



RANCHO PALOS VERDES

NATURAL COMMUNITIES CONSERVATION PLANNING SUBAREA PLAN

Prepared for

City of Rancho Palos Verdes

URS Project No. 27644296.08000

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URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4314
619.294.9400 Fax: 619.293.7920

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List of Acronyms and Abbreviations

ACOE	U.S. Army Corps of Engineers
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
CE	State of California-listed endangered species
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHP	Chaparral
CNDDB	California Natural Diversity Data Base
CR	State of California-listed rare species
CSS	Coastal Sage Scrub
CT	State of California-listed threatened species
ESHA	Environmentally Sensitive Habitat Area
FE	Federally endangered species
FESA	Federal Endangered Species Act
RA	Focused Planning Area
FT	Federally listed threatened species
HCP	Habitat Conservation Plan
LCP	Local Coastal Plan
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
NCCP	Natural Community Conservation Plan (State Initiative)
NEPA	National Environmental Policy Act
PE	Proposed for Federal listing as endangered species
PT	Proposed for Federal listing as threatened species
PUMP	Public Use Master Plan
PVPLC	Palos Verdes Peninsula Land Conservancy
RTP	Reserve Trail Plan
SAP	Subarea Plan
SSC	State of California species of special concern
SPA	Specific Planning Area
SPCA	Society for the Preservation of Cruelty to Animals
ssp.	Subspecies
USFWS	United States Fish and Wildlife Service

SECTION 1 INTRODUCTION

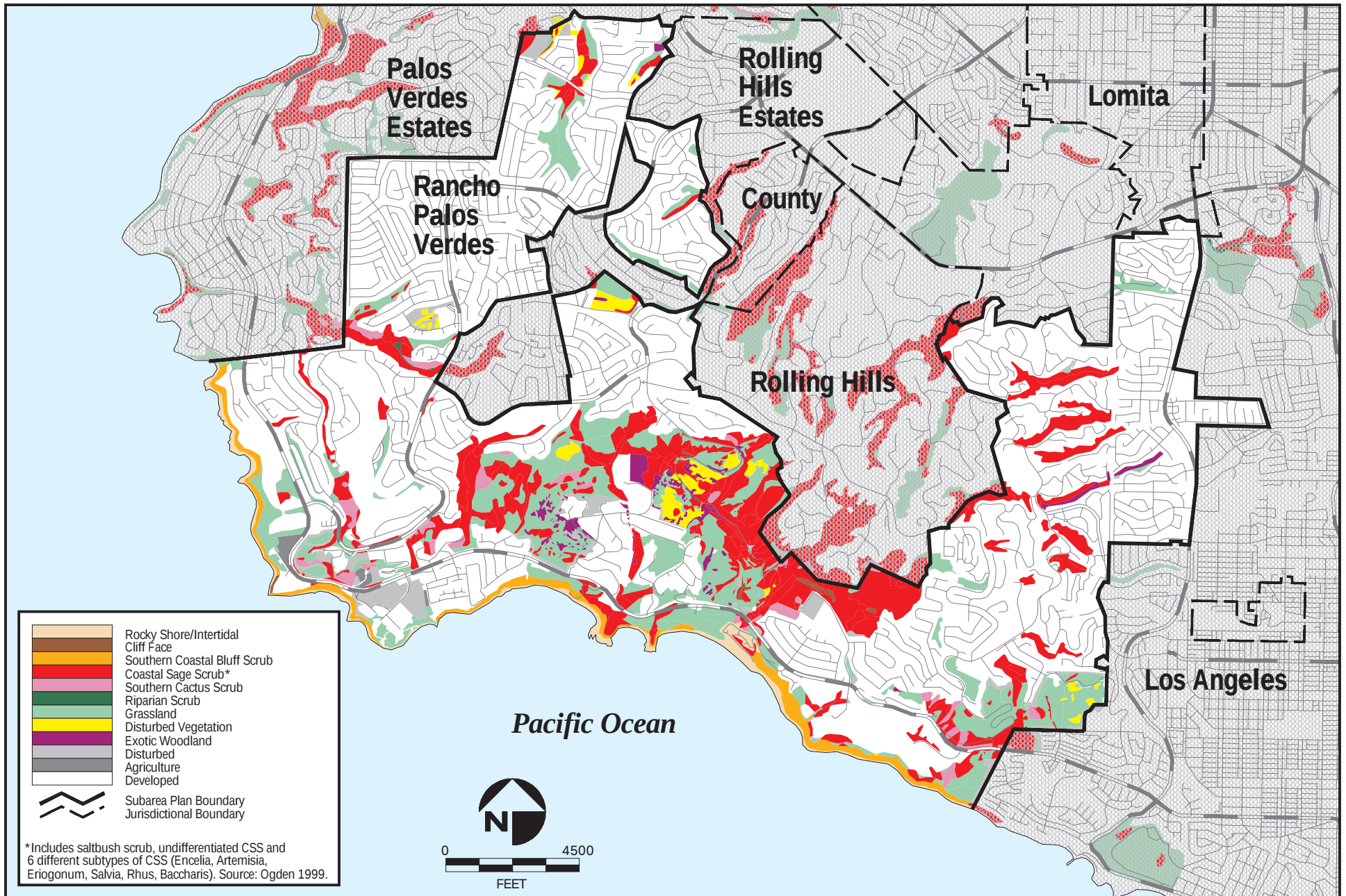
The Natural Communities Conservation Planning Act of 1991 (NCCP, California Fish and Game Code Section 2800, et seq.) provides for the preparation and implementation of large-scale natural resource conservation plans. An NCCP plan must identify and provide for the regional or area-wide protection and perpetuation of natural wildlife diversity while allowing for compatible and appropriate development and growth. An NCCP plan is intended to provide comprehensive management and conservation of multiple species, including but not limited to species listed under state or Federal Endangered Species Acts (ESA).

The NCCP Act is intended to promote cooperation and coordination among public agencies, landowners, and other interested organizations or individuals. The City of Rancho Palos Verdes (City) has entered into an NCCP planning agreement with the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) to develop an NCCP Subarea Plan that will encompass the entire City. The NCCP subregion includes the entire Palos Verdes Peninsula; however, only Rancho Palos Verdes has currently entered into an NCCP planning agreement. The remaining Palos Verdes Peninsula cities have been encouraged to formally participate in the Peninsula NCCP process.

As the lead agency of the Palos Verdes Peninsula NCCP, the City needed to develop a landscape scale database of biological resource and land-use information in a way that would allow for the City and Wildlife Agencies to make informed land-use and conservation decisions for future projects. The primary goal of the Phase I program was to provide a biological analysis of the remaining naturalized open space in and adjacent to the City. At the initiation of Phase I of the Peninsula NCCP program, questions regarding the regional importance of parcels to a potential biological reserve system were outstanding (Ogden 1999). Syntheses of vegetation mapping, sensitive-species distributions and their potential habitat, and the preliminary development of alternative reserve designs were the primary focus of the Phase I effort (Figures 1-1 and 1-2). Three alternatives reserve designs were developed to span the range of potential designs that are biologically appropriate. Alternatives A and B were rejected for a variety of reasons and the City's Alternative C was initially a compromise between the other two alternatives.

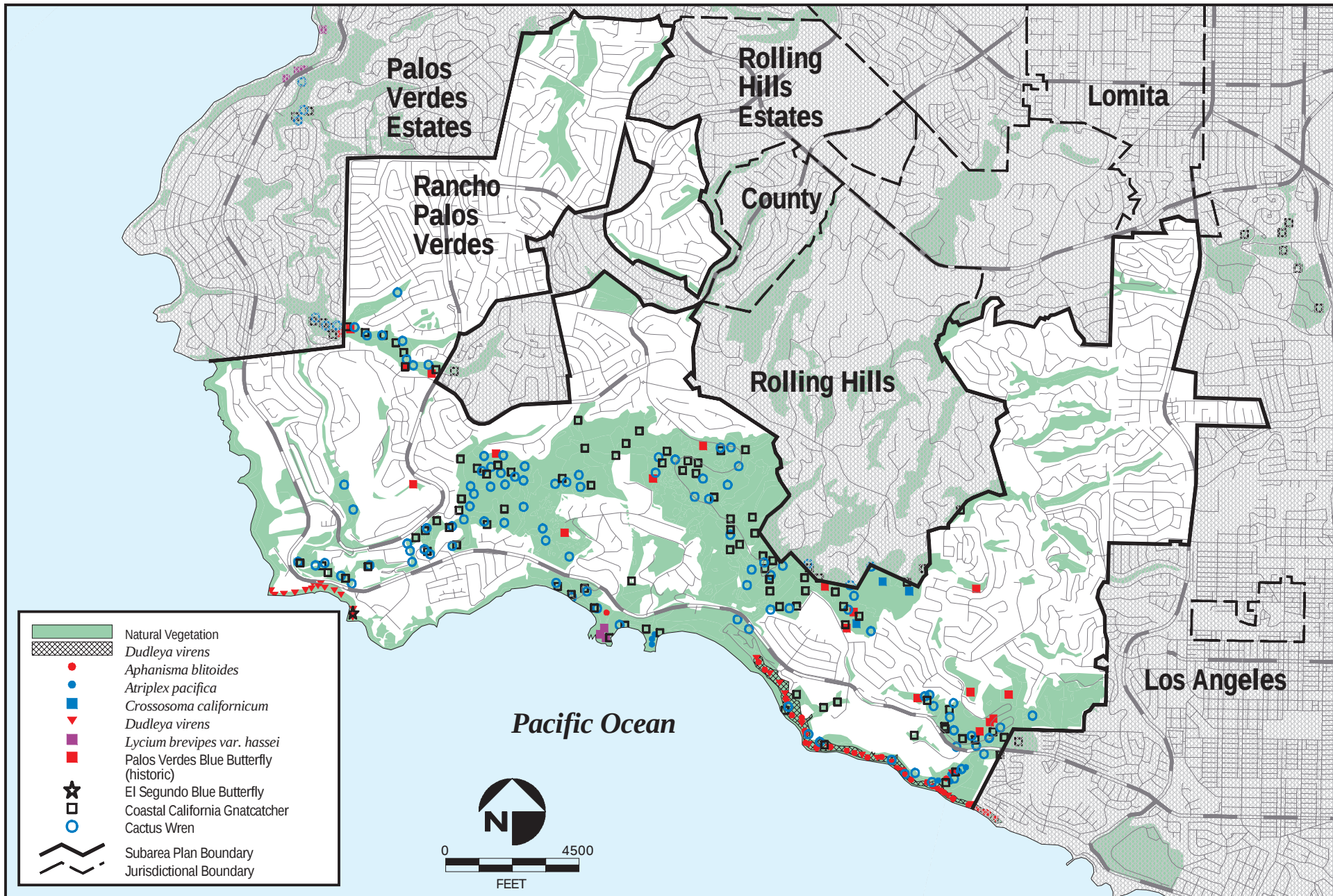
The Phase II program refined the City's alternative reserve design and the development of the draft Subarea Plan for agency and public review and comment. Based on extensive discussions with the Wildlife Agencies and the NCCP Rancho Palos Verdes working group and evaluations of potential development on the largest properties supporting natural vegetation, the City has decided to emphasize acquisition of key private properties and conservation of existing habitats on City-owned lands as the primary form of conservation.

Habitat restoration of disturbed areas in conserved areas will be a secondary form of conservation, with a required minimum level of restoration and enhancement to be accomplished each year. Having a restoration program in place will allow additional restoration to be accomplished as additional funding sources are identified. The Palos Verdes Peninsula Land Conservancy (PVPLC) will be the Habitat Manager for the Rancho Palos Verdes Habitat Reserve. A significant portion of the undeveloped lands in Rancho Palos Verdes support nonnative plant communities that, pending available funds, will be restored to native plant communities to increase the local habitat carrying capacity of selected covered species. The restoration potential of these degraded lands was assessed during the Phase I program to allow for prioritization of restoration efforts within the context of the proposed reserve design.



FIGURE

1-1



FIGURE

1-2

1.1 PURPOSE AND NEED

The City of Rancho Palos Verdes (City) NCCP Subarea Plan (Subarea Plan) has been prepared to maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within the city and region (Figure 1-1) pursuant to the requirements of the Natural Communities Conservation Planning Act of 1991 (NCCP, California Fish and Game Code Section 2800, *et seq.*). This Subarea Plan provides for the comprehensive management and conservation of multiple species, including but not limited to species protected under the State or Federal Endangered Species Act (ESA).

An important benefit of this Subarea Plan is that the habitat conservation and management actions will compensate for the impacts of current and future development needs within the city. As intended by the NCCP Act, implementation of this Subarea Plan will facilitate cooperation and coordination among public agencies, landowners, and other interested organizations.

This Subarea Plan identifies habitat to be conserved in the City's proposed Reserve, the mechanism for this conservation (e.g., acquisition and easement), and interim protection measures for habitats not expected to be ultimately conserved. This Subarea Plan establishes actions the City will take to obtain ESA Section 10(a) take authorizations for covered species, including current and future management, maintenance, and compatible uses (e.g., passive recreation) of conserved lands, as well as funding for habitat management. The process for mitigating development on habitat not conserved, and how permits and take authorizations for covered species will be obtained, is also identified. These considerations form the basis for developing an Implementing Agreement with the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) (Wildlife Agencies). In this manner, the authority for infrastructure development and land-use decisions is to be retained by the City, and will be enhanced by its ability to self-issue endangered species take authorizations.

Through implementation of this Subarea Plan, the City has considered regional planning before conducting site-specific project proposals. In this manner, individual project impacts can be analyzed in a regional context. The City will coordinate with adjacent jurisdictions to maximize shared conservation benefits. Although the NCCP subregion includes the entire Palos Verdes Peninsula, the City of Rancho Palos Verdes is currently the only jurisdiction in the subregion to enter into an NCCP planning agreement with the Wildlife Agencies.

The City's primary conservation strategy is to acquire several key privately owned parcels, dedicate selected City-owned lands, and have the Palos Verdes Peninsula Land Conservancy manage this reserve network with the assistance of the City and the Wildlife Agencies. The proposed Reserve is designed to be consistent with NCCP conservation and management standards and guidelines and the issuance criteria for ESA Section 10(a) take authorizations for species covered by the city-wide permit. The Reserve conserves regionally important habitat areas and provides adequate habitat linkages between patches of conserved habitat. Based on a habitat restoration plan to be approved by the Wildlife Agencies, the City and the PVPLC will enhance/restore the most practicable amount of disturbed habitats within the Reserve. To enhance habitat patch size and habitat linkage function (i.e., areas with moderate to high potential for successful restoration), this plan will emphasize habitats directly adjacent to conserved habitat.

1.2 REGULATORY COMPLIANCE OF THE SUBAREA PLAN

1.2.1 Federal

The USFWS has the legal authority to issue permits and enter into Subarea Plan implementing agreements based on completion of the subregional NCCP and pursuant to the ESA, Fish and Wildlife Coordination Act (16 U.S. Code [USC], Sections 661 to 666c), and Fish and Wildlife Act of 1956 (16 USC Section 742(f) et seq.). Section 10(a)(1)(B) of the ESA, 16 USC Section 1539(a)(1)(B), expressly authorizes the USFWS to issue a Section 10(a) permit to allow incidental take of species listed as threatened or endangered under the ESA. The legislative history of 10(a)(1)(B) clearly indicates that Congress also intended that the USFWS would approve Habitat Conservation Plans (HCP) that protect unlisted species as if they were listed under the ESA, and that in doing so the USFWS would provide Section 10(a)(1)(B) assurances for protection of such unlisted species (H.R. Rep. No. 97-835, 97th Cong., 2d Sess. 30-31, 1982. Conference Report on 1982 Amendments to the ESA). The USFWS routinely approves HCPs that address both listed and unlisted species.

The Secretary of the Interior set forth the “Habitat Conservation Plan Assurances Policy” on August 11, 1994, which became a final rule on February 23, 1998 (Federal Register 63[35]:8859-8873). Also known as the “No Surprises” policy, the policy provides regulatory assurances to holders of HCP incidental take permits.

Approval and implementation of the Subarea Plan will facilitate compliance with Section 10(a)(1)(B) of the Federal ESA. Through this planning process, the City will obtain ESA Section 10(a) incidental take authorizations. A “take” includes the direct killing, harming, or harassing of a species, or destruction of habitat that may be important for the species’ survival or recovery. The take permit authorizes take by the City as long as it does not violate the terms and conditions established by the City’s Implementing Agreement with the Wildlife Agencies. This Subarea Plan is the basis for this agreement.

The Subarea Plan also provides the City the benefits of the Section 4(d) rule associated with the listing of the threatened coastal California gnatcatcher. This special rule under Section 4(d) of the ESA, streamlines the Wildlife Agencies permitting for development in CSS habitat areas that does not preclude regional conservation options. This rule allows for a limited amount of incidental loss of CSS habitat while this Subarea Plan is being developed and processed.

Permits issued pursuant to this Subarea Plan do not include Army Corps of Engineers (ACOE) 404 permit, 401 water quality certification, or CDFG 1602 permits for impacts to wetlands. This Subarea Plan, however, shall largely fulfill the requirements for endangered species consultation relative to wetland permitting. This Subarea Plan provides the basis for ESA Section 7 consultation and issuance of a Biological Opinion by the USFWS for ACOE 404 permits within this Subarea Plan area. Thus, approval of this Subarea Plan should streamline the endangered species consultation process for wetland permits.

1.2.2 State

The Natural Communities Conservation Planning Act (NCCP Act; Section 2800 et seq. of the California Fish and Game Code) establishes the NCCP program “to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and

growth.” The NCCP Act calls for the preparation of subregional and Subarea Plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time. The CDFG and California Resources Agency prepared the “Southern California Coastal Sage Scrub NCCP Process Guidelines” (November 1993). Based on the definition established by the guidelines and the precedent established through acceptance of subregional plans prepared by local general purpose agencies, this Subarea Plan meets the requirements and standards of the NCCP program. Approval and implementation of the Rancho Palos Verdes Subarea Plan will secure City compliance with and be consistent with, Section 2081 of the California Endangered Species Act (CESA) and Section 2835 of the NCCP Act in the California Fish and Game Code.

In addition to Fish and Game regulations, this plan is also intended to be consistent with the City’s Local Coastal Plan and California Coastal Act regulations (California Code of Regulations Title 14, Section 30000, *et seq.*) for lands within the Coastal Zone.

1.2.3 Local

Implementation of this Subarea Plan will rely on the City’s land-use authority provided through General Plan policies, Local Coastal Program, zoning ordinances, community plan amendments, and environmental land-use regulations.

1.3 SPECIES FOR WHICH TAKE AUTHORIZATIONS ARE REQUESTED

This Subarea Plan is intended to provide for the take of covered species and their habitats associated with developments. Take authorizations are requested by the City for the following federally protected species: endangered Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*), endangered El Segundo blue butterfly (*Euphilotes battoides allyni*), threatened coastal California gnatcatcher (*Poliophtila californica californica*), and endangered Lyon’s pentachaeta (*Pentachaeta lyonii*). Lyon’s pentachaeta is the only species listed by the CDFG under the State ESA currently known to occur near this Subarea Plan Area. Take authorization is requested for eight additional covered species not currently listed under the State or Federal ESA that have specific known locations in the city and would have sufficient levels of conservation under this Subarea Plan. These species include the California Native Plant Society (CNPS) Lists 1B and List 4 plants and the cactus wren (*Campylorhynchus brunneicapillus*), a State Species of Concern (SSC) that is also a NCCP focal species. Species covered by this Subarea Plan are identified in Table 1-1.

**Table 1-1
Proposed Covered Species List for
the RPV Subarea Plan**

Status	Common Name	Scientific Name
CNPS List 1B	Aphanisma	<i>Aphanisma blitoides</i>
CNPS List 1B	South Coast Saltscale	<i>Atriplex pacifica</i>
CNPS List 4	Peirson's Morning-glory	<i>Calystegia peirsonii</i>
CNPS List 1B	Southern Tarplant	<i>Centromadia paryi</i> ssp. <i>australis</i>
CNPS List 4	Catalina Crossosoma	<i>Crossosoma californicum</i>
CNPS List 1B	Bright Green Dudleya	<i>Dudleya virens</i>
CNPS List 1B	Santa Catalina Island Desert-thorn	<i>Lycium brevipes</i> var. <i>hassei</i>
FE, CE, CNPS List 1B	Lyon's Pentachaeta	<i>Pentachaeta lyonii</i>
CNPS List 4	Woolly Seablite	<i>Suaeda taxifolia</i>
FE	Palos Verdes Blue Butterfly	<i>Glaucopsyche lygdamus palosverdesensis</i>
FE	El Segundo Blue Butterfly	<i>Euphilotes battoides allyni</i>
FT	Coastal California Gnatcatcher	<i>Polioptila californica californica</i>
SSC	Cactus Wren	<i>Campylorhynchus brunneicapillus</i>

FE – Federally endangered

FT – Federally threatened

CE – State of California endangered

SSC – State Species of Concern

CNPS List 1B – Plants, rare, threatened, or endangered in California and elsewhere

CNPS List 4 – Plants of limited distribution -- a watch list

SECTION 2 DESCRIPTION OF RPV SUBAREA**2.1 REGIONAL SETTING**

The 13.6-square-mile coastal community of Rancho Palos Verdes is on the southwest side of Palos Verdes Peninsula (Peninsula). It is bounded on the north by Rolling Hills, Rolling Hills Estates and Palos Verdes Estates and to the east by San Pedro with the high-density urbanized core of South Bay communities farther to the north (Figure 2-1).

Beginning in the early 1900s, the Peninsula enjoyed prosperity as a cattle ranch and rich farming area. By 1913, the residential future of Palos Verdes was envisioned as the “most fashionable and exclusive residential colony” in the nation. The 1940s saw 300 acres of the northern Peninsula used for mining of diatomaceous earth. Municipal incorporations occurred in 1939 and 1957, with the founding of Palos Verdes Estates, Rolling Hills and Rolling Hills Estates.

Residents in the remaining unincorporated area soon became aware that the only way to preserve the environment and to gain control over local zoning issues was to incorporate as a fourth city. The drive for incorporation of the fourth city intensified in February 1970 with the election finally held on August 28, 1973. An overwhelming majority of 5 to 1 voted in favor of incorporation of Rancho Palos Verdes (City). All citizens elected to the first City Council ran on similar platforms of low-density land uses, minimum taxes, and responsiveness to residents.

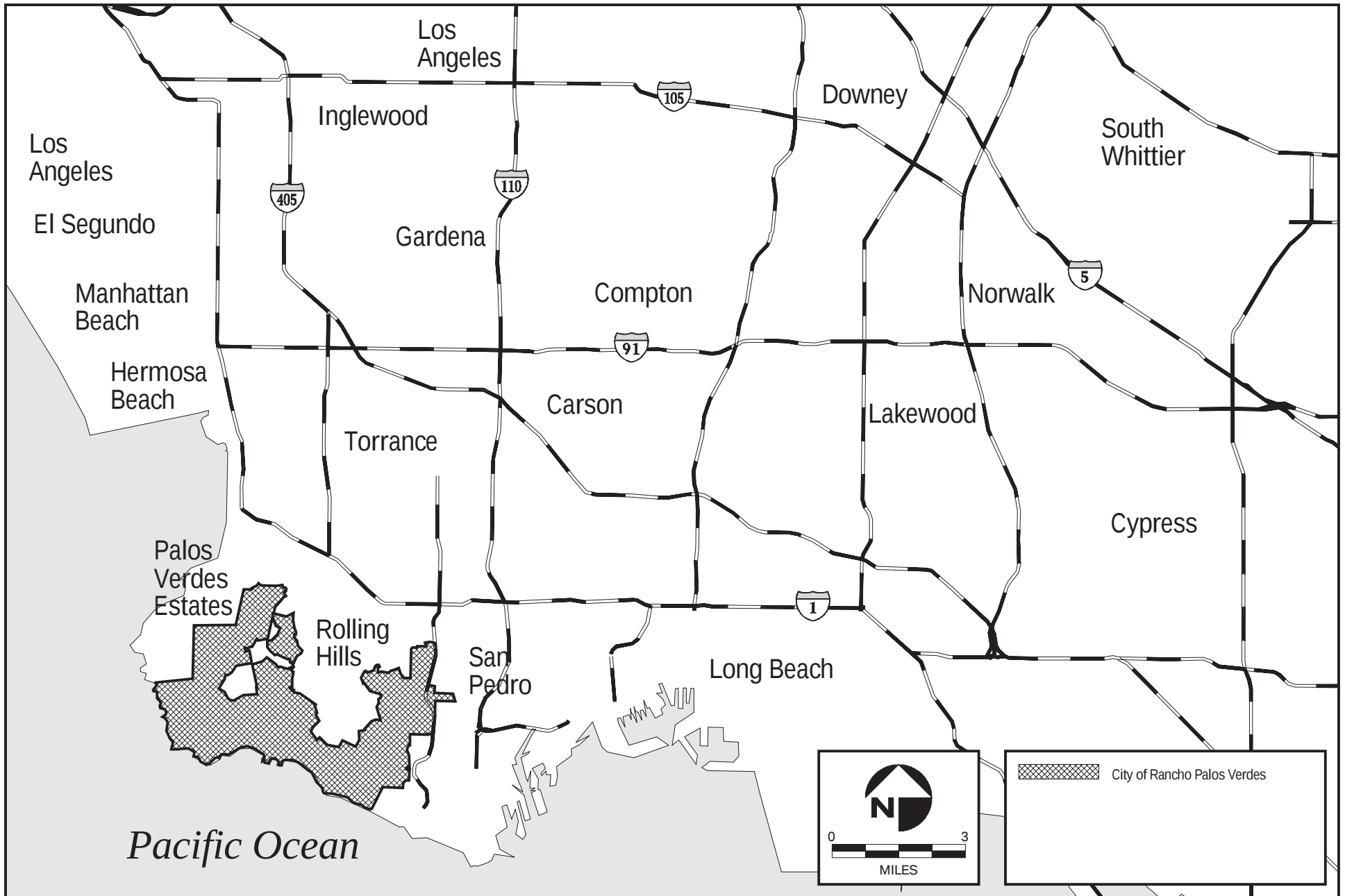
These principles still guide the City today with the resulting land uses dominated by single family detached dwellings, scattered higher density residential, and neighborhood-oriented commercial. Industrial activities are excluded on the Peninsula (Figure 2-2). The 40,000 people comprising the bedroom community are predominantly employed at Los Angeles harbor and in the space and high technology industries in nearby cities.

