at any time.

R. H. T. Mattoni will be program director. Fieldwork, curation of material and identifications will be performed by R. Rogers. Data management and analysis will be performed by C. Mattoni. W. Van Antwerp developed the appropriate data management techniques. This is the same group responsible for the LAX sand dune survey.