2.1.1 City of Rancho Palos Verdes Municipal Code

As a regulatory document, the Municipal Code provides another layer of environmental protection (either directly or indirectly) to lands located in the preserve. Each cited section of the Code in effect at the time of adoption of the Subarea Plan by the city addresses a different aspect of environmental protection.

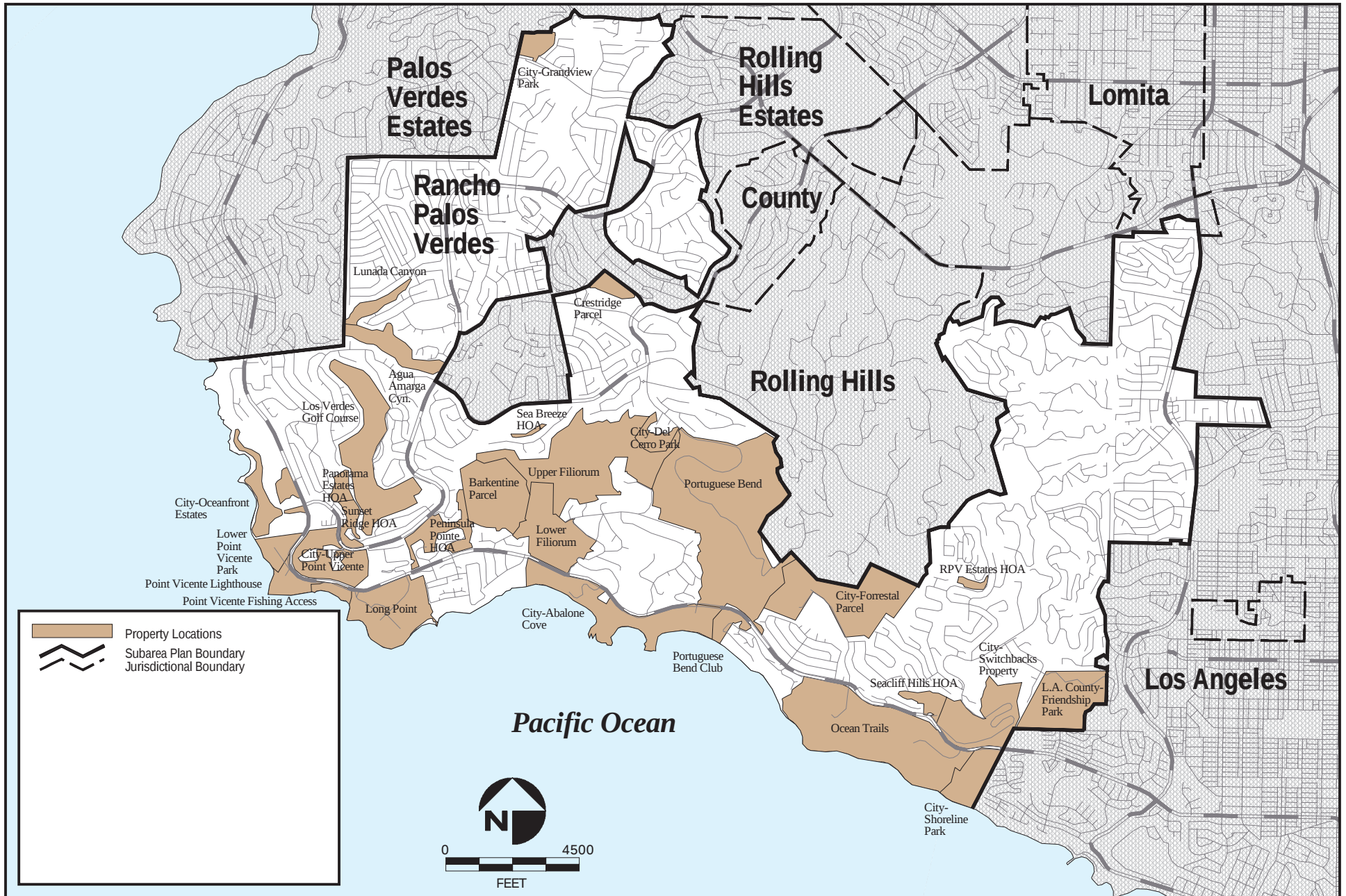
Title 3, Chapter 20, Section 010 establishes an Environmental Excise Tax:

In that construction of new residential living units and of new commercial or industrial structures within the city creates an immediate and present danger to the existing quality of life and ecology of the city and threatens to contaminate and pollute the air, water and land within and surrounding the city...[therefore] the imposition and collection of a special, nonrecurring tax upon the occupancy and construction of new residential dwelling units and of new commercial and industrial buildings within the city is the most practical and equitable method of providing revenues with which the city may meet and deal with and solve the serious ecological and environmental problems created by the occupancy and construction of such facilities within the city.



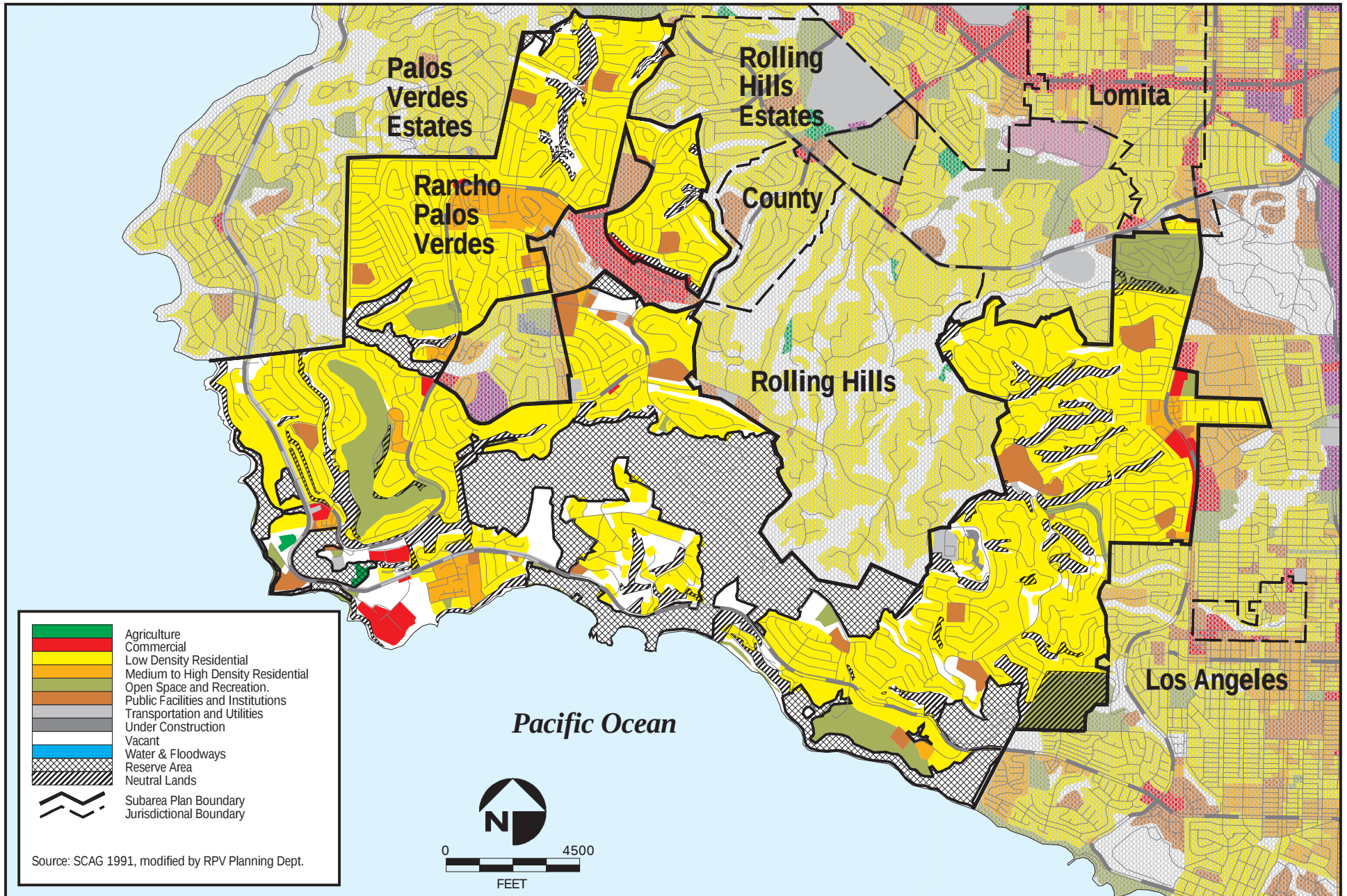
FIGURE

2-1



FIGURE

2-2



FIGURE

2-3

Title 13 Chapter 10, Section 010 – 070:

Establishes standards and procedures for reducing pollutants in storm water discharges into preserve areas to the maximum extent practicable by; regulating illicit connections and illicit discharges and thereby reducing the level of contamination of storm water and urban runoff into the municipal storm water system; and regulating non-storm water discharges to the municipal storm water system; and setting forth requirements for the construction and operation of certain commercial development, new development and redevelopment and other projects) that are intended to ensure compliance with the storm water mitigation measures prescribed in the current version of the Standard Urban Storm Water Mitigation Plan (SUSMP) approved by the Regional Water Quality Control Board.

Title 15 Chapter 34, Section 010:

Establishes standards and procedures for the design, installation and management of water-conserving landscapes thereby reducing problems of over-watering and the resultant change in hydrologic regimes in adjacent more xeric preserve lands.

Title 17, Chapter 32, Section 010:

Establishes open-space hazards districts that provide the regulatory foundation for many lands located in the preserve.

Title 17, Chapter 32, Section 020:

Requires that lands [such as those found in the preserve] be placed in the open-space hazard district when the use of said land would endanger the public health, safety and welfare. Open-space hazard districts shall include the following:

- A. Areas where the existing natural slope exceeds 35 percent, areas experiencing downslope movement, areas unstable for development, areas where grading or development of the land may endanger the public health and safety because of erosion or flooding, and the ocean bluffs; and
- B. Areas subject to flooding or inundation from stormwater.

Title 17, Chapter 32, Section 030

Stipulates that land in open-space hazard districts in the preserve may be used (provided, that the applicable natural overlay control district performance criteria is satisfied) for:

The preservation of areas of outstanding scenic, geologic, historic or cultural value; the preservation of natural resources, including but not limited to plant and animal life; and the conservation of water supply land, including but not limited to watershed and groundwater recharge areas.

Title 17, Chapter 40, Section 040

Establishes the natural overlay control district to:

1. Maintain and enhance land and water areas necessary for the survival of valuable land and marine-based wildlife and vegetation; and

2. Enhance watershed management, control storm drainage and erosion, and control the water quality of both urban runoff and natural water bodies within the city.

This overlay district identifies the following lands and waters included in this district:

1. All lands identified in the natural environment element of the general plan under category RM-5 (Old Landslide Area) and all lands identified in the coastal-specific plan under categories CRM-3 (Hazard), CRM-4 (Marginally Stable) and CRM-5 (Insufficient Information);
2. All lands identified in the natural environment element of the general plan under category RM-6 (Hydrologic Factors); and all lands identified in the coastal-specific plan under categories CRM-7 (Flood/Inundation Hazard) and CRM-8 (Hydrologic Factors), including all identified major and minor natural drainage flows, storm channels and storm drains existing on April 25, 1975, the effective date of Ordinance No. 78 of the city, storm channels and drains proposed after that date, and outfall areas;
3. All water areas identified in the natural environment element of the general plan under category RM-7 (Marine Resource), including all intertidal marine resources, tide pools, and the ocean waters and bottom within the projected boundaries of the city to the legally established, 3-mile offshore limit, and all ocean beaches, bluffs and cliffs;
4. All lands identified in the natural environment element of the general plan under category RM-8 (Wildlife Habitat) and lands identified in the coastal-specific plan under category CRM-9 (Wildlife Habitat);
5. All lands identified in the natural environment element of the general plan under category RM-9 (Natural Vegetation) and all lands identified in the coastal-specific plan under category CRM-10 (Natural Vegetation), also including such areas as are within category RM-8 (Wildlife Habitat) described in this section; and
6. All such lands and water areas that may be added to any of the above categories, pursuant to Chapter 17.68 (Zone Changes and Code Amendments).

These lands are to be maintained in compliance with the following criteria:

1. Cover or alter the land surface configuration by moving earth on more than 10 percent of the total land area of the portion of the parcel within the district, excluding the main structure and access;
2. Alter the course, carrying capacity or gradient of any natural watercourse or drainage course that can be calculated to carry over 100 cubic feet per second once in 10 years;
3. Fill, drain or alter the shape or quality of any water body, spring or related natural spreading area of greater than 1.0 acre;

4. Develop otherwise permitted uses within 50 feet of the edge of a watercourse or drainage course that can be calculated to carry more than 500 cubic feet per second once in 10 years;
5. Clear the vegetation from more than 20 percent of the area of the portion of the parcel within the district, or remove by thinning more than 20 percent of the vegetation on the parcel, excluding dead material and excluding brush-clearance activities necessary for fire protection;
6. Use herbicides to control or kill vegetation;
7. Remove vegetation within a designated wildlife habitat area;
8. Cover more than 20 percent of a parcel known to contain sand, gravel or other materials that may aid in natural beach replenishment;
9. Alter the characteristics of the surface soils to allow surface water to stand for over 12 hours; make the soil inadequate as a bearing surface for pedestrian, equestrian, bicycle or motorized emergency vehicle access; make the soil unstable and subject to sliding, slipping, or water or wind erosion;
10. Result in chemicals, nutrients or particulate contaminants or siltation being discharged, by stormwater or other runoff, into a natural or manmade drainage course leading to the ocean or any other natural or manmade body of water;
11. Propose a sewer or wastewater disposal system involving the spreading, injecting or percolating of effluent into the ocean or into the soil of a natural or manmade drainage course, if alternative locations are available;
12. Alter, penetrate, block or create erosion or significant change of the area within 100 feet of an ocean beach or top edge of an ocean bluff or cliff;
13. Alter, penetrate, block or create erosion on the shoreline measured at mean high tide or alter the characteristics of the intertidal marine environment;
14. Alter, dredge, fill or penetrate by drilling, the ocean floor within the jurisdiction of the city; or
15. Alter any land area that has previously experienced massive downslope movement, to reactivate or create conditions that could lead to the reactivation of downslope movement.

Title 17, Chapter 40, Section 050:

Establishes the socio-cultural overlay control district to provide protection for archaeological and paleontological sites.. Development in the socio-cultural overlay control district shall not:

1. Result in the blockage or impeding of views and controlled physical access by easement or passage to land and water areas, as well as improvements, covered by this chapter when such views or access are deemed critical to the historical, archaeological, paleontological, scientific, or educational value of the designated site, areas, or improvement.
2. Be related to development of otherwise permitted uses in lands adjacent to and surrounding areas in the district in such a way as to prevent proper functioning of such permitted uses without significant exception to these performance standards, thus tying this district to other uses in a nonseverable manner.
3. Result in modifications to terrain, vegetation, or other natural features that serve to protect designated archaeological and paleontological sites and sensitive areas from the effects of wind and other climatic factors, including natural or manmade water runoff, or that would similarly alter adjacent lands within 200 feet of the boundaries of lands covered by this district in such a way as to render lands within the district susceptible to such impacts.
4. Result in the use or conversions of such designated historical, archaeological, paleontological, scientific, or educational lands, water, or improvements as commercial profit-making ventures open to the general public without application of specific approval and control by the City over hours, types, intensities, purposes, fees, and other operations of such areas or facilities, including organized tours by motor vehicle, bicycle, pedestrian, or boat.
5. Result in the provision of inadequate security protection against vandalism or uncontrolled public exposure to archaeological or paleontological sites under excavation or study, historic structures, or areas undergoing renovation or maintenance, or scientific or educational research being conducted on site.

Title 17, Chapter 40, Section 060

Establishes the urban appearance overlay control district (OC-3) to:

1. Preserve, protect and maintain land and water areas, structures and other improvements that are of significant value because of their recreational, aesthetic and scenic qualities, as defined in the visual aspects portion of the general plan and the corridors element of the coastal-specific plan;
2. Preserve, protect and maintain significant views and vistas from major public view corridors and public lands and waters within the city that characterize the city's appearance as defined in the visual aspects portion of the general plan and the corridors element of the coastal-specific plan;
3. Ensure that site planning, grading and landscape techniques, as well as improvement planning, design and construction will preserve, protect and enhance the visual

character of the city's predominant land forms, urban form, vegetation and other distinctive features, as identified in the general plan and the coastal-specific plan; and

4. Preserve, protect and maintain significant views of and from slope areas within the community that characterize the city's dominant landform appearance.

The following lands, water and improvements shall be included in this district and shall be maintained in compliance with the criteria of this section, unless otherwise excluded:

1. All visual accents, view corridors, adjacent lands, affecting corridors and viewing areas, as generally defined by the general plan and the coastal-specific plan.

The following criteria shall be used in assessing any and all uses, developments and alterations of lands included in this district, and shall provide that these actions not:

1. Result in the change in elevation of the land or construction of any improvement that would block, alter or impair major views, vistas or viewsheds in existence from designated view corridors, view sites or view points at the dates of adoption of the general plan and the coastal-specific plan in such a way as to materially and irrevocably alter the quality of the view as to arc (horizontal and vertical), primary orientation or other characteristics;
2. Cause the removal or significant alteration of structural focal points and natural focal points, as defined and designated in the general plan;
3. Cause the mass and finish grading or any topographic alteration that results in uniform, geometrically terraced building sites that are contrary to the natural land forms, which would substantially detract from the scenic and visual quality of the city, which would be contrary to the grading criteria contained in Section 17.76.040 (Grading permit) or that would substantially change the natural characteristics of a drainage course, identified natural vegetation or wildlife habitat area;
4. Create site plans, building or other improvement designs that would result in other significant changes to the natural topography or that would prevent or hinder the use of naturalized minimum grading techniques to restore an area to its natural contours;
5. Grade any area or remove vegetation from such an area without replacing such areas with properly drained, impervious surfaces or suitable vegetation within six months of the beginning of such activities;
6. Propose the use of any vegetative materials incompatible with the visual, climatic, soil and ecological characteristics of the city or that require excessive water;
7. Create a cut or embankment with a slope greater than 3 feet horizontal to 1 foot vertical (3:1) and more than 15 feet in total elevation that is adjacent to a publicly maintained

right-of-way or area unless an agreement with the city for the vegetation and perpetual maintenance of such slope at no cost to the city is executed and bonded; and

8. Result in changes in topography or the construction of improvements that would block, alter or otherwise materially change significant views, vistas and viewshed areas available from major private residential areas of the community that characterize the visual appearance, urban form and economic value of these areas.

Title 17, Chapter 56, Section 010

Sets tolerance levels for adverse environmental effects created by any use or development of land, including dust control, construction fencing, and construction site maintenance.

Title 17, Chapter 70, Section 010

Establishes the site plan review procedure enabling the director and/or planning commission to check development proposals for conformity to the above environmental protections.

The above Ordinances address a wide range of environmental protection. The cumulative effect of these Ordinances is to safeguard and enhance the natural lands included in this Subarea Plan.

2.1.2 Other City Ordinances

Other City of Rancho Palos Verdes ordinances, including the Grading and Subdivision Ordinance, address protection of resources.

- **Grading Ordinance.** All grading exceeding 20 c.y., clearing, brushing, or grubbing of natural or existing grade in the City of Rancho Palos Verdes, including sensitive habitats (e.g., CSS) is subject to the Grading Ordinance. Permits are reviewed for compliance with established controls. Applications for a grading permit can be modified or denied to ensure environmental quality. Erosion-control guidelines require protection of environmentally sensitive areas such as wetlands.
- **Subdivision Ordinance.** The Subdivision Ordinance complements the City of Rancho Palos Verdes General Plan and Zoning Ordinance. CEQA review is required for all subdivisions. A project can be modified or denied if it is found to cause substantial damage or substantially and unavoidably injure fish or wildlife or their habitat. Additionally, all subdivisions must be found consistent with the General Plan and Zoning Ordinance.
- **Stormwater Discharge Ordinance.** The intent of the Stormwater Discharge Ordinance is to protect and enhance the quality of the watercourses, water bodies, and wetlands in the city and region. A Stormwater Pollution Prevention Plan (SWPPP) is required before major construction activity and is used as the tool to review proposals for compliance with established guidelines to reduce or eliminate pollution. If necessary, the City Engineer may require a SWPPP for business-related activities not already operating under such a plan.
- **Fire Protection.** The City of Rancho Palos Verdes has adopted the Los Angeles County Fire Code which, among other things, establishes regulations for the clearance of brush and combustible growth. The Fire Marshall determines the required clearance width of the fuel management area

for existing and proposed development. The City consults with the Fire Marshall during the environmental review of proposed projects.

2.1.3 City of Rancho Palos Verdes General Plan

The City's General Plan, adopted on June 26, 1975, is organized into the following elements, all of which are relevant to this Subarea Plan:

- *Natural Environment Element.* This element is a composite of areas requiring considerations of public health and safety and preservation of natural resources.
- *Socio/Cultural Element.* This element identifies the City's goals and policies for preservation of its paleontological, historical, and archaeological resources and for social, service, and cultural organizations.
- *Urban Environment Element.* This element addresses concerns for city areas set aside for development, with consideration for natural environmental concerns. This element also provides goals and policies for circulation, noise, visual aspects, public services, and infrastructure.
- *Land Use Plan.* According to the General Plan, the City's Land Use Plan is a composite of the other elements and focuses on the City's overall development, conservation, and fiscal balance. According to the Land Use Plan, Overlay Control Districts are incorporated into the General Plan to further reduce impacts that could be induced by proposed and existing development in sensitive areas. Major disruptive treatment of these land areas would alter features, including significant natural, urban, and socio/cultural characteristics, that form the city's character and environment.

2.1.4 Coastal-Specific Plan

The Coastal Specific Plan (CSP) was adopted by the RPV City Council on December 19, 1978. The CSP provides a series of policies to guide development, as well as protect natural features in the Coastal Zone along the 7.5 miles of coastline within the City's jurisdiction. Although this Subarea Plan contains focused policies directed toward native lands management, the CSP clearly contains similar elements thereby enforcing and complementing the goals of the Subarea Plan.

The plan identifies natural habitat "*which is not only vital to local animal life, but is the key to the migratory species*" (Page N-1) while acknowledging that the "*Peninsula has already experienced the lowest ebb in habitat quality*" and notes that "*Recent programs are providing indicators that this habitat is recovering*" (Page N-2).

To ensure this successful "recovery," the following policies address the protection of these valuable resources while providing for the public health, safety, and welfare.

- Page N-45 through N-47 of the local CSP identifies 20 policies addressing the Natural Environment.
 - **Policy 1** allows only low intensity activities within the coastal resource management districts.
 - **Policy 2** requires any development within the coastal resource management districts to provide geotechnical engineering studies to assess soil stability.
 - **Policy 3** prohibits new permanent structures within extreme hazard areas of the coastal resource management district.
 - **Policy 4** encourages non-residential structures (i.e., Recreational Facilities) within coastal resource management districts.
 - **Policy 5** calls for stringent site design and maintenance criteria for areas with high wild-land fire hazard.
 - **Policy 6** prohibits grading activities or structures within areas having flood or inundation hazards.
 - **Policy 7** prohibits siltation and implements non-point discharge in the resource management districts.
 - **Policy 8** requires disclosure and mitigation for impacts to wildlife habitats.
 - **Policy 9** encourages revegetation within coastal resource management districts.
 - **Policy 10** protects, enhances and encourages restoration of marine resources.
 - **Policy 11** encourages the establishment of marine reserves.
 - **Policy 12** encourages acquisition of rights over offshore tidelands.
 - **Policy 13** encourages the support of activities of other agencies concerned with marine water quality.
 - **Policy 14** encourages the support of activities of other agencies concerned with avoiding thermal discharge in marine waters.
 - **Policy 15** requires mitigation measures, where possible, to mitigate.
 - **Policy 16** encourages increased enforcement activity of the California Department of Fish and Game.
 - **Policy 17** encourages the exploration of additional enforcement activities to protect the marine environment.
 - **Policy 18** encourages climatic sensitive site and structure design.
 - **Policy 19** supports monitoring of oil and gas extraction activities.
 - **Policy 20** encourages restoration of marine environments.

The cumulative effect of these policies is to safeguard and enhance the natural lands covered in this Subarea Plan.

- Page S/C-7 contains policies addressing Social/Cultural concerns:
 - **Policy 1**, although protecting cultural resources, will also as a secondary benefit protect habitat associated with Native American sites.
- Page U-67 contains policies addressing the urban environment:
 - **Policy 6** requires existing trails (where allowed in the reserve) to be left in their natural state.
 - **Policy 7** restricts coastal access points thereby prohibiting habitat destruction via trail “cutting.”
 - **Policy 8** requires sewer pump stations to be minimized thereby protecting native habitat.
- Page C-16 contains the major policy protecting Natural Corridors defined as slopes above 35 percent and all areas having habitat designated as sensitive to human intrusion, both terrestrial and marine.

The CSP then identifies site-specific policies for subregions within the Plan’s jurisdiction.

- Page S 1-10 contains the following policies for Subregion One:
 - **Policy 1** requires that the major drainage course in this subregion be protected.
 - **Policy 2** requires native landscaping in developed areas to be beneficial to migratory and resident bird species.
 - **Policy 3** calls for the establishment marine reserves.
 - **Policy 5** calls for the coordination in the design and placement of open-space areas.
 - **Policy 6** ensures that flood control improvements do not affect natural habitat.
- Page S 2-15 contains the following policies for Subregion Two:
 - **Policy 1** requires native landscaping in developed areas to be beneficial to migratory and resident bird species.
 - **Policy 2** calls for the establishment marine reserves.
 - **Policy 3** encourages restoration of kelp beds off Point Vicente.
 - **Policy 5** ensures that noise and lighting impacts are mitigated at the point of origin.
 - **Policy 7** allows for the upgrading of Marineland, as long as there are no adverse impacts to surrounding areas.
 - **Policy 9** restricts access to fragile beach areas.

- Page S 3-14 contains the following policies for Subregion Three:
 - **Policies 1 and 2** encourage the use of Transfer of Development Rights (TDRs) relocate development away from coastal bluffs.
- Page S 4-14 contains the following policy for Subregion Four:
 - Policy 2 requires development abutting natural drainage areas to maintain that character of the watercourse.
- Page S 5-16 contains the following policy for Subregion Five:
 - **Policy 1** ensures that flood control improvements within the subregion will be carried out in a manner consistent with preserving natural habitats.
 - **Policy 3** encourages that a carrying capacity for beaches be established so that impacts to fragile marine environments are minimized.
- Page S 6-12 contains the following policy for Subregion Six:
 - **Policy 1** requires that that native vegetation of the two major canyons in the areas is protected.
 - **Policy 2** encourages the establishment marine reserves to protect fragile marine environments.
 - **Policy 4** ensures that flood control improvements are carried out in manner consistent with the preservation of natural habitat.
 - **Policy 5** prohibits new structures in hazard areas.
- Page S 7-12, 13 contains the following policy for Subregion Seven:
 - **Policy 1** requires that natural vegetation be maintained and protected in major drainage courses.
 - **Policies 2 and 3** initiate and support the establishment marine reserves to protect fragile intertidal marine environments.
 - **Policy 9** requires sewer pump stations to be minimized thereby protecting native habitat.
 - **Policy 10** requires that the natural drainage course in this subregion be protected and where flood control is necessary, sensitive to the natural environment.
 - **Policy 12** prohibits dirt fill for traversing identified drainage courses.

The above policies address a wide range of environmental protection. The cumulative effect of the Coastal Specific Plan is to safeguard and enhance the natural lands covered by this Subarea Plan.

2.2 BIOLOGICAL RESOURCES

2.2.1 Vegetation Communities

The initial vegetation mapping and gnatcatcher and cactus wren distribution data of the Peninsula were prepared by Atwood et al. (1994) and updated and verified during the first phase of the NCCP program (Ogden, 1999). The vegetation map was compiled from 1 inch = 1,200 feet color aerial photographs and from field mapping efforts that used U.S. Geological Survey topographic maps enlarged to a scale of 1 inch = 1,000 feet. The vegetation mapping was ground-verified, and vegetation polygons were assessed for plant cover. A vegetation category was assigned to each polygon according to plant species cover based on Holland (1986). These vegetation data were digitized into the geographic information system (GIS) database. Additional source data were also obtained from representatives of the local chapters of the CNPS, Audubon Society, and Endangered Habitats League, as well as digital information from the major landowners and Southern California Association of Governments (SCAG). These data sources were collated and reviewed for spatially relevant information for inclusion in the GIS database. Ogden updated this base vegetation map using project-specific vegetation data from existing environmental reports. Minor updates to the vegetation map were made during formation of the public review draft of this Subarea Plan document to account for changes in vegetation cover associated with recently completed development projects (URS Corporation, 2003). Approximately 8,558.7 acres of land occurs in Rancho Palos Verdes, including native habitats, non-native habitats, agricultural lands, disturbed areas, and developed lands. These communities are listed in Table 2-1 and described below (see Figure 1-1).

Sensitive habitats within the Rancho Palos Verdes NCCP planning area are those that are considered rare in the region, support sensitive species of plants and animals, and/or are subject to regulatory protection through various federal, state, or local policies or regulations. In the case of habitats in Rancho Palos Verdes, these include all wetland habitat types (riparian scrub), as well as all upland scrub habitats. No native grasslands have been delineated in Rancho Palos Verdes, but if patches of native grassland occur, this habitat would also be considered sensitive if the patch exceeded 0.3 acre and supported at least 10 percent cover of native grassland plant species. Habitats dominated by non-native plant species (non-native grassland, exotic woodland, and disturbed vegetation) are generally not considered sensitive. Non-native grassland, however is considered sensitive where it occurs in large, contiguous areas because it may provide vital foraging habitat for raptors and support other sensitive plant and wildlife species. Because most grasslands in southern California are now dominated by non-native annual grasses, conservation of some non-native grassland is necessary to achieving NCCP planning goals for a multiple habitat reserve design. Patches of non-native grassland that exceed 5 acres are considered to have some conservation value. Smaller patches of non-native grassland that are contiguous with larger areas of biological open space are also important because they contribute to a habitat mosaic that can be used by sensitive species.

2.2.1.1 Coastal Sage Scrub

Coastal sage scrub is composed of low, soft-woody subshrubs approximately 1 meter (3 feet) high, many of which are facultatively drought-deciduous (Holland 1986). This association is typically found on dry sites, such as steep, south-facing slopes or clay-rich soils slow to release stored water. Dominant shrub species in this vegetation type may vary, depending on local site factors and levels of disturbance.

Dominants within the study area include California sagebrush (*Artemisia californica*), ashy-leaf buckwheat (*Eriogonum cinereum*), California sunflower (*Encelia californica*), coyote bush (*Baccharis pilularis*), lemonadeberry (*Rhus integrifolia*), purple sage (*Salvia leucophylla*), and black sage (*Salvia mellifera*). Other less frequent constituents of this community include California buckwheat (*Eriogonum fasciculatum* ssp. *fasciculatum*), goldenbush (*Isocoma menziesii*), toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), coyote bush (*Baccharis pilularis*), and bladderpod (*Isomeris arborea*).

Numerous CSS sub-associations have been identified in Rancho Palos Verdes and classified according to the dominant species. Such sub-associations include *Artemisia*-dominated scrub, *Eriogonum*-dominated scrub, *Salvia*-dominated scrub, *Encelia*-dominated scrub, *Baccharis*-dominated scrub, and *Rhus*-dominated scrub. These sub-associations correspond to the California sagebrush series, California buckwheat series, black sage series, purple sage series, and California encelia series, and/or coyote bush series, as described in Sawyer and Keeler-Wolf (1995). These sub-associations have been delineated and digitized into a GIS database. Where the CSS cannot be clearly differentiated by a single dominant species, it was classified as “undifferentiated” CSS. There are approximately 1,003 acres of CSS in the city, of which 93 acres are *Artemisia*-dominated scrub, 14 acres are *Eriogonum*-dominated scrub, 21 acres are *Salvia*-dominated scrub, 8 acres are *Encelia*-dominated scrub, 7 acres are *Baccharis*-dominated scrub, 225 acres are *Rhus*-dominated scrub, and 635 acres are undifferentiated.

The shrub layer in this community ranges from a continuous canopy with little understory cover to a more open canopy with widely spaced shrubs and a well-developed understory. Native understory species present in this association include foothill needlegrass (*Nassella lepida*), purple needlegrass (*Nassella pulchra*), golden yarrow (*Eriophyllum confertiflorum*), wishbone bush (*Mirabilis californica* var. *californica*), and common goldenstar (*Bloomeria crocea*). Common non-native species in open or disturbed sage scrub include wild oat (*Avena* spp.), tocalote (*Centaurea melitensis*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and Russian thistle (*Salsola tragus*), among others. Disturbed CSS is also present in Rancho Palos Verdes. A disturbed qualifier is placed on CSS (or any other native habitat) based on mechanical disturbance (e.g., vegetation clearing and off-road vehicle activity). Disturbed CSS typically has a high percentage of nonnative species, low percent cover of CSS indicator species, and is fragmented to some degree.

2.2.1.2 Southern Cactus Scrub

Southern cactus scrub is a low, dense scrub (less than 2 meters [6.6 feet]) with succulent shrubs consisting primarily of prickly pear species (*Opuntia littoralis*, *O. oricola*) and coastal cholla (*Opuntia prolifera*) as dominant constituents (Magney, 1992; Sawyer and Keeler-Wolf, 1995). Although the dominant species are succulent, woody species can also be present as co-dominants with the succulents. Typical woody species in this association include California sagebrush, California buckwheat, California sunflower, bladderpod, and wishbone bush. Southern cactus scrub ranges from coastal southern Santa Barbara County southward to northern San Diego County and inland to the cismontane valley areas of San Bernardino and Riverside Counties (Magney, 1992). Southern cactus scrub occurs mostly on steep, south facing slopes in sandy soils or rocky areas below 1,200 meters (3,937 feet) elevation (Magney, 1992; Sawyer and Keeler-Wolf, 1995). Examples of this community occur on the Rancho Palos Verdes City Hall site and in the Ocean Trails project open space. Approximately 97 acres of southern cactus scrub occur in Rancho Palos Verdes.

Table 2-1
Vegetation Communities in
Rancho Palos Verdes ¹

Vegetation Community	Acres
Coastal Sage Scrub Sub-associations	
CSS – Artemisia Dominated	93.0
CSS – Baccharis Dominated	7.2
CSS – Encelia Dominated	7.9
CSS – Eriogonum Dominated	13.9
CSS – Rhus Dominated	225.0
CSS – Salvia Dominated	21.0
CSS – Undifferentiated	635.5
Saltbush Scrub	7.3
Southern Cactus Scrub	96.9
Southern Coastal Bluff Scrub	137.0
Grassland	955.3
Riparian Scrub	2.5
Exotic Woodland	75.4
Disturbed Vegetation	88.3
Subtotal Vegetation	2366.2
Other	
Cliff Face	8.8
Disturbed	162.4
Agriculture	17.6
Developed	6,003.7
Subtotal Other	6,192.5
Total Acreage	8,558.7

1. Vegetation inventory from Ogden (1999) with minor updates in 2003 associated with Ocean Trails and Ocean Front Estates projects.

2.2.1.3 Saltbush Scrub

Saltbush scrub is dominated by quailbush (*Atriplex lentiformis*) and the nonnative species *Atriplex glauca*. Shrubs are less than 3 meters (10 feet) with closed to open canopies (Sawyer and Keeler-Wolf, 1995). Saltbush scrub corresponds to the mixed saltbush series, as described in Sawyer and Keeler-Wolf (1995). The understory consists of ruderal species, such as black mustard (*Brassica nigra*), wild radish (*Raphanus sativus*), and cliff aster (*Malacothrix saxatile*). Approximately 7 acres of saltbush scrub was mapped in the city, and was also mapped in the Portuguese Bend area.

2.2.1.4 Southern Coastal Bluff Scrub

Southern coastal bluff scrub is a low, sometimes prostrate scrub that occurs at localized sites along the coast south of Point Conception (Holland, 1986). Plants in this association cling to nearly vertical rock faces just above the surf. The coastal bluff scrub community is widespread along the California coastline as a very narrow band, often not extending more than a few meters inland (Holland and Keil, 1990). Dominant plants are mostly woody and/or succulent species, such as California sagebrush, California buckwheat, ashy-leaf buckwheat, lemonadeberry, coast cholla, and coast prickly pear. Other less-frequent constituents of this community include boxthorn (*Lycium californicum*), bright green dudleya (*Dudleya virens*), aphanisma (*Aphanisma blitoides*), seacliff buckwheat (*Eriogonum parvifolium*), sea blite (*Suaeda taxifolia*), and bladderpod. Development along the southern California coastline has reduced this community throughout its range. Potential inclusions within coastal bluff scrub are CSS and beach habitat. Coastal bluff scrub occupies 137 acres along the steep ocean cliffs of Rancho Palos Verdes.

2.2.1.5 Grassland

Nonnative annual grasses and other annual species dominate grasslands in the city. Small patches dominated by native perennial bunchgrasses were observed within the annual grassland, as discussed below, but were generally too small in extent to map adequately. Annual or nonnative grassland generally occurs on fine-textured loam or clay soils that are moist or even waterlogged during the winter rainy season and very dry during the summer and fall. This association is characterized by a dense to sparse cover of annual grasses, often with native and nonnative annual forbs (Holland 1986). The number of natives versus nonnatives is site-specific, and varies according to rainfall and other factors (Heady 1995). Estimates for the proportion of nonnative species in this association range from 29 to 80 percent (White 1967; Bentley and Talbot 1948; Heady 1956, 1995; Holland and Keil 1990). Talbot et al. (1939) report that annuals comprise approximately 94 percent of the herbaceous cover in annual grassland; Ewing and Menke (1983) state that annuals comprise 50 to more than 90 percent of the vegetative cover in annual grassland, and that most of the annuals are nonnative species. Species composition varies within annual grassland and is a function of climatic conditions, soils, and allelopathic effects of above-ground plant residue (e.g., mulch) (Evans and Young 1989; Heady 1995; Bartolome et al. 1980).

Annual grassland is a disturbance-related community most often found in old fields or openings in native scrub habitats. This association may have replaced native grassland and CSS at many localities throughout the study area. Typical grasses within the study area include wild oat, foxtail chess, ripgut grass (*Bromus diandrus*), barley (*Hordeum murinum* ssp. *leporinum*), and Bermuda grass (*Cynodon dactylon*). Characteristic forbs include red-stem filaree (*Erodium cicutarium*), mustard (*Brassica* spp.), tarweed (*Centromadia* spp.), tocalote, and cliff aster. Within annual grassland, grasses are less than 1 meter (3 feet) high and form a continuous or open cover. Emergent shrubs and trees may be present as well (Sawyer and Keeler-Wolf 1995). Native grasses in the study region are characterized by the perennial, tussock-forming needlegrass species (*Nassella* spp.). Native and introduced annuals occur between the needlegrass, often exceeding the bunchgrasses in cover (Holland 1986). Native grasses in Rancho Palos Verdes occur in small areas within annual grassland and CSS habitats and have been mapped as such. Grassland communities totaling 955 acres cover large areas in the city.

2.2.1.6 Riparian Scrub

Riparian scrub varies from a dense, broad-leaved, winter-deciduous association dominated by several species of willow to an herbaceous scrub dominated by mule fat (*Baccharis salicifolia*) (Holland 1986). Typical willow species on site include black willow (*S. gooddingii*) and arroyo willow (*S. lasiolepis*). Understory vegetation in this association is usually composed of nonnative, weedy species or is lacking altogether. Riparian scrub may represent a successional stage leading to riparian woodland or forest or may constitute a stable community. Riparian scrub occurs in Agua Amarga Canyon and south of Palos Verdes Drive South on the Ocean Trails project property. This association occupies approximately 2.5 acres of land in Rancho Palos Verdes.

2.2.1.7 Exotic Woodland

Exotic Woodland includes non-native trees and shrubs planted in Rancho Palos Verdes in the past. Some of these introduced species are invasive and have dispersed into the adjacent grassland and native habitats. Exotic species include everblooming acacia (*Acacia longifolia*), Sydney golden wattle (*Acacia cyclops*), Peruvian pepper tree (*Schinus molle*), Brazilian pepper tree (*Schinus terebenthifolia*), black locust (*Robinia pseudoacacia*), myoporum (*Myoporum laetum*), gum tree (*Eucalyptus* spp.), and pines (*Pinus* spp.). Most of the exotic woodlands occur in the Portuguese Bend and Lower Filiorum areas and occupy approximately 75 acres.

2.2.1.8 Disturbed Vegetation

Disturbed vegetation refers to plant associations that occur on highly disturbed sites in urbanized areas (e.g., along roadsides, footpaths, in parking lots, or in previously graded areas) that support weedy broadleaf species. Areas with disturbed vegetation are typically characterized by heavily compacted soils that limit the species that can thrive here (Holland and Keil, 1990). Typical species associated with disturbed vegetation include horseweed (*Conyza canadensis*), sow thistle (*Sonchus oleraceus*), knotweed (*Polygonum* spp.), mallow (*Malva* spp.), Russian thistle, sweet fennel (*Foeniculum vulgare*), castor bean (*Ricinus communis*), goosefoot (*Chenopodium* spp.), and tocalote (*Centaurea melitensis*). Other common species that can be found in disturbed areas, as well as other communities, include mustards, star thistle, rye grass (*Lolium* spp.), burclover (*Medicago polymorpha*), wild radish, milk-thistle (*Silybum marianum*), and cocklebur (*Xanthium* spp.), among others. True ruderal species are those found mainly or solely in areas with previous surface disturbance (California Exotic Pest Plant Council, 1999; Beatty and Licari, 1992). Disturbed vegetation occupies approximately 88 acres in Rancho Palos Verdes.

2.2.1.9 Cliff Faces

Cliff faces are steep, sometimes vertical slopes with little vegetative cover. Constant erosion from wind and rain prevents vegetation establishment. Typically, there is little soil available for plants to become established. Cliff faces in the city are found along the sea cliffs, in the landslide area, west of Coolheights Drive, and north of Forrestal Road. Cliff faces can also occur as inclusions in coastal bluff scrub habitat. Cliff faces occupy about 9 acres of land in Rancho Palos Verdes.

2.2.1.10 Disturbed Areas

Disturbed areas are lands where the vegetation has been significantly altered by frequent disking or mowing for fire protection and vegetation control and little to no vegetation cover remains. Typical plant species found scattered in disturbed areas include Russian thistle, black mustard, storksbill (*Erodium* spp.), and annual grasses, among others. Disturbed areas primarily consist of maintained firebreaks and occupy approximately 162 acres in the city.

2.2.1.11 Agriculture

Agriculture includes actively cultivated lands and lands that support nursery operations. Only two areas in Rancho Palos Verdes are actively farmed, comprising approximately 18 acres. These two areas are in the western portion of the city near the Rancho Palos Verdes City Hall.

2.2.1.12 Developed Areas

Developed areas in the city are lands that have been permanently altered by human activities and that support no native vegetation. These areas include roads, buildings, ornamental landscapes, and other areas where the land has been altered to such an extent that natural vegetation cannot become reestablished. Areas graded for development in the late 1990s (i.e., Ocean Trails and Subregion One) were mapped as they were being developed, but a portion of these areas are in the process of being revegetated with CSS and other native vegetation. Developed areas occupy 6,113 acres in the city limits.

2.2.2 Sensitive Species

Sensitive species, through the circumstance of natural distribution or habitat destruction, have declined in population to a level so low that professional biologists are concerned about the longevity or vitality of the species. Sensitive species include species listed by the State or Federal Wildlife Agencies under the ESA, CDFG as a Species of Special Concern (SSC), or on the California Native Plant Society's inventory of rare or endangered plants (CNPS, 2001). The distribution of sensitive species is based on cumulative sighting data compiled during the Phase I NCCP program and focused rare plant surveys conducted in spring 1998. Butterfly habitat was also assessed during the Phase I NCCP program. Only recently has El Segundo blue butterfly been documented in Rancho Palos Verdes. All the sensitive species are associated closely with scrub habitats on the Peninsula. Sensitive species in the Rancho Palos Verdes Subarea Plan area are described below (see Figure 1-2).

Aphanisma blitoides**Aphanisma**

USFWS: No status

CDFG: No status

CNPS: List 1B, 2-2-2

Aphanisma is a small, annual herb that occurs on sandy soils near the coast in coastal bluff scrub and CSS (CNPS, 2001). It occurs at elevations from 3 to 60 meters (10 to 200 feet) and is found from Santa Barbara County to northern Baja California, Mexico, and is on all the Channel Islands except San Miguel (Junak et al., 1995). This fleshy species blooms from April to May. Aphanisma is in steep decline on the mainland and on the islands (CNPS, 2001). Mainland populations are declining because of recreational

use of beaches and development along the coast (Reiser, 1994). *Aphanisma* was located in Rancho Palos Verdes in the coastal bluff scrub from Portuguese Point along the coast to the Rancho Palos Verdes/San Pedro city limit.

Atriplex pacifica**South Coast Saltscale**

USFWS: No status

CDFG: No status

CNPS: List 1B, 3-2-2

South coast saltscale occurs in coastal bluff scrub, CSS, and alkali playas (CNPS, 2001). This small, wiry, prostrate, annual herb grows in openings between shrubs in xeric, often mildly disturbed locales. This species occurs from Ventura County to Sonora and Baja California, Mexico, and on San Clemente, Anacapa, Santa Catalina, Santa Cruz, San Nicholas, and Santa Rosa islands (Reiser, 1994). South coast saltscale is severely declining throughout its coastal range on the mainland (Reiser, 1994). In Rancho Palos Verdes, this species has been detected on Portuguese Point and along the coast between Halfway Point and Shoreline Park.

Calandrinia maritima**Seaside Calandrinia**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-1

Seaside calandrinia typically occurs on sandy bluffs near the beach and sandy openings in CSS at elevations below 300 meters (1,000 feet) (Reiser, 1994; Hickman, 1993). It occurs from Santa Barbara County to Baja California, Mexico, and is found on Anacapa, Santa Barbara, San Clemente, Santa Catalina, Santa Cruz, and Santa Rosa Islands (Reiser, 1994; CNPS, 2001). In Rancho Palos Verdes, seaside calandrinia occurs on the coastal bluffs in Abalone Cove and immediately west of Portuguese Bend to the Rancho Palos Verdes/San Pedro city limit.

Calochortus catalinae**Catalina Mariposa Lily**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-3

Catalina mariposa lily is a perennial bulb species that flowers from February to May (CNPS, 2001). It occurs below 700 meters (2,300 feet) in open chaparral, cismontane woodland, valley and foothill grassland, and CSS (Hickman, 1993; Reiser, 1994; CNPS, 2001). Catalina mariposa lily occurs in CSS near the Rancho Palos Verdes City Hall, in the canyon north of Barkentine Road, in the Forrestal area, in the northern part of the Portuguese Bend landslide near the closed portion of the Crenshaw Road extension, at the West Bluff and the Upper La Rotonda Preserves in Ocean Trails, and in the Switchbacks enhancement area north of the intersection of Palos Verdes Drives North and East.

Calystegia peirsonii**Peirson's Morning-glory**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-3

Peirson's morning-glory is found in chaparral, CSS, chenopod scrub, and woodlands (CNPS, 2001). It is a perennial herb from a rhizome and blooms from May to June. The elevation range of this species is 30 to 1,500 meters (100 to 5,000 feet; CNPS, 2001). Peirson's morning-glory was previously known only from Antelope Valley in the San Gabriel Mountains of Los Angeles County (Hickman, 1993); recent studies, however, indicate that this species frequently intergrades with other *Calystegia* species (CNPS, 2001). This species has not been observed in Rancho Palos Verdes but is known to occur in the San Pedro area of the Peninsula.

Centromadia parryi ssp. australis**Southern Tarplant**

USFWS: No status

CDFG: No status

CNPS: List 1B, 3-3-2

Southern tarplant occurs in the margins of salt marsh margins, mesic valley and foothill grasslands, vernal pools, and alkaline areas below 425 meters (1,400 feet) elevation (CNPS, 2001). It ranges from Santa Barbara County to northern Baja California, Mexico, and possibly occurs on Santa Catalina Island (CNPS, 2001; Reiser, 1994). This summer blooming annual occurs mostly in seasonally moist saline grassland. Southern tarplant is severely declining throughout its range because of development and recreation (Reiser, 1994). This species has not been detected in Rancho Palos Verdes, but occurs northeast of the city near Machado Lake.

Convolvulus simulans**Small-flowered Morning-glory**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-2

Small-flowered morning-glory is found between 30 to 700 meters (100 to 2,300 feet) on clay soils typically devoid of shrubs, in chaparral, sage scrub, and grassland (Reiser, 1994; Hickman, 1993). Occurrences have been recorded in San Diego, Orange, Riverside, Los Angeles, Santa Barbara, San Luis Obispo, Kern, San Joaquin, Contra Costa, San Benito, and Stanislaus Counties, as well as on Santa Catalina and San Clemente Islands and in Baja California, Mexico (CNPS, 2001). In Rancho Palos Verdes, small-flowered morning-glory occurs at two locations: north of Forrestal Drive and northwest of the terminus of Coolheights Drive.

Crossosoma californicum**Catalina Crossosoma**

USFWS: No status

CDFG: No status

CNPS: List 1B, 2-2-2

Catalina crossosoma is a deciduous shrub that can reach 5 meters (16 feet) high. This shrub is usually found on dry, rocky slopes and canyons in CSS below 500 meters (1,600 feet) elevation (CNPS, 2001; Hickman, 1993). It is known from the Peninsula, San Clemente and Santa Catalina Islands, and Guadalupe Island, Mexico (Hickman, 1993). Catalina crossosoma has been detected at three locations in Rancho Palos Verdes: north of Pirate Drive, and on the ridgeline and in the canyon west of Ganado Drive, south of Crest Road.

Dichondra occidentalis**Western Dichondra**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-1

This perennial herb generally occurs at elevations from 50 to 500 meters (165 to 1,650 feet) on dry, sandy banks in CSS, chaparral, grassland, or southern oak woodland and often proliferates on recently burned slopes (CNPS, 2001, Reiser, 1994). This species occurs in Sonoma and Marin Counties, disjunct to San Barbara County, and south along the coast to northern Baja California, Mexico (Reiser, 1994). In Rancho Palos Verdes, western dichondra occurs northwest of Coolheights Drive in CSS.

Dudleya virens* spp. *virens**Bright Green Dudleya**

USFWS: No status

CDFG: No status

CNPS: List 1B, 2-2-2

Bright green dudleya is a succulent perennial with a basal rosette of leaves from a caudex (i.e., a short woody stem at or below the ground; Hickman, 1993). This species occurs on steep slopes in chaparral, coastal bluff scrub, and CSS habitats below 400 meters (1,300 feet) (CNPS, 2001; Hickman, 1993). It is known from Los Angeles County, San Clemente, San Nicholas, and Santa Catalina Islands, and Guadalupe Island, Mexico (Hickman, 1993). In Rancho Palos Verdes, bright green dudleya occurs along the coastal bluffs from Point Vicente east to the Rancho Palos Verdes/San Pedro city limit.

Erysimum insulare* ssp. *suffrutescens**Suffrutescent Wallflower**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-3

Suffrutescent wallflower is a perennial herb that occurs at elevations of less than 150 meters (500 feet) (Hickman, 1993). It is found in coastal bluff scrub, coastal dunes, and CSS habitats along the coast from San Luis Obispo County to Los Angeles County (CNPS, 2001). Suffrutescent wallflower occurs on the Peninsula, but has not been detected in Rancho Palos Verdes.

Lycium brevipes* var. *hassei**Santa Catalina Island Desert-thorn**

USFWS: No status

CDFG: No status

CNPS: List 1B, 3-3-3

Santa Catalina Island desert-thorn is a deciduous shrub that can reach 4 meters (13 feet) high (Hickman, 1993). It is found on coastal bluff slopes in coastal bluff scrub and CSS habitats at elevations below 300 meters (1,000 feet) (CNPS, 2001; Hickman, 1993). This species was rediscovered on the Peninsula in 1976. Historical localities include San Clemente and Santa Catalina Islands. In Rancho Palos Verdes, Santa Catalina Island desert-thorn occurs on Portuguese Point.

Pentachaeta lyonii**Lyon's Pentachaeta**

USFWS: Endangered

CDFG: Endangered

CNPS: List 1B, 3-3-3

Lyon's pentachaeta is an annual herb that blooms from March to August (CNPS, 2001). It occurs in openings in chaparral and valley and foothill grasslands near the coast at elevations below 150 meters (500 feet) (CNPS, 2001; Hickman, 1993). This species is known from Los Angeles and Ventura Counties (i.e., Santa Monica Mountains and Simi Hills) and Santa Catalina Island. Currently, fewer than 20 populations are known to occur (CNPS, 2001). Lyon's pentachaeta has not been reported in Rancho Palos Verdes.

Suaeda taxifolia**Woolly Seablite**

USFWS: No status

CDFG: No status

CNPS: List 4, 1-2-1

Woolly seablite is a herbaceous perennial usually restricted to coastal salt marsh; it rarely grows in peripheral scrublands adjacent to salt marshes or as isolated plants along beaches (Reiser, 1994). This species occurs along the coast from Santa Barbara County to Baja California, Mexico, and on Santa Barbara, San Clemente, Santa Cruz, Santa Catalina, San Nicholas, and Santa Rosa Islands and on Guadalupe Island, Mexico (CNPS, 2001). In Rancho Palos Verdes, woolly seablite occurs as isolated plants along the peninsula shoreline from Torrance Beach to San Pedro.

Glaucopsyche lygdamus palosverdesensis**Palos Verdes Blue Butterfly**

USFWS: Endangered

CDFG: No status

The Palos Verdes blue butterfly (PVB) is a rare subspecies of the silvery blue butterfly (Perkins and Emmel, 1977; Arnold, 1987). The PVB is restricted to open CSS habitats that support either ocean milk vetch (*Astragalus trichopodus* var. *lonchus*) or deerweed (*Lotus scoparius*), which are this species' larval food plants (Mattoni, 1992). Currently, PVB is known to occur only at the Naval Fuel Depot in San Pedro (between Western Avenue and Gaffey Street, south of Palos Verdes Drive North; Mattoni, 1992), at Malaga Dunes, and was recently reintroduced at the Chandler Preserve. Historical occurrences of PVB in

Rancho Palos Verdes include locations near “The Switchback” area of Palos Verdes Drive East, locations within the landslide moratorium area (Edward’s Canyon in Area 4, Portuguese Canyon, and Forrestal [Klondike] Canyon), and Agua Amarga (Arnold, 1984, 1986, 1987, 1990; Mattoni, 1992). Habitat for PVB is typified by open CSS and ecotone areas between sage scrub and grassland. Milk vetch is the primary larval host plant present in Rancho Palos Verdes. Deerweed does not generally occur in Rancho Palos Verdes and is restricted mostly to the northeast slope of the Peninsula. Milk vetch is an early successional or disturbance-associated species and would therefore decline if there is an extended period without disturbance (e.g., fire). Habitat loss and fragmentation associated with agriculture and residential development, fire suppression (e.g., fuel modification activities), severe weather conditions, and over-collecting by butterfly enthusiasts have contributed to the current endangered status of this species (Arnold, 1987; Mattoni, 1992). Federal Designated Critical Habitat includes “The Switchback” area of Palos Verdes Drive East and Agua Amarga Canyon (USFWS, 1980; Federal Register Vol. 45, No. 129, pp. 44942).

Euphilotes battoides allyni**El Segundo Blue Butterfly**

USFWS: Endangered

CDFG: No status

The El Segundo Blue (ESB) is a rare subspecies of the square-spotted blue butterfly (Subfamily Polyommatinae) restricted to remnant coastal dune habitats at four locations: Ballona Wetlands south of Marina del Rey, Los Angeles International Airport Dunes, Chevron El Segundo Preserve and adjacent habitat in El Segundo, and Torrance Beach/Malaga Cove (Mattoni et al., 1997). Coast buckwheat (*Eriogonum parvifolium*) is the larval food plant of this subspecies. The historical distribution of ESB included dune habitats in Redondo and Manhattan Beaches. A recovery plan for ESB has been prepared with the Malaga Cove population as the most southern management unit (Torrance Recovery Unit) of the recovery plan. The Malaga Cove population is small, between 10 and 30 individuals using between 50 and 100 individuals of *E. parvifolium* (R. Arnold, pers. comm.). There is no dune habitat within the jurisdiction of Rancho Palos Verdes, but coast buckwheat is known to occur within the coastal bluff scrub habitat between Point Vicente and Abalone Cove. Dr. Richard Arnold conducted a butterfly survey in summer 1998 with negative results for ESB in this area of the city. Subsequent biological surveys in 2000 for proposed development of the York Long Point site detected a population of ESB in coastal bluff scrub habitat (RBF, 2001).

Phrynosoma coronatum blainvillei**San Diego Horned Lizard**

USFWS: No status

CDFG: SSC

This subspecies is endemic to extreme southwestern California (Stebbins, 1985) from south of the Transverse Ranges to Baja California. This species is relatively widespread and locally common from the coast to the western edge of the desert, where extensive suitable habitat is still available—mostly in Orange and San Diego Counties (San Diego Herpetological Society, 1980). This horned lizard has been reported in the Malaga Cove area of the Peninsula (Mattoni et al., 1997) but was not observed during any of the gnatcatcher studies or spring plant surveys. It occurs from sea level to elevations of over 8,000 feet and frequents a variety of habitats from coastal dune, sage scrub, and chaparral to coniferous and broadleaf woodlands (Stebbins, 1985). It is most often found on sandy or friable soils with open scrub.

Habitat requirements include open areas for sunning, bushes for cover, and fine loose soil for rapid burial. Harvester ants are the primary food item of the horned lizard and indicate potential for occurrence of the lizard in an area. This taxon is primarily active in late spring (April to May) and early summer (June to July), after which individuals typically aestivate. Threats to this species include urban development, conversion of habitat to agriculture, collecting of individuals for the pet trade, and reduction of food base because of introduced Argentine ants (*Linepithema humile*) displacing native ant species (Jennings and Hayes, 1994; Brattstrom, 1997; Holway et al, 2002).

Polioptila californica californica**Coastal California Gnatcatcher**

USFWS: Threatened

CDFG: SSC, NCCP focal species

The California gnatcatcher population in the U.S. is estimated to exceed 3,400 pairs (USFWS, 1996). The Peninsula supports a remnant population of 26 to 56 pairs considered isolated from the remainder of the U.S. population (Atwood et al., 1994, 1998; Atwood and Bontrager, 2001). The center point locations of gnatcatcher territories within the GIS database include cumulative data gathered during the Manomet Center five-year study. The primary cause of this species' decline is the cumulative loss of CSS vegetation to urban and agricultural development (Atwood, 1993). This species' habitat is being formally protected and managed through the NCCP program, ESA Sections 10 (HCP processes) and 7 (agency consultations on federal lands). Federal Designated Critical Habitat for the gnatcatcher includes suitable habitats throughout the Peninsula. This species is probably extirpated from much of Ventura and San Bernardino Counties and declining proportionately with the continued loss of CSS habitat in the four remaining southern California counties within the coastal plain. The territory size requirements of the gnatcatcher vary with habitat quality and distance from the coast. Documented home ranges have varied from 1 to 7 acres on the Peninsula (Impact Sciences, 1990; Atwood et al., 1995). Over five years, gnatcatcher productivity and survival have varied on the Peninsula. Annual reproduction has varied from 2.3 to 3.9 fledglings per pair. Annual adult survival has varied from 23 to 70 percent; juvenile over-winter survival varied from 20 to 43 percent. Studies of the species' habitat preferences on the Peninsula and elsewhere indicate that California sagebrush (*Artemisia californica*) and flat-topped buckwheat (*Eriogonum fasciculatum*) are the primary plants used by gnatcatchers when foraging for insects (Atwood et al., 1995; Impact Sciences, 1990; RECON, 1987; ERCE, 1990; Ogden, 1992a). Breeding gnatcatchers on the Peninsula are noticeably absent from most sage scrub dominated by lemonade berry (*Rhus integrifolia*).

Campylorhynchus brunneicapillus**Cactus Wren**

USFWS: No status

CDFG: SSC, NCCP focal species

Coastal southern California populations of cactus wren are seriously endangered throughout the coastal plain from Ventura to the Mexican border (Rea and Weaver, 1990). This species is common throughout the deserts of the Southwest. Coastal populations breed in CSS dominated by extensive stands of tall prickly pear or cholla cacti. Once widespread in coastal southern California, by 1990 cactus wrens had been reduced to fewer than 3,000 pairs scattered into colonies of widely varying size; many colonies are isolated by distance from other colonies (Ogden, 1992b). The Peninsula cactus wren population was relatively stable at approximately 58 ± 5 pairs during the mid-1990s (Atwood et al., 1998). Reproduction

averages above three fledglings per pair, and adult survivorship varies from 57 to 73 percent; juvenile over-winter survivorship varies from 9 to 36 percent. Home range size for Peninsula cactus wrens varies from 1 to 3 acres.

Perognathus longimembris pacificus**Pacific (Little) Pocket Mouse**

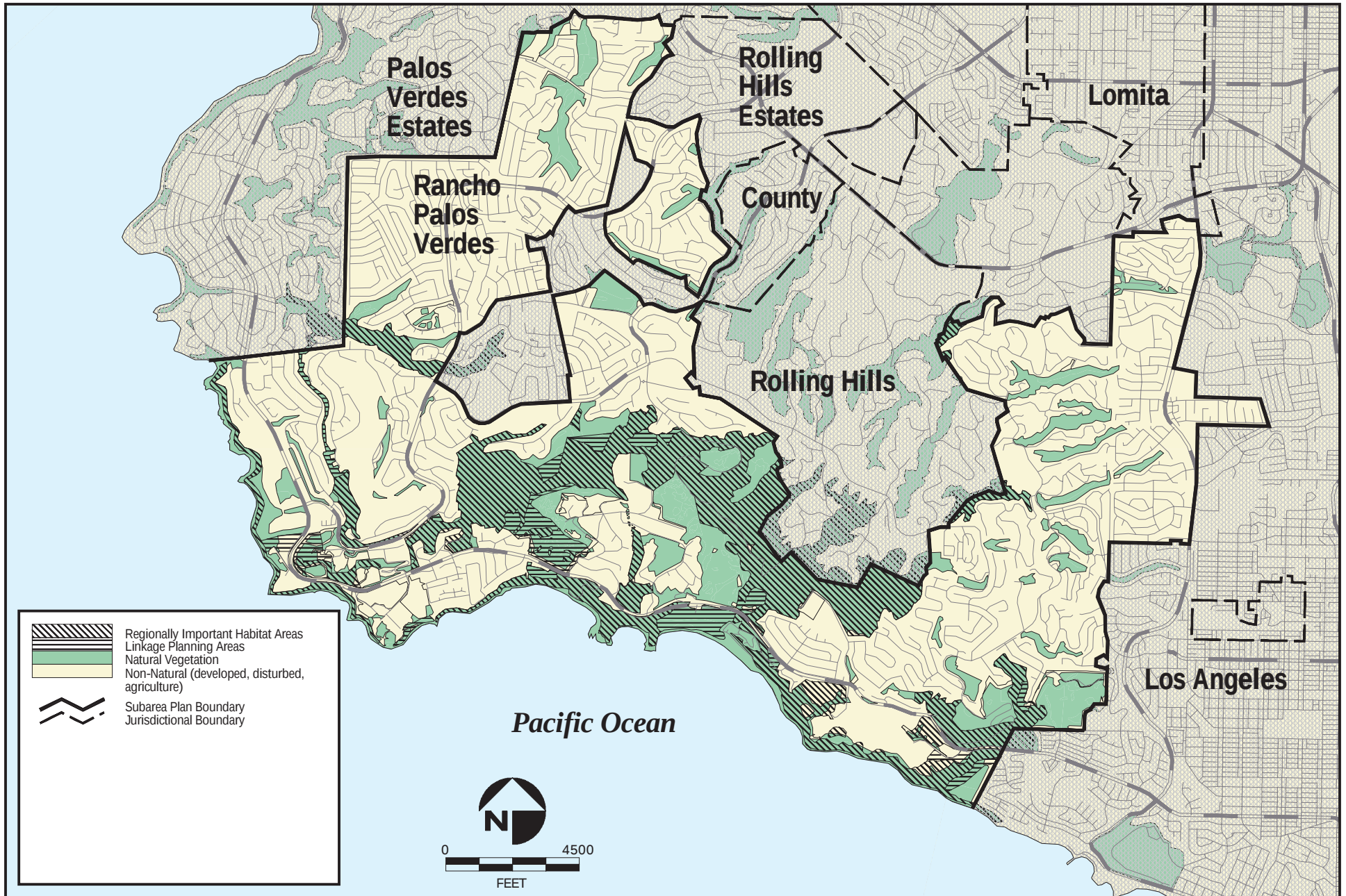
USFWS: Endangered

CDFG: SSC

Historic records of this smallest subspecies of little pocket mouse extend along the immediate coast from Marina del Rey in Los Angeles County, south to the Mexican border. Only eight definite localities have been documented, most of which were subsequently lost to development (USFWS, 1994). Few records are known after the 1930s, and the species was not definitively identified by trapping studies after 1971 until a small population was discovered on the Dana Point Headlands, Orange County in 1993 (Brylski, 1993). Habitats of the Pacific pocket mouse include coastal strand, sand dunes, ruderal vegetation on river alluvium, and open CSS on marine terraces. Three populations were subsequently located on Camp Pendleton in northern San Diego County. Potential habitat beyond Camp Pendleton is very limited and highly fragmented by coastal land development and agriculture. No populations of Pacific pocket mouse have been detected on the Peninsula, despite several trapping surveys within potentially suitable habitat. This species is not expected to be currently extant in Rancho Palos Verdes (Dudek and Associates, 1994; Marquez and Associates, 1995; BonTerra Consulting, 1997; Ogden, 1999). Several authors have noted that this species is found in fine, alluvial, sandy soil near the ocean and adjacent terraces dominated by open sage scrub (Brylski, 1993). The Pacific pocket mouse remains in its plugged burrow during the day and is active only at night. Its peak activity tends to occur early in the night. It becomes torpid during periods of food stress or low temperatures. It is inactive above ground from October to January, varying with food reserves and minimum night temperatures. Breeding occurs from January to August, peaking from March to May. Litter size ranges from two to eight, with usually one or two litters per year. Pacific pocket mice are predominantly granivorous, eating mostly seeds of grasses and forbs.

2.2.3 Regionally Important Habitat Areas

A key step in developing an NCCP plan for the City was to prioritize the most critical biological resource areas for potential conservation so that (1) conservation is maximized; (2) acquisition, restoration and management funds are efficiently used, and (3) relatively less important habitat areas can be developed. Regionally Important Habitat Areas (RIHA) were identified through the overlay of vegetation and target species information; they include areas where there is relatively extensive native vegetation supporting concentrations of target species. Linkage Planning Area that provide a habitat connection between larger habitat areas were also identified. Approximately 55 percent (1,292 acres) of the existing naturalized vegetation in Rancho Palos Verdes was identified as RIHAs (Figure 2-3).



FIGURE

2-4

SECTION 3 PROPOSED RESERVE DESIGN**3.1 BIOLOGICAL RESERVE DESIGN**

The Subarea Plan promotes biodiversity, allows for continued economic development, and avoids property taking. Consequently, designing the reserve system (Reserve) involves balancing two major goals:

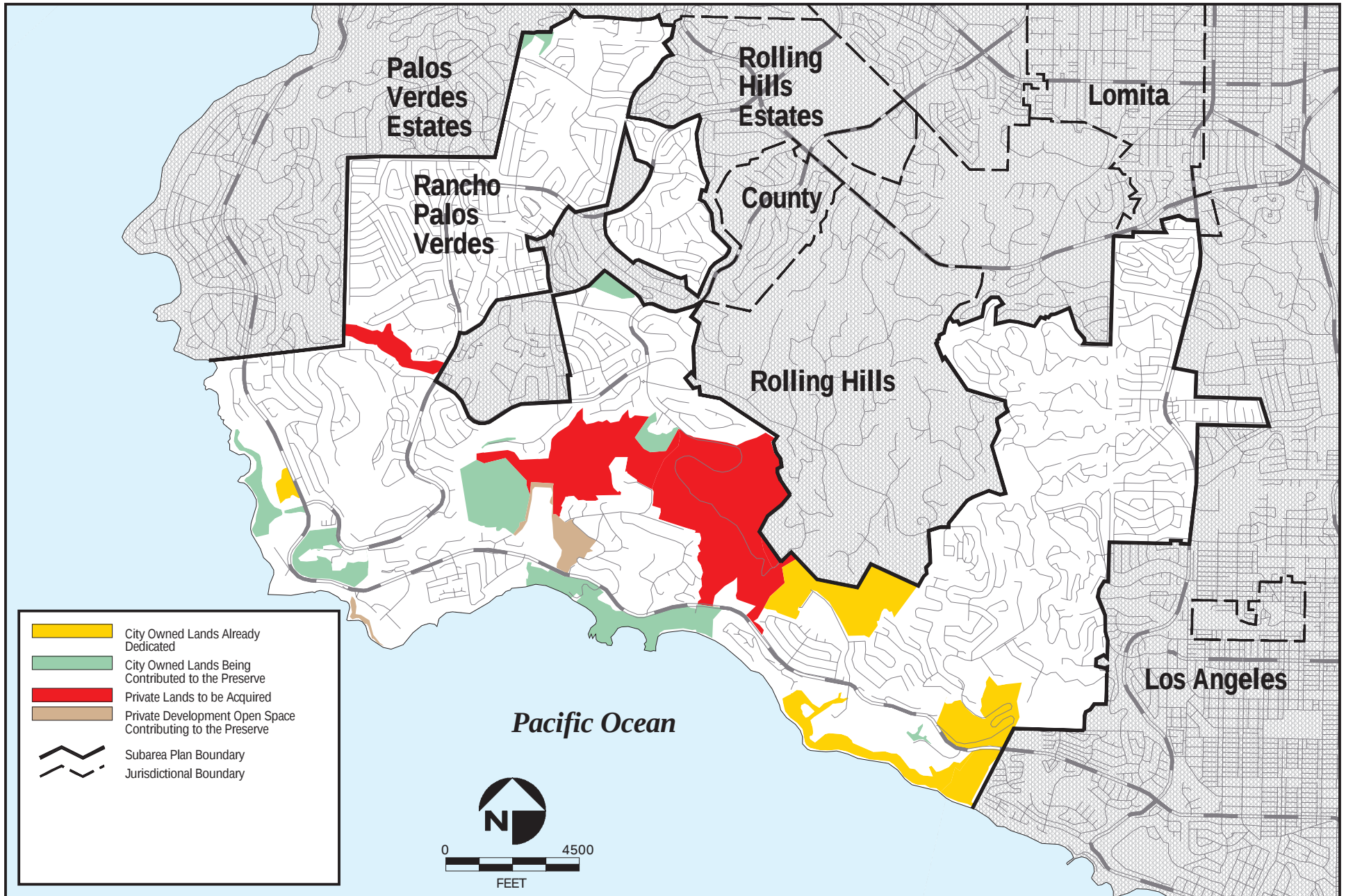
- Biological conservation;
- Property development, property rights, and economic development.

The approach taken to design a functional Reserve was to identify properties where conservation would best achieve biological goals with the least detrimental effects on other land use, property rights, or economic goals. This approach involved examining opportunities and constraints and incorporating biologically valuable lands into the Reserve.

The City's primary conservation strategy is to acquire several key privately owned parcels deemed regionally important, dedicate selected City-owned lands (Figure 3-1), and have the Palos Verdes Peninsula Land Conservancy manage this Reserve with the assistance of the City and the Wildlife Agencies. The proposed Reserve was designed to be consistent with NCCP standards and guidelines and the issuance criteria for ESA Section 10(a) take authorizations for species covered by the city-wide permit. The Reserve conserves the most practicable amount of regionally important habitat areas and provides adequate habitat linkages between patches of conserved habitat. Based on a habitat restoration plan to be approved by the Wildlife Agencies, the City and PVPLC will enhance/restore the most practicable amount of disturbed habitats within the Reserve, emphasizing those directly adjacent to conserved habitat to enhance habitat patch size and habitat linkage function (i.e., areas with moderate to high potential for successful restoration).

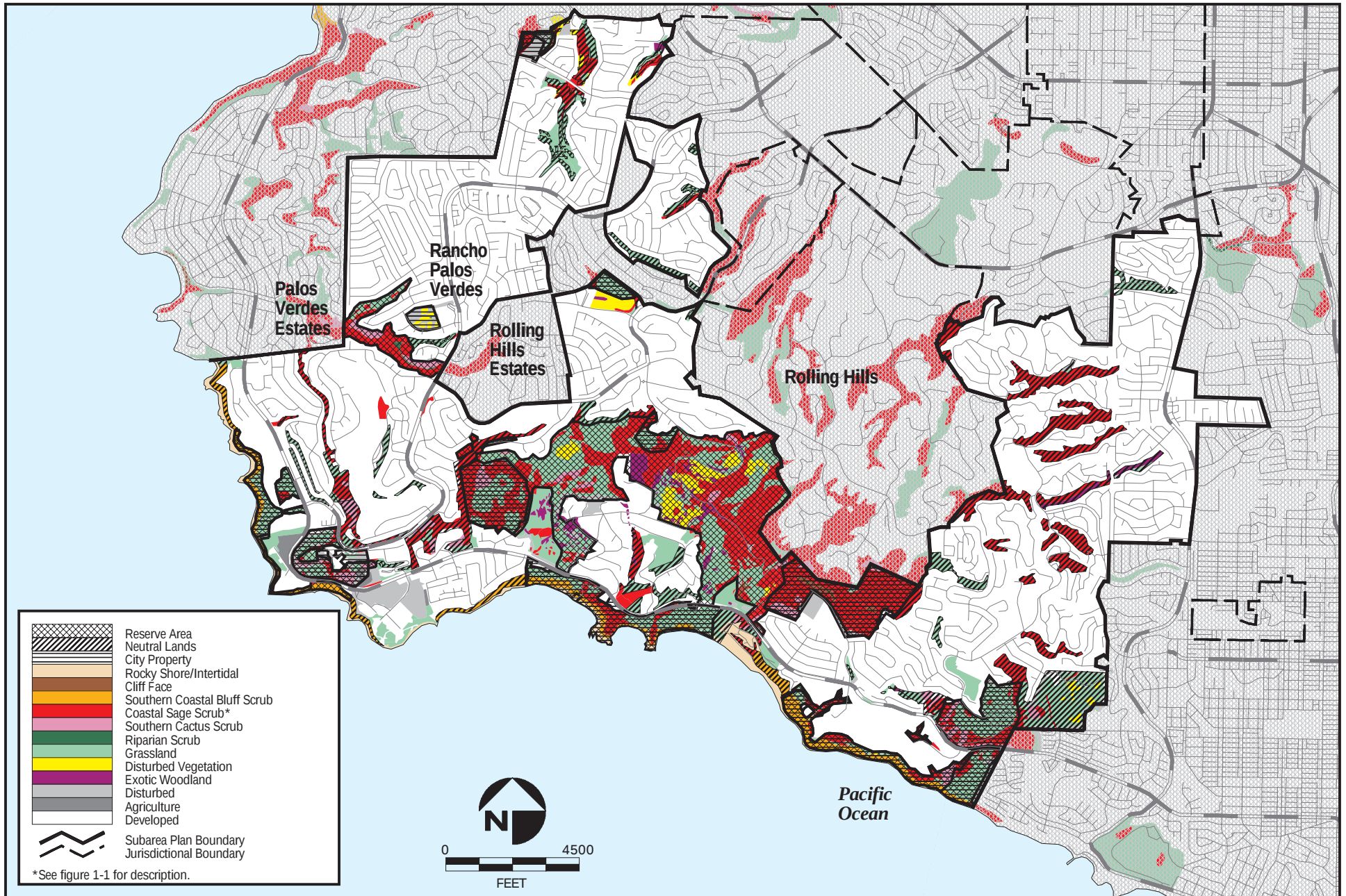
The proposed reserve design includes approximately 1,504 acres, of which 1,435 acres are dominated by naturalized vegetation (Figure 3-2, Table 3-1). An additional 663 acres of land are categorized as Neutral Lands that contribute to reserve function as natural open space and cannot be developed because of extreme slopes, open-space hazard zoning, or official designation as deed restricted HOA open space. The exact boundaries of the Neutral Lands shall be determined by the City based on a slope analysis calculation for extreme slope areas (+35%), by the City's zoning map for the OH zoning and by survey for any recorded deed restrictions. Because Neutral Lands are currently not accessible for active habitat management, they are not included in the Reserve. If agreements can be reached with the property owners to allow management, these lands would be added to the Reserve. Including Neutral Lands, approximately 96.3 percent (1,200 acres) of existing sage scrub habitats would be conserved and precluded from future development under the proposed reserve design.

The Reserve acreages noted below are approximations. The actual acreages will be calculated after the Reserve Map boundary lines are refined using the City's 2004 orthographic maps and L.A. County Assessor parcel line data. This will be done after the Wildlife Agencies complete their review of the Subarea Plan. The Reserve includes:



FIGURE

3-1



FIGURE

3-2

**Table 3-1
Proposed Conservation Acreage
by Vegetation Community**

Vegetation Community	Existing (acres)	In Habitat Reserve (acres)	Neutral Lands (acres)	Outside Reserve (acres)	Total Conserved (acres)¹	Total Percent Conserved¹
Coastal Sage Scrub Associations						
CSS – Artemisia Dominated	93.0	48.4	33.7	10.9	82.1	88.3
CSS – Baccharis Dominated	7.2	7.2	0.0	0.0	7.2	100.0
CSS – Encelia Dominated	7.9	7.9	0.0	0.0	7.9	100.0
CSS – Eriogonum Dominated	13.9	6.8	7.1	0.0	13.9	100.0
CSS – Rhus Dominated	225.0	127.4	96.0	1.6	223.4	99.3
CSS – Salvia Dominated	21.0	19.2	1.8	0.0	21.0	100.0
CSS – Undifferentiated	635.5	412.2	191.8	31.5	604.0	95.0
Southern Cactus Scrub	96.9	70.9	24.9	1.1	95.8	98.9
Southern Coastal Bluff Scrub	137.0	96.3	39.8	0.9	136.1	99.3
Saltbrush Scrub	7.3	7.1	0.0	0.2	7.1	97.3
Subtotal CSS	1,244.7	803.4	395.1	46.2	1,198.5	96.3
Other Vegetation						
Grassland	955.3	530.7	216.1	208.5	746.8	78.2
Riparian Scrub	2.5	2.4	0.0	0.1	2.4	96
Exotic Woodland	75.4	47.1	9.1	19.2	56.2	74.5
Disturbed Vegetation	88.3	52.1	12.1	24.1	64.2	72.7
Subtotal Other Vegetation	1,121.5	632.3	237.3	251.9	869.6	77.5
Total Naturalized Vegetation	2,366.2	1,435.7	632.4	298.1	2,068.1	87.4
Other						
Cliff Face	8.8	8.8	0.0	0.0	8.8	100.0
Disturbed	162.4	42.2	16.1	104.1	58.3	35.9
Agriculture	17.6	2.9	0.0	14.7	2.9	16.4
Developed	6,003.7	14.5	14.6	5,974.6	29.1	0.5
Subtotal Other	6,192.5	68.4	30.7	6,093.4	99.1	1.6
Total Acreage	8,558.7	1,504.1	663.1	6,391.5	2,167.2	25.3

1. Acreage in Habitat Reserve and Neutral Lands categories combined.

3.1.1 Existing Public Lands (836.5 acres)

- City-owned lands (423.5 acres) already dedicated as biological open space to be included in the Reserve
 - 102-acre Switchbacks Parcel
 - 53-acre Shoreline Park Parcel
 - 163-acre Forrestal Parcel
 - 69 acres within the 70.5-acre open space area in the Oceanfront Estates Project now owned by the City

1. City/Redevelopment Agency -owned lands to be dedicated to the Reserve (322.2 acres)

- The entire 98-acre Barkentine Parcel

The 98-acre Barkentine Parcel was purchased by the City in 2001 with funds from the Los Angeles County Regional Park and Open Space District Specified Grant Program (1996 Proposition). Even though the proposition states that the property was purchased to acquire “critical natural lands and wildlife habitat”, the proposition does not require that the entirety of the property be devoted solely to that purpose. Nonetheless, the City proposes to dedicate the entire 98-acre property into the Reserve to ensure its conservation in perpetuity.

- 65 acres of the 79.3-acre Upper Point Vicente Property

The City’s Upper Pt. Vicente property consists of the following three (3) separate parcels: a 71.0-acre parcel that was deeded to the City by the federal government in December 1979 and is subject to a federally approved Program of Utilization; a 6.0-acre parcel that was purchased by the City from the federal government and deeded to the City in March 1979 for use as a civic center site; and a 2.2-acre parcel that was previously owned by the Palos Verdes Peninsula School District which was deeded to the City from the federal government in June 1987. Together these parcels make up 79.3 acres that is owned and controlled by the City. This acreage does not include a 3.9-acre parcel that is owned by the U.S. Coast Guard and surrounded by the City parcels. Approximately 65 acres of the 79.3-acre City owned property is proposed to be dedicated to the Reserve. Excluded from the Reserve is a 14.3-acre area that constitutes the level, disturbed, developed portion of the property. The 14.3-acre area includes the entirety of the 6.0-acre property, the entirety of the 2.2-acre parcel and 6.0 acres of the 71.0-acre parcel that is subject to the Program of Utilization.

- 10 acres of the 26.4-acre Lower Point Vicente Property

In 2004, the County of Los Angeles deeded the 26.4-acre Lower Point Vicente property to the City. The City’s Pt. Vicente Interpretive Center is located on this property. The only portion of this property that is proposed to be included in the Reserve is the coastal bluff area, which is the area between the mean high tide line and the bluff trail. This area is estimated to be approximately 10 acres in size.

- 6 acres of the 10.5-acre Fishing Access Property

In 2004, the County of Los Angeles deeded the 10.5-acre Fishing Access property to the City. The only portion of this property that is proposed to be included in the Reserve is the coastal bluff area, which is the area between the mean high tide line and the top of the coastal bluff. This area is estimated to be approximately 6 acres in size.

- 100 acres of the 124.3-acre Abalone Cove Property

The Abalone Cove property is owned by the City's Redevelopment Agency (RDA). The property consists of the following two (2) separate parcels: a 79.2-acre "Abalone Cove Shoreline Park" parcel that was acquired by the RDA from the County of L.A. in 1987 and the 45.2-acre "archery range" parcel that was also purchased from L.A. County in 1987. Together these parcels make up 124.3 acres that is owned and controlled by the City's RDA. Approximately 100 acres of the 124.3-acre City owned property is proposed to be dedicated to the Reserve. Excluded from the Reserve is the Abalone Cove upper parking lot and picnic area and the lower parking lot and pre-school/lifeguard area.

- 17.4-acre Del Cerro Buffer Property

The City purchased this 17.4-acre property in 2003, which is located adjacent to the City's Del Cerro park. The entire parcel is proposed to be dedicated to the Reserve as it will serve as a buffer between Del Cerro Park and the adjoining Upper Filiorum property.

- 16.8 acres of the 19.6-acre Crestridge Property

The City's RDA currently owns a 19.6-acre parcel at the corner of Crestridge Road and Crenshaw Blvd, that along with an adjoining 9.8-acre privately owned parcel, is the site of a proposed senior condominium/affordable housing/park/senior center project. As currently proposed, the parcels would be further subdivided to create two development parcels and one 16.8-acre open space parcel. Therefore, it is proposed to dedicate 16.8 acres of the RDA owned 19.6-acre Crestridge parcel to the Reserve.

- 9 acres of the 17.5-acre Grand View Park

Grand View Park is a 17.5-acre undeveloped park site that was obtained by the City in 1976. It is proposed to include the northern slope and canyon portions of the park in the Reserve. The area that would be in the Reserve is estimated at 9 acres, leaving approximately 8.5 acres of moderately sloping land outside of the Reserve.

2. Other public/conserved lands (90.8 acres):

- 66.9 acres within the Ocean Trails Project (not yet transferred to the City)

Eventually, the Ocean Trails Golf/Residential project will dedicate to the City a total of 74.9 acres of open space. Of this open space, 66.9 acres will contain habitat and passive trail uses, which will be maintained by the developer. Therefore, it is foreseen that when the 74.9 acres of open space is dedicated to the City, 66.9 acres will be dedicated to the Reserve.

- 20-acre Lunada Canyon Preserve owned by the Palos Verdes Peninsula Land Conservancy

- 3.9-acre Coast Guard property

It is expected that the federal government will include the entirety of the 3.9-acre Coast Guard property in the Reserve. This property is located in Upper Pt. Vicente and is completely surrounded by City owned open space.

3.1.2 Private Lands to be Contributed (216.6 acres)

1. Private development projects will contribute 80 acres of biological open space to the Reserve:

- 40 acres within the Long Point Parcel (bluff face).

Although not required to do so, it is anticipated that the developer of the Long Point Resort Hotel Project will dedicate the bluff areas of the property to the Reserve after the project is constructed. It is estimated that the bluff area constitutes approximately 40 acres of surface area.

- 40 acres within the Point View (Lower Filiorum) Parcel

Based on the location of the Reserve boundary line as depicted through the 94-acre Point View (Lower Filiorum) property, it is estimated that approximately 40 to 45 acres of the property would be dedicated to the Reserve. Although a more precise location of the Reserve boundary will be determined before the Implementing Agreement is signed, at a minimum the Reserve area must be at least 40 acres in size and the minimum reserve corridor width should be no less than 300 feet in width at its narrowest location. The 40 acres of dedicated Reserve include 1.5 acres to be provided as mitigation for previous brush clearing activities and 38.5 acres of mitigation for CSS and grassland losses resulting from any future development of the 95-acre Lower Filiorum parcel.

The inclusion of Lower Filiorum acreage in the Reserve will be a condition of approval for any development project subsequently approved for the Lower Filiorum property. If no approvals are obtained, there will be no obligation on the part of present or future property owner to donate these lands. Designating these lands as included in the Reserve in the text and maps of this Subarea Plan does not constitute approval of development on the Lower Filiorum property.

2. Seven local Homeowners Associations (HOA) are being requested to contribute 136.6 acres of open space to the Reserve:

- 11.5 acres belonging to the Panorama Estates HOA
- 18 acres belonging to the Portuguese Bend Club
- 20 acres belonging to the Sea Breeze HOA
- 42.3 acres belonging to the Peninsula Pointe HOA
- 16.6 acres belonging to the Sunset Ridge HOA
- 13.2 acres belonging to the Seacliff Hills HOA
- 15 acres belonging to the Rancho Palos Verdes Estates HOA

The City and PVPLC are actively working with these HOAs to sign agreements to include a portion of their open space lots within the Reserve to be actively managed by the PVPLC. Because they currently are not accessible for active habitat management, they are not included in the Reserve. If agreements can be reached with the property owners to allow management, these lands will be added to the Reserve. Until such agreements are obtained, however, these lands are categorized as Neutral Lands that cannot be developed and habitat loss is not permitted except for compatible uses identified in this Subarea Plan. These lands can be incorporated into the reserve system through the “Additions to the Reserve process”(Section 5.9.1).

3.1.3 Private Lands to be Purchased (684.5 acres)

1. The City, PVPLC, Los Angeles County, and the Wildlife Agencies will provide funds for the purchase and dedication of the Reserve 684.5 acres of privately owned lands considered regionally important:
 - 422.3-acre Portuguese Bend Parcel (397.3 acres will be included in the Reserve, and 25.0 acres in the lower active landslide area will be an “active recreation area” outside of the Reserve that would serve as a public-access point to trail network within the Reserve and could include an equestrian facility.)
 - 43.8-acre Agua Amarga Canyon Parcel
 - 218.4-acre Upper and Middle Filiorum Parcels

3.1.4 Regionally Important Habitat Areas and Linkages Conserved

Figure 2-3 shows the Regionally Important Habitat Areas. Approximately 78 percent of the RIHAs are included within the Reserve, as are all primary habitat linkages between relatively large patches of habitat, including a key linkage associated with proposed development within Lower Filiorum. Existing linkages to habitat areas elsewhere on the Peninsula will also be conserved. Planned linkages are consistent with reserve design guidelines in terms of dimensions and habitat characteristics (Mock et al., 1992; Soule, 1991; Beier and Loe, 1992; Lovio, 1996).

3.1.5 Habitat Restoration/Enhancement Potential

A significant portion of the undeveloped lands within Rancho Palos Verdes support nonnative plant communities. As funding becomes available, these communities will be restored to native plant communities to increase the local habitat carrying capacity of covered species. All restoration will benefit covered species and will not result in decreasing conservation of vegetation necessary to support covered species.

Non-native habitats that can be restored to native scrub habitats include non-native grassland and disturbed vegetation communities, disturbed areas, and previously developed areas within the Reserve boundary. The restoration potential of degraded lands was assessed during the Phase 1 program to allow for prioritization of restoration efforts within the context of preliminary alternative reserve designs. The areas of potential habitat restoration within the Reserve are shown in Figure 3-3. Areas with the greatest

potential for successful restoration within Regionally Important Habitat Areas of the Reserve should have the highest priority for restoration funding.

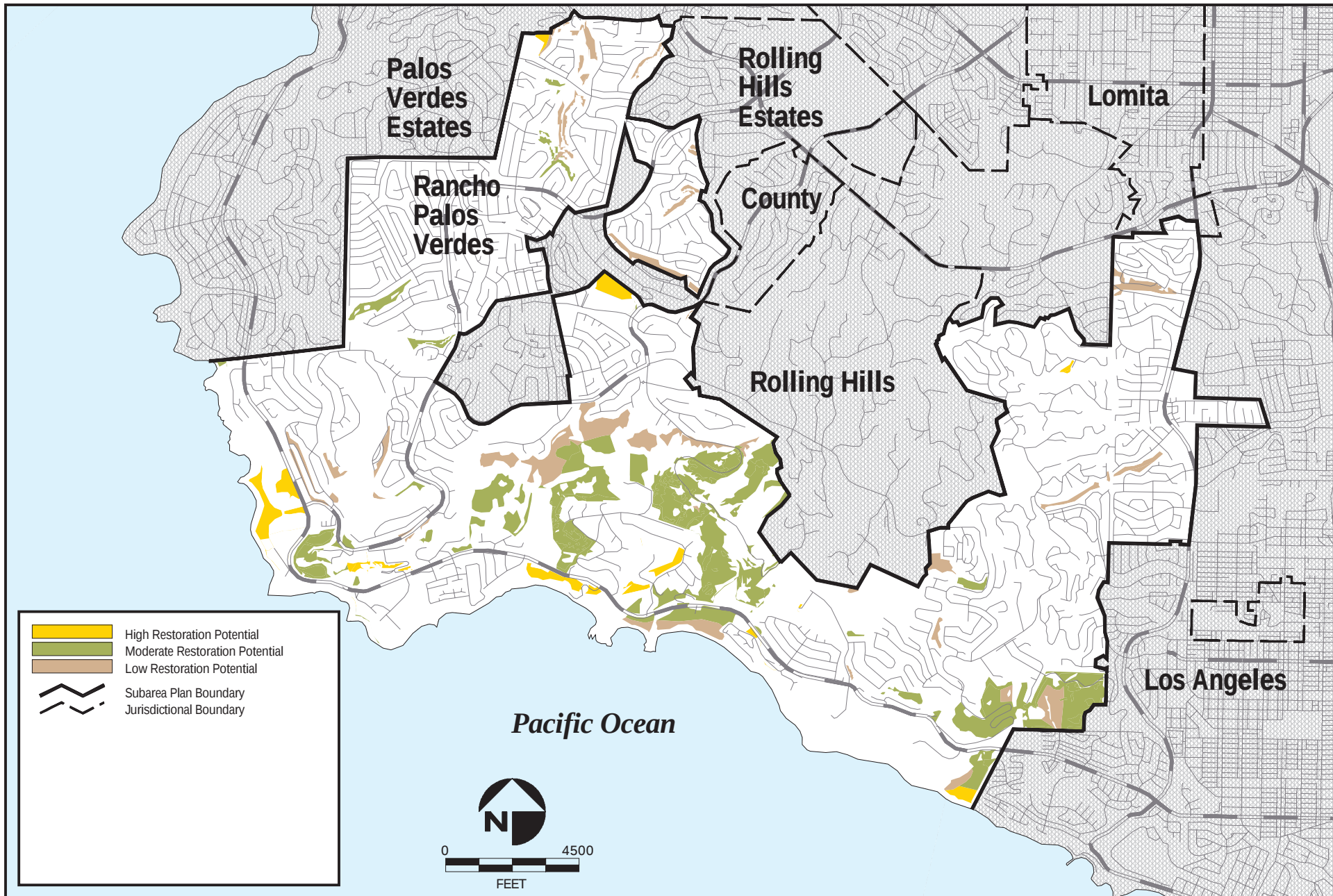
Current habitat restoration programs within the proposed Reserve include 30 acres of CSS revegetation on the Oceanfront Estates property and 50 acres of CSS revegetation associated with the Ocean Trails development. The City and PVPLC are committed to enhancing the Reserve with a long-term habitat restoration program as detailed below. Additional restoration work will be facilitated by the existence of the restoration program as additional grant funds and required mitigation work add to the scope of the restoration effort. Over the life of this Subarea Plan, the amount of sage scrub habitats within the Reserve could potentially exceed the current inventory of CSS within Rancho Palos Verdes. Over 642 acres of disturbed/developed areas, non-native grassland, and other non-native habitats assessed as having high to moderate potential of being successfully restored are within the Reserve, and would be available for restoration as funds become available (Figure 3-3). The priority for restoration would be to enlarge existing patches of CSS in the larger blocks of conserved lands within the Reserve that support covered species and enhance the habitat linkages between large blocks of habitat to improve linkage function. This restoration program will provide the opportunity to expand or create new populations of covered species by providing new suitable habitat for covered species.

3.1.6 Proposed Potential Loss of Habitats

The City has identified 21 City projects and 9 private projects that will be covered by this Subarea Plan, resulting in unavoidable loss of approximately 55.4 acres of CSS and 187.3 acres of non-native grassland within or outside the proposed Reserve (Tables 3-2 and 3-3). Mitigation for these habitat impacts will be at a 3:1 ratio (conserved or restored acreage to affected acreage) for CSS and a 0.5:1 ratio for non-native grasslands. Mitigation for impacts of City projects (40.2 acres of CSS and 106.3 acres of non-native grassland) will be provided by the dedication of 322.2 acres of City-owned land and 5.6 acres of revegetation within the Reserve (2.1 acres of revegetation has already been completed). Mitigation for impacts of private projects will be provided by dedication of private land or donation of monies to the habitat restoration fund by the private entities.

A total of 13.7 acres of sage scrub habitats and 72 acres of non-native grassland are estimated to occur outside the boundaries of the Reserve and Neutral Lands and are not associated with planned projects detailed in this Subarea Plan (Table 3-1). Any potential unanticipated future impacts to habitats outside the Reserve would be mitigated through dedication of additional acreage to the Reserve or restoration of priority areas within the Reserve at a 3:1 mitigation ratio for CSS and other native habitats, and a 0.5:1 ratio for non-native grassland.

A small amount of riparian scrub (0.1 acres) is excluded from the Reserve. Additional unmapped riparian habitats, other waters, or native grassland may also occur outside the Reserve. Wetland habitats and streambeds within this Subarea Plan area would be subject to CWA Sections 401 and 404 and Fish and Game Code 1602 permit requirements if they are included within areas proposed for development. Impacted vegetated wetlands would be mitigated at a 3:1 ratio.



FIGURE

3-3

Native grasslands greater than 0.3 acre documented during subsequent project-specific environmental review would be mitigated at a 3:1 ratio. Native grasslands are defined as patches greater than 0.3 acre in area that supports at least 50 percent cover of grass species and 10 percent cover of native grassland species.

No fuel modification areas for new development will be allowed within the Reserve. Fuel modification impacts to sensitive habitats from new development would be assessed as part of the development impact area and mitigated at a 3:1 ratio for CSS and 0.5:1 ratio for non-native grassland.

Approximately 43.3 acres of other habitats (19.2 acres of exotic woodland and 24.1 acres of disturbed vegetation) are excluded from the Reserve and Neutral Lands and would be available for potential development. Any incremental biological value that these non-sensitive habitats may have would be offset by the proposed reserve design, habitat restoration, and habitat management programs included in this Subarea Plan.

City Projects

The following City Capital Improvement Plan (CIP) Projects have or will involve an unavoidable loss of 40.2 acres of CSS and 106.3 acres of non-native grassland (Table 3-2, Figure 3-4). These impacts will be mitigated by the dedication of 322.2 acres of City-owned land and 5.6 acres of revegetation within the Reserve (2.1 acres of revegetation has already been completed).

1 Altamira Canyon Drainage Project (Proposed)

The City proposes to place an impermeable liner along the portion of the Canyon that traverses the active landslide area to prevent water from percolating into the landslide. The removal of the Canyon's existing vegetation will cause the loss of 2.5 acres of CSS habitat and 3.0 acres of non-native grassland. The City proposes 2.5 acres of onsite CSS revegetation, 5 acres of offsite CSS mitigation, and 1.5 acres of offsite non-native grassland mitigation. However, if the onsite revegetation is not feasible, all 7.5 acres of CSS will be provided off site (city property dedication).

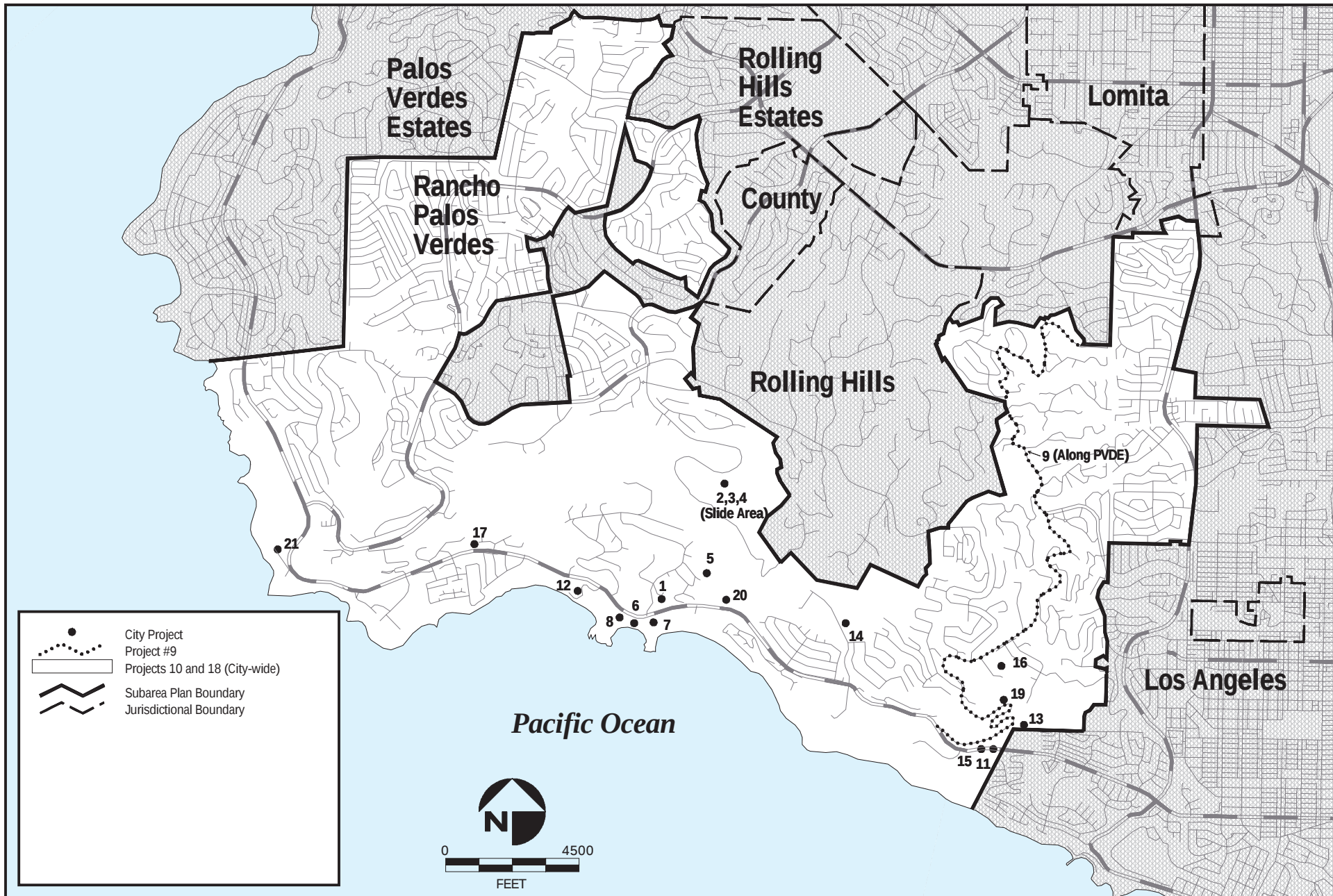
2. Dewatering Wells (Proposed)

The installation of dewatering wells within the Portuguese Bend landslide area by the City has proven to be an effective method of slowing down landslide movement by removing groundwater from the slide plane. It is anticipated that at least 10 wells will be installed in the future in or near areas of existing CSS habitat and grassland throughout the landslide area. It is estimated that such CSS habitat losses would total 2.5 acres (0.25×10) and non-native grassland loss would total 2.5 acres. The City proposes 7.5 acres of offsite CSS mitigation and 1.25 acres of offsite non-native grassland mitigation (city property dedication).

Table 3-2
Total Loss of Habitat by City Projects

City Project Name	Project Status	Habitat Loss (Acres)		Onsite Mitigation Acreage ¹		Offsite Mitigation Acreage ¹	
		CSS	Grassland	CSS	Grassland	CSS	Grassland
1. Altamira Canyon Drainage Project	Proposed	2.5	3.0	2.5	0.0	5.0	1.5
2. Dewatering Wells (10 Wells)	Proposed	2.5	2.5	0.0	0.0	7.5	1.25
3. Misc. Fissure Filling	Proposed	3.0	3.0	0.0	0.0	9.0	1.5
4. Misc. Damaged Drain Repair	Proposed	5.0	15.0	0.0	0.0	15.0	7.5
5. Portuguese Canyon Drainage Project	Completed	0.5	N/A ²	0.0	N/A ²	1.5	N/A ²
6. Sacred Cove Geologic Investigation	Completed	0.1	N/A ²	0.0	N/A ²	0.3	N/A ²
7. PVDS Roadway Rehabilitation	Completed	0.2	N/A ²	0.0	N/A ²	0.6	N/A ²
8. PVDS Emergency Washout Project	Completed	0.4	N/A ²	0.0	N/A ²	1.2	N/A ²
9. PVDE Drainage Improvement Project	Proposed	4.0	12.0	0.0	0.0	12.0	6.0
10. Misc. Drainage Improvement Projects	Proposed	10.0	24.0	0.0	0.0	30.0	12.0
11. 25th Street Road Repair (Phase 2)	Completed	0.4	N/A ²	0.4	N/A ²	0.8	N/A ²
12. Abalone Cove Beach Project	Proposed	0.2	1.0	0.6	0.0	0.0	0.5
13. Tarapaca Sewer Line Relocation	Completed	0.5	N/A ²	0.0	N/A ²	1.5	N/A ²
14. Forrestal Property Trail Clearing	Completed	0.1	N/A ²	0.0	N/A ²	0.3	N/A ²
15. 25th Street Road Repair (Phase 1)	Completed	0.1	N/A ²	0.1	N/A ²	0.2	N/A ²
16. San Ramon Canyon Repair	Completed	1.0	N/A ²	2.0	N/A ²	1.0	N/A ²
17. McCarrell Canyon Outlet Improvement	Completed	0.2	N/A ²	0.0	N/A ²	0.6	N/A ²
18. RPV Trails Plan Implementation	Proposed	5.0	15.0	0.0	0.0	15.0	7.5
19. Lower San Ramon Canyon Repair	Proposed	2.0	6.0	0.0	0.0	6.0	3.0
20. Active Recreation Area	Proposed	1.0	13.6	0.0	0.0	3.0	6.8
21. Lower Point Vicente	Proposed	1.5	11.2	0.0	0.0	4.5	5.6
Total Acreage of Habitat Loss		40.2	106.3	5.6	0.0	115.0	53.15

1. City would provide mitigation acreage as part of the City-owned lands to be dedicated to the Reserve based on a 3:1 mitigation ratio for CSS and 0.5:1 ratio for non-native grassland, and accounting for onsite habitat restoration of temporarily disturbed habitat areas.
2. City would provide mitigation for non-native grassland loss for proposed projects only. Acreage of impacts and mitigation for non-native grassland is therefore not provided for completed projects.



FIGURE

3-4

3. *Misc. Fissure Filling (Proposed)*

From time to time, the filling of fissures by the City becomes necessary in the active Portuguese Bend landslide area to safeguard trails, roads and drainage systems. It is anticipated that there will be a need to fill such fissures on an as-needed basis. It is estimated that such activity would result in the combined loss of 3 acres of CSS habitat and 3 acres of non-native grassland. The City proposes 9 acres of offsite CSS mitigation and 1.5 acres of offsite non-native grassland mitigation (city property dedication).

4 *Misc. Drainage Repair (Proposed)*

From time to time, the repair of existing drainage systems becomes necessary by the City in the Portuguese Bend landslide area because of excessively heavy rainfall or damage by landslide movement. It is anticipated that there will be a need to repair such drains on an as-needed basis. It is estimated that such activity would result in the combined loss of 5 acres of CSS habitat and 15 acres of non-native grassland. The City proposes 15 acres of offsite CSS mitigation and 7.5 acres of offsite non-native grassland mitigation (city property dedication).

5 *Portuguese Canyon Drainage Project (Completed)*

This City project involved the installation of a drainage pipe at the bottom of Portuguese Canyon in 1995. The project resulted in a loss of 0.5 acres of CSS habitat. The City proposes 1.5 acres of offsite mitigation (city property dedication).

6. *Sacred Cove Geologic Investigation Project (Completed)*

This City project involved the grading of a road from Palos Verdes Drive South down to the shoreline in June 1995, to perform a series of geologic borings at the shoreline. The project resulted in a loss of 0.1 acre of CSS habitat. The City proposes 0.3 acre of offsite mitigation (city property dedication).

7. *PVDS Roadway Rehabilitation Project (Completed)*

This City project involved the repair of a segment of damaged Palos Verdes Drive South roadway in 2001 that is located within the active Portuguese Bend Landslide. The City reconstructed the roadway between Peppertree Lane and Klondike Canyon and replaced the storm drains underneath the roadway. The project resulted in a loss of 0.2 acre of CSS habitat adjacent to the roadway. The City proposes 0.6 acre of offsite mitigation (city property dedication).

8. *PVDS Emergency Washout Project (Completed)*

This City project was completed in December 2001 and involved the emergency stabilization and repair of an existing storm drainage pipe, located between Palos Verdes Drive South and Inspiration Point. The pipe had been severed because of movement of an underlying landslide caused by the 1999/2000 storm season, which eroded the area underneath the pipe and created a washout area that extended to the beach below. The related grading adjacent to the roadway resulted in a loss of 0.4 acre of CSS habitat. The City proposes 1.2 acres of offsite mitigation (city property dedication).

9. *PVDE Drainage Improvement Project (Proposed)*

Based on a comprehensive drainage study, the City has identified numerous drainage system deficiencies in the eastern portion of the city along Palos Verdes Drive East. To address these drainage deficiencies,

the City proposes to carry out 17 individual drainage improvement projects over an extended period of time. Although it is anticipated that most of the projects will occur within the existing improved street right-of-way, some projects may necessitate work in the adjoining canyon areas. It is estimated that such activity would result in the combined loss of 4 acres of CSS habitat and 12 acres of non-native grassland. The City proposes 12 acres of offsite CSS mitigation and 6 acres of offsite non-native grassland mitigation (city property dedication).

10. Misc. Drainage Improvements (Proposed)

The City anticipates that there will be the need to repair or improve other drainage systems in areas of the city that are not located within the Portuguese Bend Landslide Area or the PVDE drainage study area. It is also anticipated that some of the projects may necessitate work in habitat areas. It is estimated that such activity would result in the combined loss of 10 acres of CSS habitat and 24 acres of non-native grassland. The City proposes 30 acres of offsite CSS mitigation and 12 acres of offsite non-native grassland mitigation (city property dedication).

11. 25th Street Road Repair – Phase 2 (Completed)

This City project was completed in 2002 and involved the repair of instability and settlement beneath the Palos Verdes Drive South roadway (adjacent to 25th Street in San Pedro). Phase 2 included the installation of a drainage system on the surface of the slope. The project resulted in a loss of 0.4 acre of CSS habitat. The City has completed 0.4 acre of onsite mitigation and proposes 1.2 acres of offsite mitigation (city property dedication).

12. Abalone Cove Beach Project (Proposed)

The City proposes to improve public access and beach amenities at the existing Abalone Cove beach site. The project involves the construction of a restroom/storage area, a gate house, parking lot, and shade structures, as well as improving the access road that leads from Palos Verdes Drive South to the beach and foot trails in the area. The grading associated with the proposed project will cause the loss of 0.2 of CSS habitat and 1 acre of non-native grassland. The Resource Agencies and Coastal Commission have required 0.5 acre of CSS revegetation, all of which will be performed on site. The amount of CSS mitigation required is 0.1 acre short of a 3:1 mitigation ratio. The City proposes 0.5 acre of offsite non-native grassland mitigation (city property dedication). Although this project is not being proposed at this time, it is likely that the project will be actively pursued during the life of this plan.

13. Tarapaca Sewerline Relocation (Completed)

This project was performed by the LA County Sanitation Department in May 1998 to relocate its Tarapaca sewerline around the Tarapaca landslide. The relocation project included demolition of a bridge that carried the pre-existing sewerline across San Ramon Canyon. The demolition of the bridge caused a loss of 0.5 acre of CSS habitat. At the time of the project, the City agreed to mitigate for the loss so that the work could proceed without delay. The City proposes 1.5 acres of offsite mitigation (city property dedication).

14. Forrestal Property Trail Improvement (Completed)

In an effort to repair erosion damage, a trail on the City's Forrestal property was widened by the City in July 1998. The Quarry Bowl trail, which leads from Forrestal Drive to the Quarry Bowl, was widened from approximately 2 to 6 feet. In performing the widening, a loss of 0.1 acre of CSS habitat occurred. The City proposes 0.3 acre of offsite mitigation (city property dedication).

15. 25th Street Road Repair – Phase 1 (Completed)

This City project was completed in 1999 and involved the repair of instability and settlement beneath the Palos Verdes Drive South roadway (adjacent to 25th Street in San Pedro). Phase 1 included the installation of a series of horizontal sub-drains into the adjacent fill slope. The project resulted in a loss of 0.1 acre of CSS habitat. The City has completed 0.1 acre of onsite habitat restoration and proposes 0.2 acre of offsite mitigation (city property dedication).

16. San Ramon Canyon Repair Project (Completed)

This City project was completed in 2002 and involved the stabilization of the upper reach of San Ramon Canyon. The project involved remedial grading to construct a buttress fill to stabilize the area and the reconstruction of a drainage system. The grading within the canyon resulted in a loss of 1.0 acre of CSS habitat. The City has completed 2.0 acres of onsite revegetation and proposes 1.0 acre of offsite mitigation (city property dedication).

17. McCarrell Canyon Outlet Clearing (Completed)

This City project was completed in November 1997 and involved the removal of overgrown vegetation at the outlet of the canyon before the onset of winter rains to improve the performance of the drain. The vegetation removal resulted in a loss of 0.2 acre of CSS habitat. The City will perform 0.6 acre of offsite mitigation (city property dedication).

18. Rancho Palos Verdes Trails Plan Implementation (Proposed)

It is anticipated that implementation of the City's Conceptual Trails Plan will result in the loss of some CSS habitat. Although, the establishment of new trails through CSS habitat will be avoided where possible, it is anticipated that some trail maintenance, erosion repair and re-routing for public safety reasons may not be avoided within habitat areas. It is estimated that such activities would result in the combined loss of 5 acres of CSS habitat and 15 acres of non-native grassland. The City proposes 15 acres of offsite CSS mitigation and 7.5 acres of offsite non-native grassland mitigation (Barkentine property dedication).

19. Lower San Ramon Canyon Repair (Proposed)

It is anticipated that the City will need to do some remedial grading in Lower San Ramon Canyon to prevent a landslide from blocking water flow in the canyon. Geologic studies have identified a landslide in the canyon that has the potential to create blockage of the stream flow. Blockage of the stream flow could cause water to percolate into the adjacent South Shores Landslide. It is estimated that the grading activity would result in the loss of 2.0 acres of CSS habitat and 6.0 acres of non-native grassland. The City proposes 6.0 acres of offsite CSS mitigation and 3.0 acres of offsite non-native grassland mitigation (city property dedication).

20. *Active Recreation Area (Proposed)*

The City is proposing to locate a recreation area within the Portuguese Bend active landslide area of the city to provide a staging area for accessing the Reserve trail system to provide recreation uses, including but not limited to a potential equestrian facility. The area would encompass approximately 25 acres and be located adjacent to Palos Verdes Drive South between the Cherry Hill privately owned lots and Klondike Canyon. The area lies within the active Portuguese Bend Landslide and is completely disturbed because of previous landslide stabilization activities. The uses of this area would be determined through the Public Use Master Plan process, and could include equestrian riding rings and stables, outdoor educational program areas, and unpaved vehicular access roads and parking areas. It is anticipated that development of the facility will result in a maximum of 1.0 acre of CSS habitat loss and 13.6 acres of non-native grassland. The City proposes 3.0 acres of offsite CSS mitigation and 6.8 acres of offsite non-native grassland mitigation (city property dedication).

21. *Lower Point Vicente (Proposed)*

The City is considering developing recreational uses in an area of City-owned land referred to as Lower Pt. Vicente. The property is located between the Pt. Vicente Lighthouse property owned by the Coast Guard and the CPH residential development project. It is anticipated that development of the site may result in a maximum of 1.5 acre of CSS habitat loss and 11.2 acres of non-native grassland loss. The City proposes 3.0 acres of offsite CSS mitigation and 5.6 acres of offsite non-native grassland mitigation (city property dedication).

Private Projects

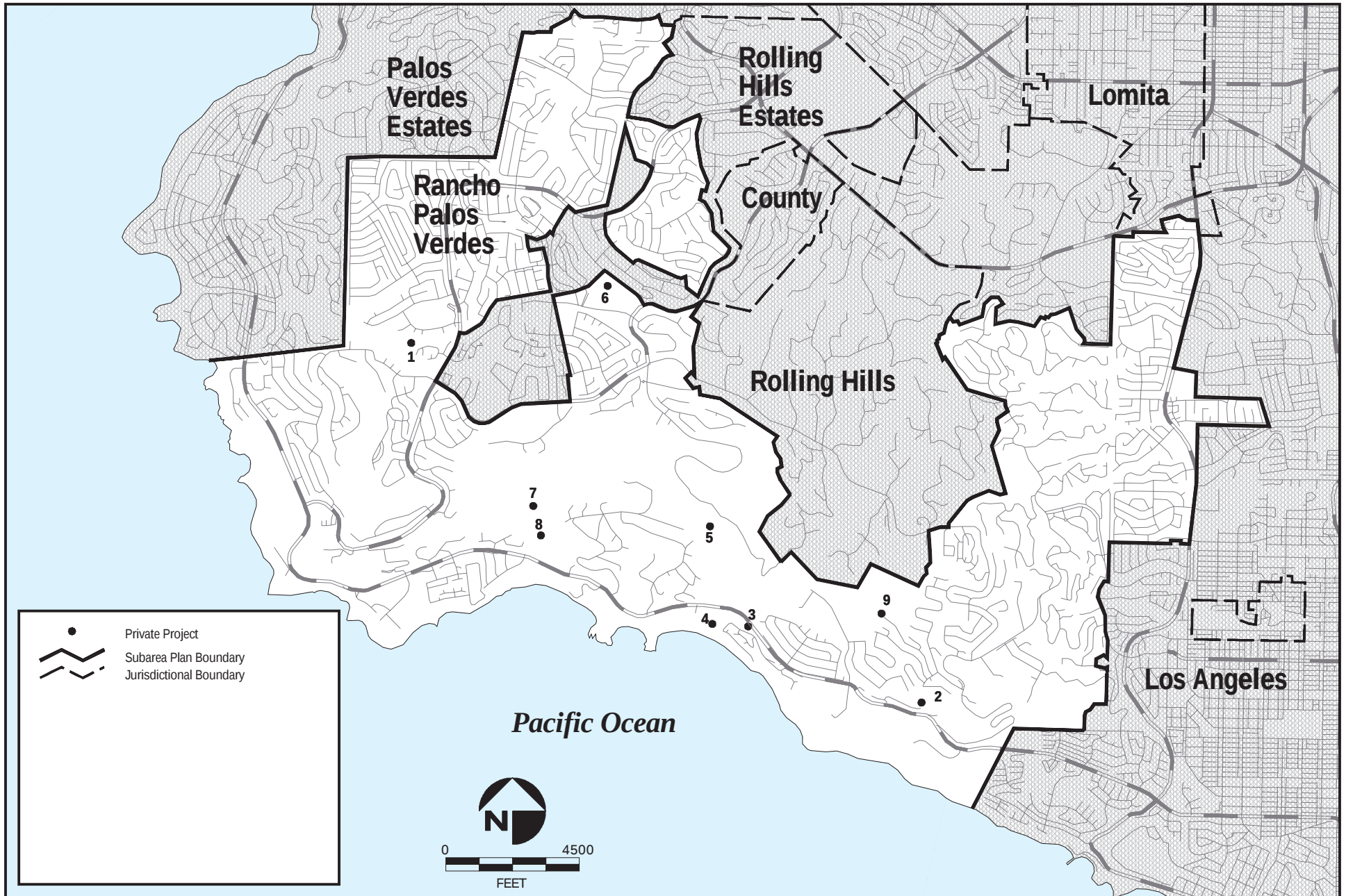
The City expects 9 recent and future planned private projects will involve unavoidable loss of 15.2 acres of CSS and 81.0 acres of non-native grassland (Figure 3-5). Table 3-3 includes recent past projects and planned future projects. Mitigation for these losses would include dedication to the Reserve of 3.9 acres by the City and 82.2 acres provided by the project applicants as additions to the Reserve or equivalent funds for habitat restoration of disturbed areas within the Reserve.

1. *Brush Clearance at Windport Canyon (Completed)*

In 1994, unauthorized vegetation clearing occurred on vacant private property by then owner Steve Taylor, in the upper portion of Windport Canyon. The clearing resulted in the estimated loss of 0.5 acre of CSS habitat. The City, as lead agency for the preparation of the NCCP, has taken responsibility to mitigate for the loss and 1.5 acres of offsite mitigation is proposed (city property dedication).

2. *Brush Clearance at 3303 Palo Vista (Completed)*

In 1996, unauthorized vegetation clearing occurred on the developed private property known at 3303 Palo Vista. The clearing occurred on the resident's rear yard slope, which resulted in the estimated loss of 0.3 acre of CSS habitat. The City, as lead agency for the preparation of the NCCP, has taken responsibility to mitigate for the loss and 0.9 acre of offsite mitigation is proposed (city property dedication).



FIGURE

3-5

Locations of Private Projects Covered by the Plan

**Table 3-3
Total Loss of Habitat by
Private Projects and Mitigation**

Private Project Name	Project Status	Habitat Loss (Acres)		Mitigation by City ¹		Mitigation By Project Applicant ²	
Private Projects with City-Provided Mitigation							
		CSS	Grassland	CSS	Grassland	CSS	Grassland
1. Brush Clearance at Windport Canyon	Completed	0.5	N/A ³	1.5	N/A ³	0.0	N/A ³
2. Brush Clearance at 3303 Palo Vista	Completed	0.3	N/A ³	0.9	N/A ³	0.0	N/A ³
3. Portuguese Bend Club Slope Repair	Completed	0.5	N/A ³	1.5	N/A ³	0.0	N/A ³
Subtotal City-Provided Mitigation		1.3	N/A ³	3.9	N/A ³	0.0	N/A ³
Other Private Projects							
		CSS	Grassland	CSS	Grassland	CSS	Grassland
4. Portuguese Bend Club Remedial Grading	Proposed	3.0	10.0	0.0	0.0	9.0	5.0
5. Hon Geologic Investigation	Completed	0.6	N/A ³	0.0	N/A ³	1.8	N/A ³
6. Crestridge Development	Proposed	2.0	12.0	0.0	0.0	6.0	6.0
7. Brush Clearance at Lower Filiorum	Completed	0.5	N/A ³	0.0	N/A ³	1.5	N/A ³
8. Lower Filiorum Development	Proposed	7.3	59.0	0.0	0.0	21.9 ⁴	29.5 ⁴
9. Coolheights Residential Lot Development	Completed	0.5	N/A ³	0.0	N/A ³	1.5	N/A ³
Subtotal Other Private Projects		13.9	81.0	0.0	0.0	41.7	40.5
Total Acreage Private Projects		15.2	81.0	3.9	0.0	41.7	40.5

1. City would provide mitigation acreage as part of the City-owned lands to be dedicated to the Reserve at a 3:1 mitigation ratio for CSS and 0.5:1 ratio for non-native grassland.
2. Habitat mitigation at a 3:1 ratio for CSS and 0.5:1 ratio for non-native grassland in the form of habitat contributed to the reserve or funds for habitat restoration within the reserve.
3. City would provide mitigation for non-native grassland loss for proposed projects only. Acreage of impacts and mitigation for non-native grassland is therefore not provided for completed projects.
4. Project applicant would dedicate a total of 40 onsite acres to the Reserve and an additional 11.4 offsite acres or equivalent habitat restoration funds.

* Please note that some anticipated impacts are preliminary estimates and could change during subsequent project specific CEQA analysis.

3. Portuguese Bend Club Slope Repair (Completed)

In June 1996, remedial grading was undertaken by the Portuguese Bend Club, a private residential community, to stabilize a failing slope that was threatening the main access road to the community and adjoining homes. The slope repair was performed on private property owned by the Beach Club and involved 20,000 c.y. of cut and 5,000 c.y. of fill for a buttress at the toe of the slope, adjacent to Yacht Harbor Drive. The project resulted in the estimated loss of 0.5 acre of CSS habitat. At the time, the City

agreed to mitigate for the loss so that the emergency work could occur without delay. The City proposes 1.5 acres of offsite mitigation (city property dedication).

4. *Portuguese Bend Club Remedial Grading (Proposed)*

Because of its proximity to the active Klondike Canyon Landslide, the homeowners association of the gated residential community known as the Portuguese Bend Club periodically needs to perform remedial grading on its property to prevent damage to its roads and to resident's homes. The remedial grading activity usually takes place on property owned by the association, located on the western end of the community, between the residences and adjoining City-owned property. It is anticipated that the continuous remedial grading activity will result in a loss of 3.0 acres of CSS habitat and 10.0 acres of non-native grassland. Any losses of habitat would be mitigated by the property owner through 14.0 acres of habitat to be contributed to the reserve or funds for habitat restoration within the Reserve.

5. *Hon Geologic Investigation (Completed)*

In February 1996, a geologic investigation project was undertaken within the Portuguese Bend Landslide area on vacant private property owned by Barry Hon. The project involved the creation of access roads and clearings to conduct a series of geological borings. The project resulted in the estimated loss of 0.6 acre of CSS habitat. The loss is proposed to be mitigated by the property owner through the contribution of 1.8 acres of privately owned land to the Reserve.

6. *Crestridge Development (Proposed)*

A project is proposed on privately owned land and City-owned land that would involve the development of age-restricted condominiums, a public park, and a senior center. The project site is located along Crestridge Road, between Crenshaw Blvd. and existing Institutional uses. It is anticipated that development of the project will result in a loss of 2.0 acres of CSS habitat and 12.0 acres of non-native grassland. Any losses of habitat would be mitigated by the property owner through 12.0 acres of habitat to be contributed to the Reserve or funds for habitat restoration within the Reserve.

7. *Brush Clearance at Lower Filiorum (Completed)*

In November 2000, unauthorized vegetation clearing occurred on vacant private property owned by York Long Point Associates. The clearing occurred in the northwest portion of the privately owned property referred to as Lower Filiorum. The clearing resulted in the estimated loss of 0.5 acre of CSS habitat. The loss is proposed to be mitigated by the property owner through the dedication of 1.5 acres of privately owned land to the Reserve.

8. *Lower Filiorum Development (Proposed)*

A project is proposed on privately owned land that would involve the exclusion of approximately 62 acres from the City's Moratorium Area and a subsequent residential development encompassing approximately 55 acres. The project site is located north of Palos Verdes Drive South, between the Wayfarers Chapel and the Upper Abalone Cove residential tract. It is anticipated that development of the project will result in a loss of 7.3 acres of CSS habitat and 59.0 acres of non-native grassland. Losses of habitat would be mitigated by the project proponent through dedication of 40 onsite acres to the Reserve and 11.4 offsite acres to the Reserve (or equivalent habitat restoration funds).

9. *Coolheights Residential Lot Development (Completed)*

A project has been approved that involves the construction of a new single-family residence on a vacant lot at 3787 Coolheights Drive. Because the property is located adjacent to a natural canyon, the LA County Fire Department regulations require a significant amount of brush clearance for fire protection purposes. The required brush clearance resulted in the loss of 0.5 acre of CSS habitat. The property owner has mitigated the loss at a 3:1 ratio by establishing a conservation easement over 1.5 acres of his property.

3.1.7 Covered Species List

Through the configuration of the proposed City reserve design, and implementation of the habitat restoration and management programs, all 12 proposed covered species listed in Table 1-1 would be adequately conserved by this Subarea Plan. The covered species include all species listed as endangered or threatened by the State and/or Federal ESA, as well as selected species that are currently not listed, but could be listed during the permit period. Once the Wildlife Agencies have approved this Subarea Plan and signed the Implementing Agreement, the City will receive permits and/or management authorizations to directly affect or “take” individuals of listed species covered by this Subarea Plan. The term “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect. Take will be allowed for Covered Species in one of two categories: 1) Covered Species not listed and 2) Covered Species subject to Incidental Take (i.e., listed species). When an unlisted covered species becomes listed, it will continue to receive coverage under this Subarea Plan, only under the latter category.

The Implementing Agreement will assure that the conservation/mitigation identified in this Subarea Plan and implementing regulations are implemented and the City will not be required to commit additional land, land restrictions, or financial compensation, beyond that described in this Subarea Plan, for the protection of any covered species. If in the future, a covered species not listed becomes listed as endangered or threatened by the Federal or State governments, the take authorization will become effective concurrent with its listing.

The standards for protecting covered species and issuance of take authorizations contained in this Subarea Plan are consistent with the State’s NCCP Planning Guidelines (CDFG, 1993), the State ESA, and criteria in Section 10(a) of the Federal ESA. This Subarea Plan meets the following key NCCP planning criteria in the NCCP Planning Guidelines:

1. Conserve target species throughout planning area:
 - 96 percent of existing CSS habitat is conserved.
 - 93 to 100 percent of covered species locations are conserved.
 - A habitat-restoration program will contribute additional habitat to the Reserve, eventually exceeding the current inventory of CSS habitats in the city.
2. Larger reserves are better:
 - The largest, most contiguous habitat areas are included in the Reserve.
3. Keep Reserve areas close together:
 - Reserve planning areas are within a relatively small area and linked by corridors.

4. Keep habitat contiguous:
 - Most contiguous patches of habitat are within the Reserve.
5. Link Reserve areas with corridors:
 - All regionally important habitat linkages are conserved.
6. Reserves should be biologically diverse:
 - 93 to 100 percent of cover species locations are conserved.
 - 96 percent of existing CSS habitat is conserved.
 - All known native habitat types are included in the Reserve (upland scrub habitats [11 subtypes] and riparian scrub).
7. Protect Reserves from encroachment:
 - A habitat management and monitoring program is included in this Subarea Plan.
 - A habitat restoration program is included in this Subarea Plan.

This Subarea Plan is also consistent with the following criteria in Section 10(a) of the Federal ESA:

- The taking will be incidental to otherwise lawful activities;
- The impacts of the taking will, to the maximum extent practicable, be minimized and mitigated;
- Adequate funding for long-term protection of the species will be provided; and
- The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

3.1.8 Estimated Take of Covered Species

The proposed reserve design does not include all point locations where covered species have been sighted recently or historically. The GIS database developed for this Subarea Plan (Ogden 1999 and recently updated for *Crossosoma*) indicates that several species point locations are excluded from the Reserve (Table 3-4, Figure 3-6). If these locations are still occupied by the covered species, a take of a covered species is assumed if these areas are developed. In addition to habitat conservation, the restoration activities provided for in this Subarea Plan will increase the inventory of potential habitat for covered species by about 16 percent above the current inventory of CSS habitats within the city. A detailed conservation analysis and justification for incidental take for each covered species is provided in Appendix B. Because approximately 93 percent or more of the species point locations and approximately 96 percent of their potential habitats are being conserved and the long-term habitat restoration program is likely to substantially increase the availability of suitable habitat for covered species during the permit period, it is expected that the populations of covered species will increase over time, particularly for PV Blue Butterfly, California gnatcatcher, and cactus wren. The Reserve will provide the opportunity for the establishment of new populations of covered species where they are currently absent.

Table 3-4
Estimated Take of Covered Species Point Locations

Covered Species	Existing	Conserved ¹	Percent Conserved ¹	Expected Take
California Gnatcatcher	88	88	100.0	0
Coastal Cactus Wren	99	95	96.0	4
Historical PVB Butterfly Historical Sighting	18	17	94.4	1
Historical PVB Butterfly Host Plant, <i>Astragalus trichopodus</i>	84	78	92.9	5
El Segundo Blue Butterfly Sighting	1	1	100.0	0
El Segundo Blue Butterfly Host Plant, <i>Eriogonum parvifolium</i>	19	18	94.7	1
<i>Dudleya vires</i>	35	35	100.0	0
<i>Aphanisma blitoides</i>	26	26	100.0	0
<i>Atriplex pacifica</i>	8	8	100.0	0
<i>Crossosoma californicum</i>	3	3	100.0	0
<i>Calystegia peirsonii</i> ²	N/A	N/A	96.3	0
<i>Centromadia parryi</i> ssp. <i>australis</i> ²	N/A	N/A	96.3	0
<i>Lycium brevipes</i> var. <i>hassei</i>	3	3	100.0	0
<i>Pentachaeta lyonii</i> ²	N/A	N/A	96.3	0
<i>Suaeda taxifolia</i> ²	N/A	N/A	99.3	0

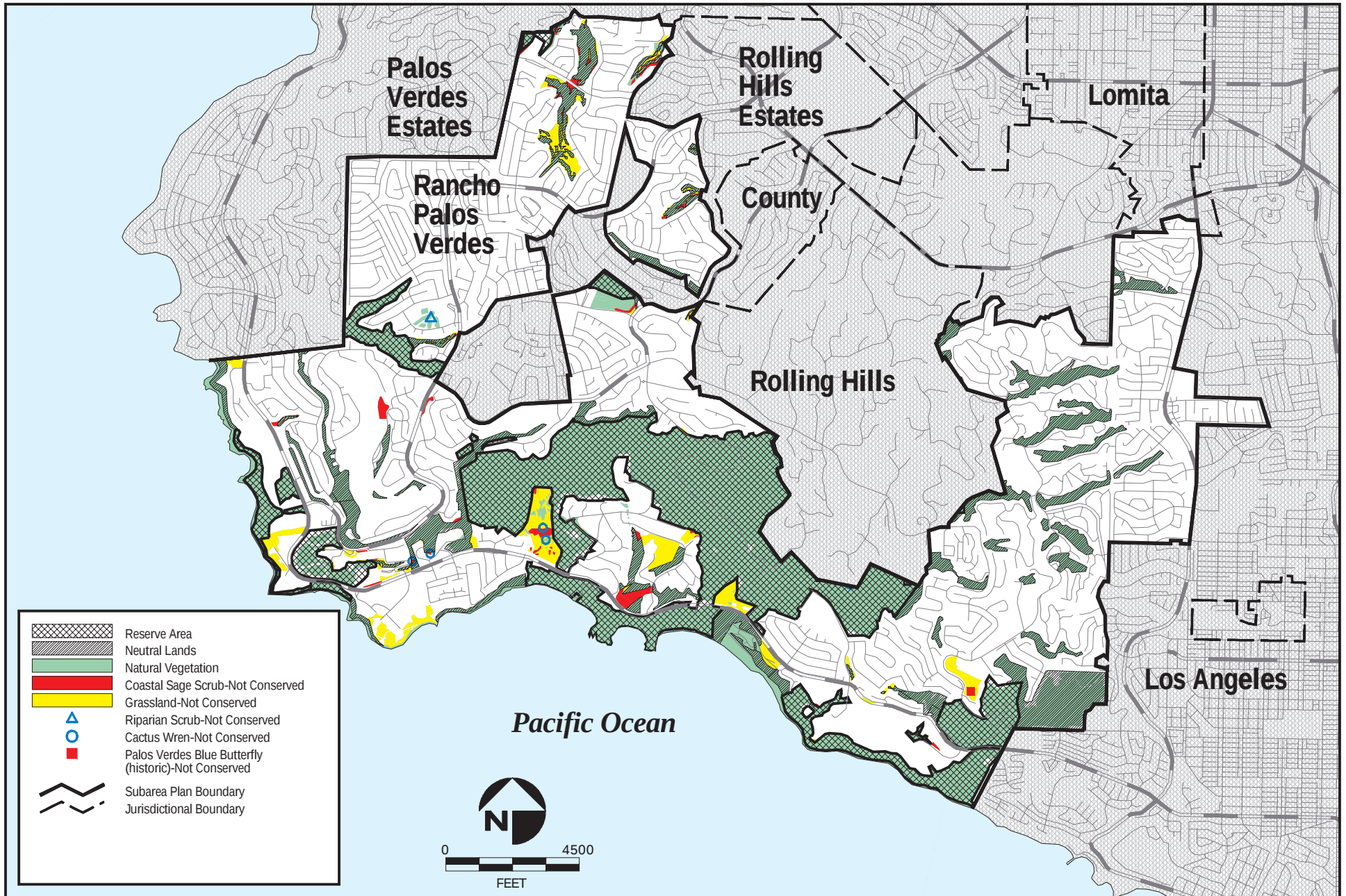
1. Includes point locations within Reserve and Neutral Lands.
2. *Calystegia peirsonii*, *Centromadia parryi* ssp. *Australis*, and *Pentachaeta lyonii* are not known to occur in the Subarea Planning area; *Suaeda taxifolia* occurs regularly within coastal bluff scrub, which is 99.3% conserved.

3.2 LAND USES WITHIN AND ADJACENT TO THE RESERVE

Within two years of the signing of the Implementing Agreement, a Public Use Master Plan (PUMP) shall be developed jointly by the City and PVPLC to address issues such as public access, trailhead locations, overlooks, parking, trail use, fencing, signage, lighting (if any), and firebrush management, minimizing impacts to adjacent neighborhoods, public involvement in advisory capacities, and other issues that may arise. The PUMP must be reviewed and approved by the Wildlife Agencies. Compatible lands uses within the Reserve and Neutral Lands would, to the extent practicable, be sited to minimize impacts to sensitive resources and are limited to the following:

- Creation and maintenance of a recreational trail system consistent with the City's Conceptual Trails Plan (dated 1993, and as amended by the city council thereafter). A Reserve Trail Plan (RTP) will be developed through the PUMP process, which is consistent with the City's Conceptual Trail plan and considers impacts to habitat and covered species.

- Existing trails within the Reserve not included in the Reserve Trail Plan approved by the city council will be closed and appropriate measures shall be taken to prevent public access and restore CSS habitat.
- Creation and maintenance of passive overlook areas with benches, picnic tables, tie rails, portable toilets, and trash cans, to be located near preserve boundaries where no existing habitat would be lost. The location of these overlooks shall consider impacts to habitat and covered species, and their location shall be reviewed and approved as a part of the PUMP by the city council and the Wildlife Agencies before any work to implement them is initiated. Overlooks and staging areas for trailheads will be located adjacent to existing roads and away from sensitive resource areas.
- Existing recreational uses, such as the archery range or paragliding activities, can be allowed in areas where impacts to habitat can be minimized.
- Where required, landslide abatement activities may occur within the Reserve and Neutral Lands. Such activities shall be scheduled outside the gnatcatcher breeding season if practicable. Temporary disturbance areas will be revegetated with CSS species after completion of abatement activities.
- Selected drainage improvements, linear utility easements, and existing access roads within the Reserve and Neutral Lands will be maintained and upgraded as required. An access protocol will be created to facilitate access by utility agencies to areas within the Reserve and Neutral Lands while minimizing, to the maximum extent possible, environmental damage.
- Emergency access roads.
- Geologic testing, if deemed necessary by the City's geotechnical consultants, with impacts to be minimized and unavoidable habitat impacts fully restored.
- Utilities and related infrastructure serving existing and future developments, such as sewers, water, cable, gas, electric, and storm drains.
- Water quality basins, retention basins, and debris basins, if such features are required to meet water quality standards, and if the design incorporates native vegetation where practicable and minimizes the amount of hardscape.
- Groundwater monitoring wells, and GPS stations for landslide monitoring, with associated equipment such as pumps, electrical, drainage pipes, and access pathways, if such equipment is deemed necessary by the City's geotechnical consultants.
- All brush management and fuel modification requested by the L.A. County Fire Department for new development should occur outside the Reserve. Existing brush management and fuel modification for existing development adjoining the Reserve boundaries may continue in the Reserve provided it is not expanded. Any new development adjacent to the Reserve that requires brush management within the Reserve shall mitigate impacts to CSS at a 3:1 mitigation ratio.
- Existing agricultural uses within the Reserve and Neutral Lands can be allowed to continue as long as all agricultural practices and improvements remain consistent with this Subarea Plan.



FIGURE

3-6

SECTION 4 PLAN IMPLEMENTATION

Any proposed development of land in the city would first require consistency with the appropriate provisions of the Municipal Code. Subsequent entitlements cannot be secured without compliance with applicable provisions of the General Plan, Zoning Ordinance, Grading Ordinance, Subdivision Map Act, and other applicable provision of the Municipal Code. Upon approval of this Subarea Plan, the City will use its land-use authority to implement the provisions of this Subarea Plan. Consistency with this Subarea Plan will be a mandatory finding of the CEQA review and planning process.

4.1 RESERVE COMPONENTS

The Reserve will be composed of public and private biological open-space lands as discussed below.

4.1.1 Existing Public Lands

City-owned lands (423.5 acres) already dedicated as biological open space to be included in the Reserve (Figure 4-1)

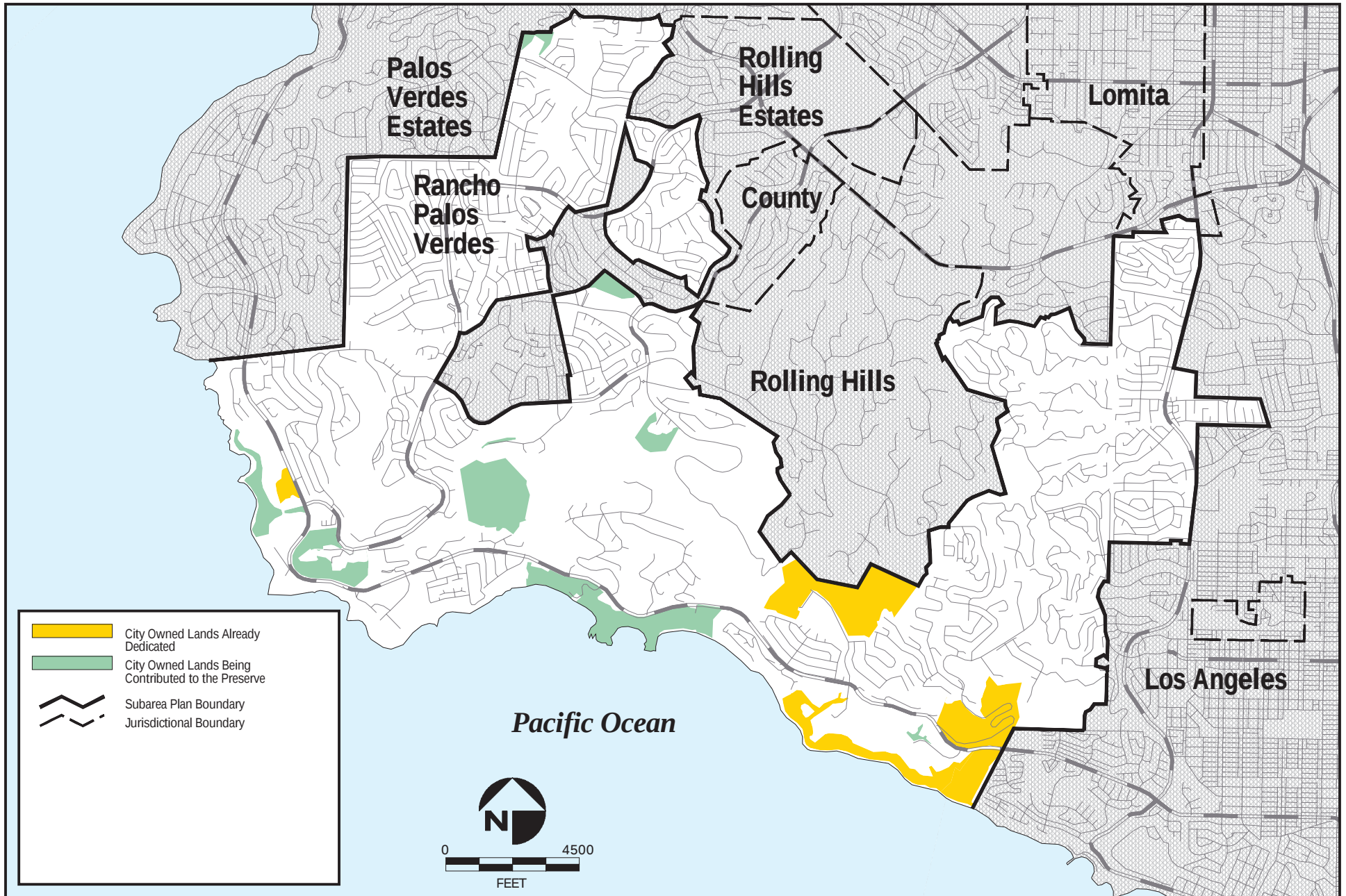
- 102.0-acre Switchbacks Parcel
- 53.0-acre Shoreline Park Parcel
- 163.0-acre Forrestal Parcel
- 69.0 acres within the Oceanfront Estates Project now owned by the City

City-owned lands to be dedicated to the Reserve (322.2 acres) upon adoption of the Implementation Agreement.

- 98.0-acre Barkentine Canyon (Parcel 4)
- 65 acres of Upper Point Vicente Parcel (City Hall Parcel)
- 10 acres of Lower Point Vicente Parcel
- 6 acres of the Fishing Access Property
- 100 acres of Abalone Cove Parcel
- 17.4-acre Del Cerro Buffer
- 16.8 acres of the Crestridge Parcel
- 9 acres of Grandview Park

Other Public/Conserved Lands (90.8 acres)

- 69.9 acres within the Ocean Trails Project (not yet transferred to the City)
- 20-acre Lunada Canyon Preserve owned by the Palos Verdes Peninsula Land Conservancy
- 3.9-acre Coast Guard Property



FIGURE

City-Owned Parcels Being Contributed to the Reserve

4-1

4.1.2 Private Lands

Private development projects will contribute 216.6 acres of biological open space to the Reserve (Figure 4-2):

Future private development projects would contribute 80 acres of biological open space to the Reserve pending subsequent project approvals:

- 40.0 acres within the Long Point Parcel (bluff face)
- 40.0 acres within the Lower Filiorum Parcel

The inclusion of Lower Filiorum acreage in the Reserve will be a condition of approval for any development proposals on the Lower Filiorum property. If no approvals are obtained, there will be no obligation on the part of present or future property owner to donate these lands. Designating these lands as included in the Reserve in the text and maps of this Subarea Plan does not constitute approval of development on the Lower Filiorum property.

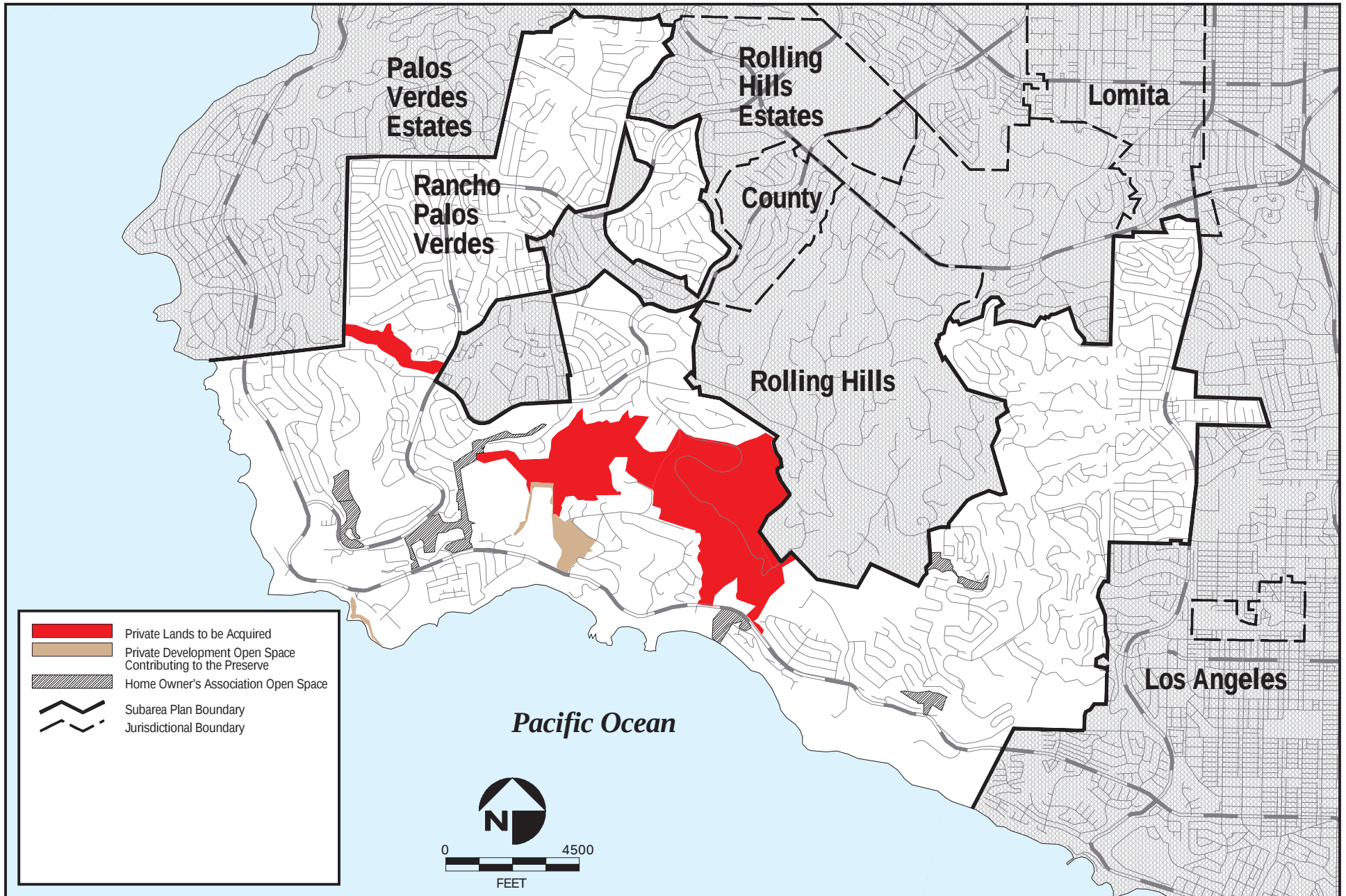
Seven local Homeowners Associations (HOA) are being requested to contribute 136.6 acres of biological open space to the Reserve.

- 11.5 acres belonging to the Panorama Estates HOA
- 18.0 acres belonging to the Portuguese Bend Club
- 20.0 acres belonging to the Sea Breeze HOA
- 42.3 acres belonging to the Peninsula Pointe HOA
- 16.6 acres belonging to the Sunset Ridge HOA
- 13.2 acres belonging to the Seacliff Hills HOA
- 15.0 acres belonging to the Rancho Palos Verdes Estates HOA

The City and PVPLC are actively working with these HOAs to sign agreements to include their biological open space with in the Reserve and to be actively managed by PVPLC. Until such agreements are obtained, these lands are categorized as Neutral Lands that cannot be developed.

The City, PVPLC, Los Angeles County, and the Wildlife Agencies will provide funds for the purchase and dedication of the Reserve 684.5 acres of privately owned lands considered regionally important:

- 422.3-acre Portuguese Bend Parcel (397.3 acres will be included in the Reserve, and 25 acres in the lower active landslide area will be an “active recreation area” outside of the Reserve that would serve as a public-access point to trails within the Reserve and could include an equestrian facility)
- 43.8-acre Agua Amarga Canyon Parcel
- 218.4-acre Upper and Middle Filiorum Parcels



FIGURE

4-2

4.1.3 Neutral Lands

Approximately 663 acres of “Neutral Lands” will exist outside the Reserve boundary, but are unlikely to be developed in the future (Figure 4-3). The Neutral Lands designation has been applied to privately owned properties in the City that contain development constraints due to existing City zoning code restrictions. The designation is not intended to prohibit development on these properties but only recognize the development constraints that already exist on these properties pursuant to the City’s Municipal Code. By definition “Neutral Lands” are those areas that are considered to be extreme slopes (35% or greater slope), are zoned Open Space Hazard or exist as deed restricted open space belonging to a Homeowners Association. If any of these three conditions exist on a private property the area has been designated Neutral Lands. Given the scale of the NCCP map, the mapped “Neutral Lands” areas are approximations. The Neutral Lands designation is noted in the Subarea Plan because these areas of the City cannot be developed under the City’s Codes and therefore will likely remain as open space which thus contributing to the function of the Reserve. Except for specific HOA lands, Neutral Lands are not proposed to be included in the Reserve and therefore not subject to the restrictions that apply to properties within the Reserve. The Neutral Lands are mapped solely to provide an estimation of their area and location relative to the actual NCCP Reserve. The Land Conservancy and the City will work to obtain conservation easements over some of these lands (HOA open space) and add as many of these parcels to the Reserve as is practical.

These Neutral Lands can be placed into the following two categories: Extreme Slopes on Private Property and Lands Zoned Open Space Hazard.

Extreme Slopes on Private Property

Extreme slopes have greater than 35 percent grade and occur in undeveloped canyons and developed residential tracts scattered throughout the city, although they are mostly concentrated on the city’s east side. These slopes are protected from development by City Ordinance.

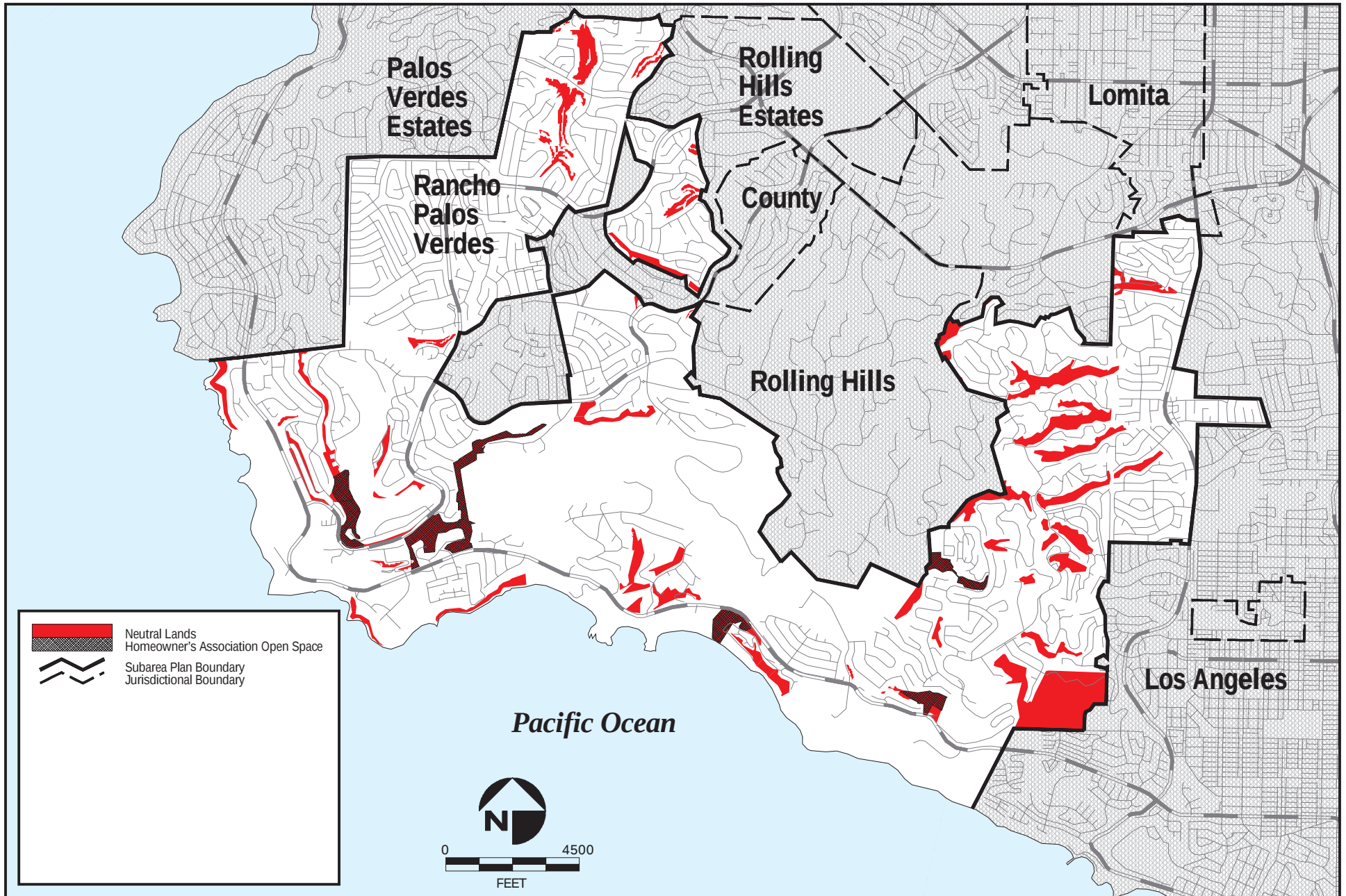
Lands Zoned Open Space Hazard

Unstable geologic conditions or other physical constraints occurring on public and private properties zoned Open Space Hazard may result in a prohibition against development. Any proposed development must be accompanied by a detailed geotechnical investigation establishing the absence of geologic hazards and an approved City application to remove the land from the Open Space Hazard designation.

4.2 CONSERVATION ACTIONS

Conservation consists of three separate actions:

1. *Dedication*: The City will dedicate 745.7 acres of City-owned lands to the Reserve.
2. *Acquisition*: The City, PVPLC, Los Angeles County, and the Wildlife Agencies will provide funds for the purchase in fee and dedication to the Reserve 684.5 acres of privately owned lands considered regionally important.
3. *Management*: PVPLC, with assistance from the City and the Wildlife Agencies, will actively manage all areas within the Reserve, including implementing habitat restoration activities in priority areas of the Reserve annually. Additional habitat restoration may be performed as available funding permits.



FIGURE

4-3

4.2.1 Compensation Mitigation

All project-specific habitat mitigation will be in the form of providing lands to the Reserve or providing funds toward implementation of habitat restoration within the Reserve. The mitigation ratio for habitat restoration funding is 3:1 for CSS, riparian scrub, and native grassland (exceeding 0.3 acre of native grassland impact; i.e., sufficient funds to purchase or restore three times the affected acreage of habitat) and 0.5:1 for non-native grassland and native grasslands less than 0.3 acre. The estimated cost for habitat restoration is \$20,000 per acre (2003 dollars).

4.2.2 Priority Acquisition Areas to be Purchased (684.5 Acres)

The City, PVPLC, Los Angeles County, and the Wildlife Agencies will provide funds for the purchase and dedication of approximately 684.5 acres of privately owned lands considered regionally important to the Reserve:

- 422.3-acre Portuguese Bend Parcel (397.3 acres will be included in the Reserve, and 25 acres in the lower active landslide area will be a recreation area outside of the Reserve that would serve as a public-access point to trails within the Reserve and a potential equestrian facility.)
- 43.8-acre Agua Amarga Canyon Parcel
- 218.4 acres of Upper and Middle Filiorum Parcels

4.2.3 Priority Restoration/Enhancement Areas

Current habitat restoration programs within the proposed Reserve include 30 acres of CSS revegetation on the Oceanfront Estates property and 50 acres of CSS revegetation associated with the Ocean Trails development. The City and PVPLC are committed to long-term enhancement of the Reserve via annual Revegetation and Targeted Exotic Plant Removal programs, as allowed by available funds.

4.3 FUNDING AND FINANCING OF SUBAREA PLAN

4.3.1 Estimated Implementation Cost

Implementation of the Subarea Plan will require funding of habitat acquisition, restoration and management. Implementation costs were estimated for three alternative preserve configurations (Figure 4-4). Estimated costs for these actions are summarized in Table 4-1. See Appendix C for details.

4.3.1.1 Habitat Acquisition

Generally, privately owned, biologically important habitat may be conserved onsite as mitigation, or compensation for impacts to biological resources from development elsewhere on the project site. In some cases, however, this Subarea Plan's conservation goals would be better served through acquisition of properties containing important biological resources.

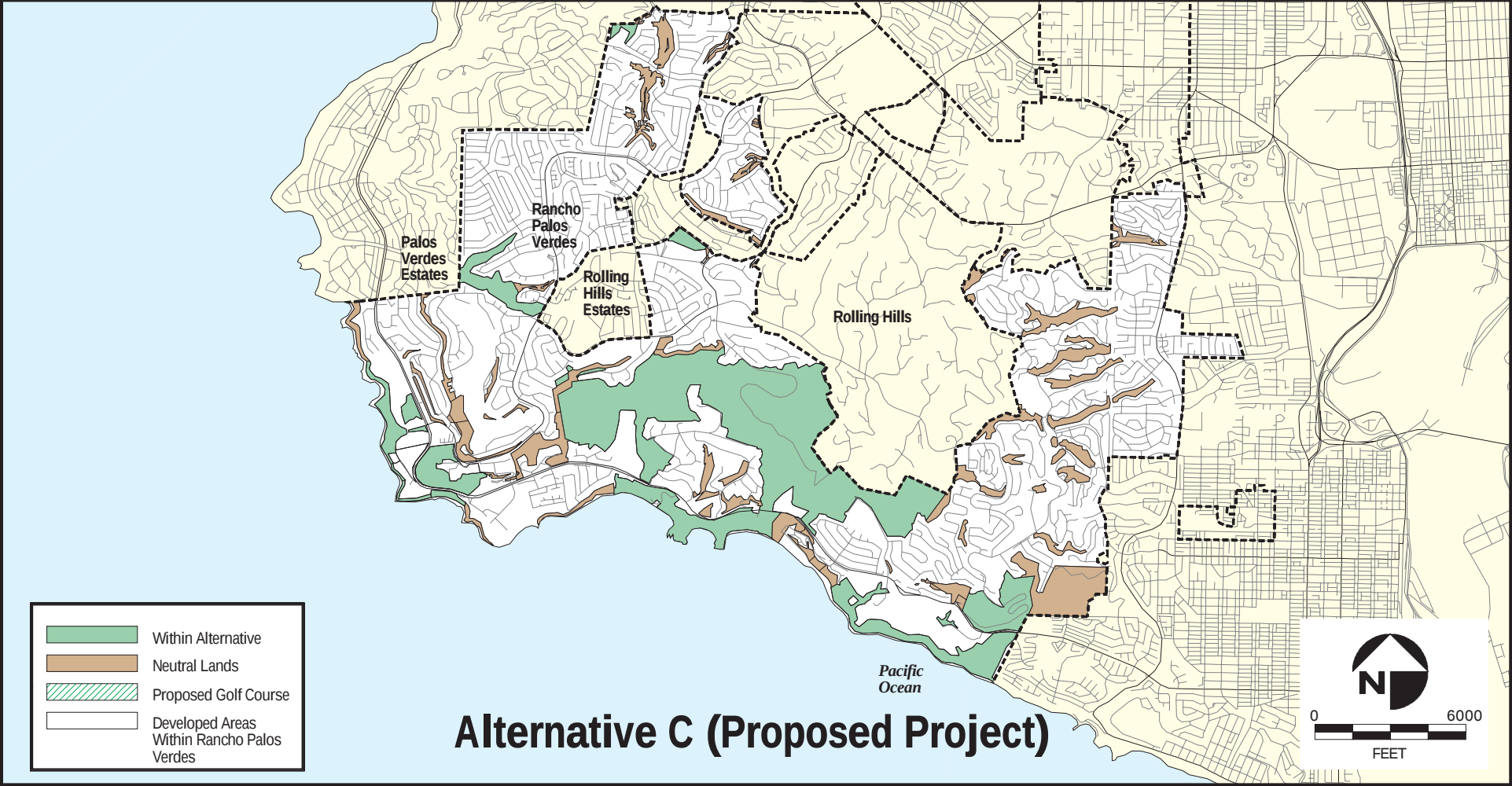
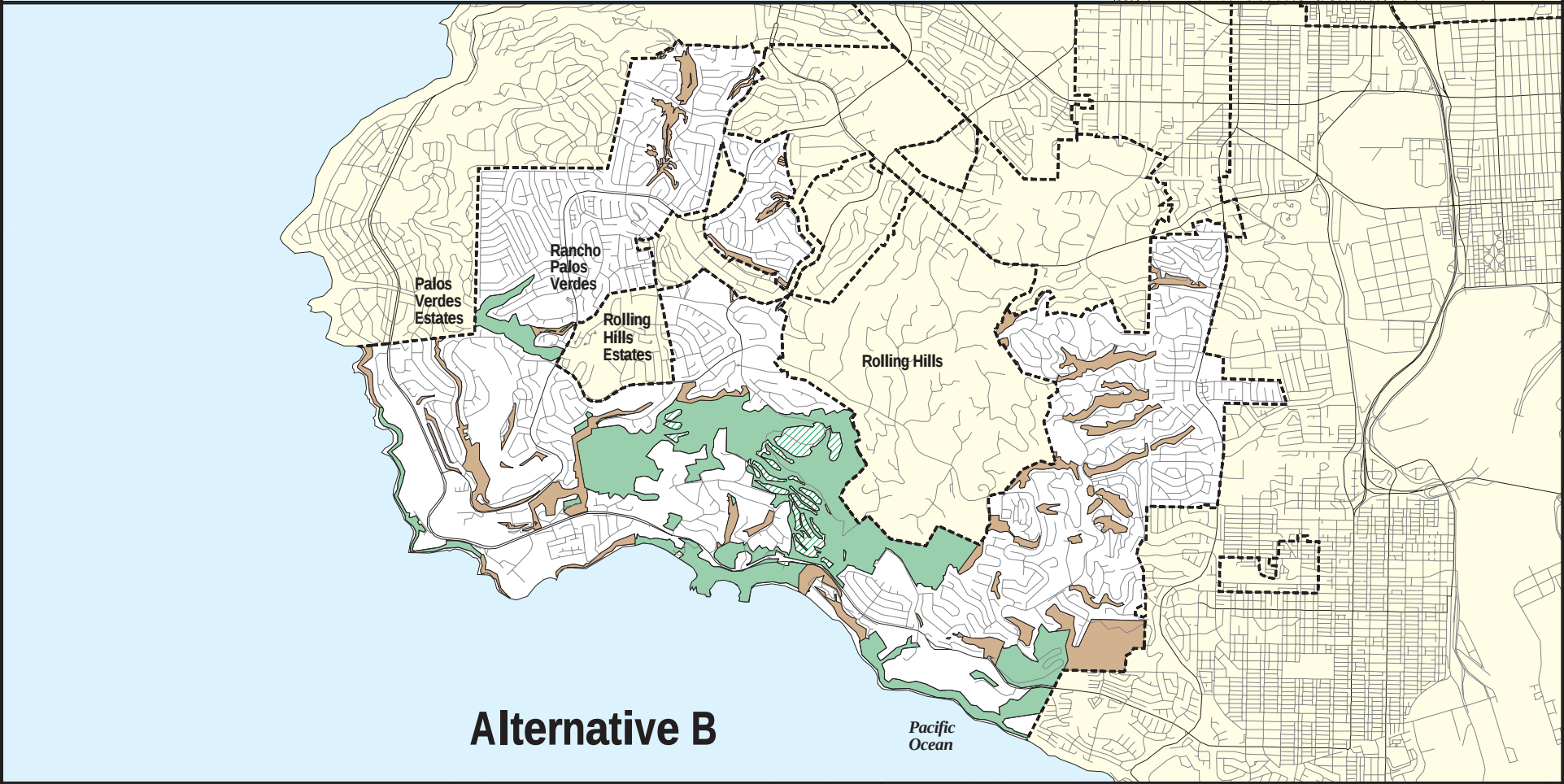
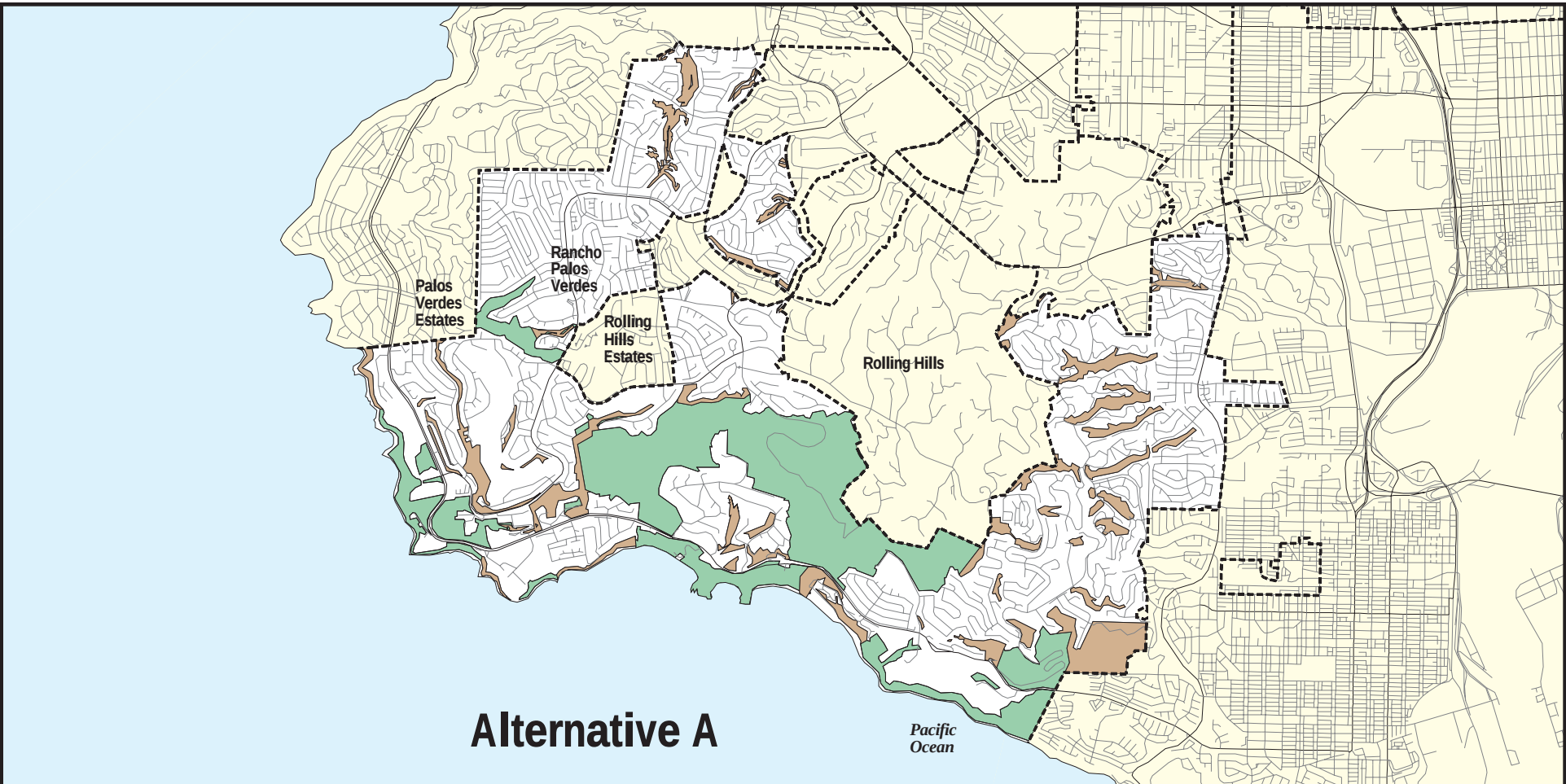


Table 4-1
Comparison of Alternative Conservation Plans

	Alternative A	Alternative B	Alternative C (Proposed Project)
Planning Area (Ac.)			
Conserved [1]	1540	1,174	1,504
Neutral Lands [2]	663	663	663
Not Conserved	6,356	6,722	6,392
<i>Total Land Area</i>	<i>8,559</i>	<i>8,559</i>	<i>8,559</i>
Components of Conserved Area			
Dedicated for Conservation	577	458	4349
Conserved for Mitigation Credit [3]	176	478	471
Additional Conservation [4]	787	165	684
<i>Subtotal Natural Habitat</i>	<i>1,442</i>	<i>101</i>	<i>1,436</i>
Conserved--Other [5]	98	73	68
Total Conserved Area	1,540	1,174	1,504
Estimated Land Acquisition			
Potential Acquisition Area (Ac.)	787	165	684
Estimated Acquisition Cost [6]	\$ 25.7 – 36.0 Mill.	\$ 5.3 – 7.5 Mill.	\$ 22.3 - 31.3 Mill.
Appraised Acquisition Cost [7]	30.9 Mill	6.5 Mill	26.7 Mill
Management/Maintenance (x \$1000)			
Start-up/One-time Cost [8]	\$ 320	\$ 244	\$ 312
Annual Cost [8]	\$ 322	\$ 246	\$ 313
TOTAL PROGRAM COST [9]	\$31.6 Mill.	\$7.0 Mill.	\$27.3 Mill.

SOURCE: City of Rancho Palos Verdes, Palos Verdes Peninsula Land Conservancy, URS Corporation, TAIC (2003 GIS data), Onaka Planning & Economics.

1. Includes natural habitat and other areas, such as agricultural, disturbed, and developed.
2. Neutral lands outside of the Reserve boundary. Includes very steep slopes and areas of open-space hazard.
3. Natural habitat lands that would be conserved as mitigation for impacts of public or private development projects.
4. Natural habitat to be conserved in potential acquisition areas.
5. Agricultural, disturbed, and developed areas.
6. Acquisition cost of land for habitat or open-space use is estimated to range from \$0.75 to \$1.05 per square foot, or an average of \$39,200 per acre. This estimate is intended for general planning use only; it is not an appraisal or estimate of site-specific value.
7. City-commissioned appraisals estimated value at less than \$39,000 per acre applied to all three alternatives.
8. Based on "PAR" analysis by URS Corporation and Palos Verdes Peninsula Land Conservancy for Alternative C; estimated for others based on per acre cost estimate of Alternative C.
9. Sum of estimated acquisition cost based on appraised per acre value, startup and ongoing management costs.

The City acquired the Forrestal property (160 acres) in 1996, which subsequently became the Forrestal Nature Preserve, and the Barkentine property (98 acres) in 2001. Both of these are important components of the NCCP reserve system. Under Alternatives A and C, approximately 787 acres and 684 acres,

respectively, would be acquired for conservation, and under Alternative B, approximately 165 acres would be acquired (Table 4-1).

Based on a review of over 2,400 acres of land sales for habitat or open-space use in coastal Los Angeles and Orange Counties, it is estimated that the price of undeveloped land in the city, when purchased for biological open space, would range from \$0.75 to \$1.05 per square foot, or approximately \$39,000 per acre (see Appendix C). The City recently commissioned appraisals for the proposed acquisition parcels, which resulted in a more accurate acquisition cost estimate of \$26.7 million for the 684.5-acre purchase proposed in Alternative C. Alternative A and B acquisition costs would be \$30.9 million and 6.5 million, respectively, using the appraised per acre value determined for Alternative C.

As in the Forrestal Nature Preserve Management Agreement, the City will be responsible for services such as storm drain maintenance and control, public security, trash disposal, fire management, utility services, and maintenance of some signs. PVPLC will be responsible for the restoration and monitoring of the habitat areas, covered species surveys, trail maintenance, installation and maintenance of fences and benches. These activities may be provided in the form of in-kind services, or funded by cash, as appropriate for each item. Annual management costs for Alternative C are estimated at \$313,000 (Table 4-1). Initial start up management costs are estimated at \$312,000. .

PVPLC is responsible for raising funds from public and private sources to fulfill its obligations. The City is responsible for oversight and review of PVPLC's performance with respect to the management and maintenance of the Reserve

4.3.1.2 *Habitat Management*

The network of habitat lands conserved under the Subarea Plan will be managed for their habitat value and periodically monitored. Currently, several areas are already being managed following these methods, including:

- The Forrestal Nature Preserve (163 acres)
- Mitigation land dedicated by the Ocean Trails project; and
- Mitigation land conserved by Vesting Tentative Map No. 46628 (Oceanfront Estates 69 acres are being actively managed, including 30 acres of revegetated CSS)

Permanent endowments or funding commitments have been established for all three areas.

New private developments will be required to provide funds to manage in perpetuity any habitat restoration required as a condition of approval for the project as mitigation for development impacts. Alternatively, they may establish endowments for habitat management by a conservation organization approved by the City. Public funds will not be used to manage private mitigation areas.

Funding will be required to manage and monitor existing City-owned habitat lands that will be permanently conserved (including the Barkentine property [98 acres], Upper Point Vicente property [65 acres], and the Abalone Cove property [69 acres]) and potential acquisition areas (787 acres under Alternatives A, 165 acres under Alternative B, or 684 acres under Alternative C). Cost of habitat

management and biological monitoring varies according to habitat type, condition, and specific tasks needed to maintain biological value. Generally, tasks include trash removal, control of invasive species, installation and maintenance of fences, signs, and trails, and monitoring of biological resources. Center for Natural Lands Management (CNLM), a non-profit organization engaged in management of numerous habitat and open space preserves in California, developed a spreadsheet program (called Property Analysis Record, or PAR, and licensed to users) to estimate costs of habitat management. URS and PVPLC conducted a PAR analysis for the proposed Reserve (Alternative C; 1,504 acres), which indicated that the cost to manage the system would total \$312,000 per year, with a first year, start-up cost of \$313,000 (see Appendix C). These cost estimates also include removal of non-native vegetation on 5 acres, revegetation of another 5 acres, and weed control in 20 other selected locations, conducted annually.

Annual and one-time costs to manage the Reserve under Alternatives A and B were estimated based on the PAR analysis for Alternative C. Estimated annual costs range from \$246,000 for Alternative B to \$322,000 for Alternative A; estimated first year start-up costs are \$244,000 and \$320,000 for these two alternatives.

4.3.1.3 *Habitat Restoration and Maintenance*

This Subarea Plan proposes an annual program of habitat restoration and maintenance at a sustainable level (see Section 6). The program includes removal of non-native vegetation on 5 acres of land and revegetation of another 5 acres, to be conducted annually. The cost for weed removal and restoration work is estimated to be \$95,700 plus a first year start-up cost of \$116,400. Both annual and start-up costs of habitat restoration and maintenance are included in the management cost estimates discussed above.

4.3.2 *Funding Sources*

The following funding sources will be used to implement this Subarea Plan.

4.3.2.1 *Habitat Acquisition*

Using funds generated in Los Angeles County (principally Measure A), the City has previously expended \$11.8 million for the purchase of the Forrestal and Barkentine properties. Additionally, the City will dedicate 224.2 acres of City-owned land for exclusive habitat use. If an equivalent area were purchased from private owners for habitat or open space use, the corresponding cost would exceed \$8.7 million (using the average of high and low estimates of land cost for open space).

For habitat lands to be acquired under Alternatives A and C, the candidate sources of funds listed in Table 4-2 would be pursued.

**Table 4-2
Candidate Sources of Land Acquisition Funding**

USFWS "Section 6" funds	\$2 Million
Proposition 50, Coastal Watershed and Wetland Protection portion for Los Angeles and Ventura Counties	\$17 Million
Los Angeles County	\$1 Million
City of Rancho Palos Verdes	\$1 Million
Private funding (PVPLC)	\$6 Million
Total	\$27 Million

4.3.2.2 Reserve Management

In implementing this Subarea Plan, the City will enter into a contract with the PVPLC to manage and monitor all of the conserved land in the Reserve and additional lands that are subsequently acquired. PVPLC will also undertake the annual program of non-native vegetation removal and CSS habitat restoration. The existing agreement between the City and PVPLC for management of Forrester Nature Preserve will serve as a model for the reserve management program.

In lieu of an endowment for the management program, the City will commit \$100,000 per year (to be adjusted annually for inflation) and certain in-kind services to fulfill its obligations for management and maintenance. The PVPLC will commit \$50,000 per year (to be adjusted annually for inflation), certain in-kind services, and volunteer time to fulfill its obligations for management and maintenance.

4.3.2.3 Summary of Habitat Management Funding

Funding commitments for habitat restoration and reserve management and monitoring will be provided annually as listed in Table 4-3 (all numbers to be adjusted annually for inflation).

**Table 4-3
Funding Commitments for
Habitat Restoration and Reserve Management**

City	\$100,000	Cash
City	\$ 91,000	In-kind services
City	\$ 15,000	Private lands endowments
PVPLV	\$ 50,000	Cash
PVPLC	\$ 25,000	In-kind services
PVPLC	\$ 50,000	Volunteer time
Total	\$331,000	

The City and PVPLC will actively pursue additional public and private funding sources to undertake restoration projects in areas under their management responsibility. In-kind services from the City will include public safety, trash collection, fuel modification, staff time (Planning, Public Works, etc.) and maintenance as agreed to among the parties. In kind services from the PVPLC will consist of staff time, use of equipment, etc. Private lands requirements will include obligations of projects such as Oceanfront Estates to maintain habitat at the project's expense or using income from an established endowment. PVPLC has demonstrated the ability to generate significant amounts of volunteer support. For the first four months of 2003, the total volunteer hours donated (including non-stewardship activities such as special events and education) was 3,902 hours, as shown on the chart below. At \$15 per hour, which is the lowest hourly rate used in the PAR analysis, this effort is valued at \$52,534. These numbers demonstrate that the volunteer component of the stewardship proposal is sustainable at a \$50,000 annual level. PVPLC will maintain records of volunteer time, and will include this data in the annual report to the Wildlife Agencies.

Table 4-4
Volunteer Hours for Pvpplc Projects for 2003 (January to May)

Date	White Point	Chandler	Lunada Canyon	Forrestal	DFSP	Office	Youth Education	Adult Education	Events	George F	Total
January-03	113	133.25	387.5	12	12	23	16	25	13	64	798.75
February-03	229		32	15	27	17	48	22	27	64	481
March-03	593.5			13.5	48	21	130	26	23	80	935
April-03	429		8	15	13	12	63	30	33	64	667
May-03	441	93	110	10	17	33	34	29	182	72	1021
Total 2003 YTD	1805.5	226.25	537.5	65.5	117	106	291	132	278	344	3,902.75

SECTION 5 LOCAL PLAN REVIEW AND APPROVAL PROCESS**5.1 CITY IMPLEMENTATION PROCESS**

Any proposed development of land in the Reserve would first require consistency with the appropriate provisions of the Municipal Code. Subsequent entitlements will not be provided without compliance with applicable provisions of the General Plan, Zoning Ordinance, Grading Ordinance, Subdivision Map Act, and other applicable provision of the Municipal Code. Upon approval of this Subarea Plan, the City will use its land-use authority to implement the provisions of this Subarea Plan. Regulatory actions shall include interim and permanent ordinances consistent with this Subarea Plan.

5.2 INTERIM PROTECTION**5.2.1 Existing Provisions of the Municipal Code**

Natural Overlay Control District. Interim protection of habitat lands inside the Reserve is assured through the mandatory implementation of the Natural Overlay Control District (OC-1) (Municipal Code Section 17.40.040 *et seq.*) which is established to “maintain and enhance land and water areas necessary for the survival of valuable land and marine-based wildlife and vegetation...”

Minor modifications to this ordinance will be required to be consistent with this Subarea Plan. This ordinance, for example, establishes Performance Criteria (Section 17.40.040 C.1. - C.5.) prohibiting:

- Disturbance of more than 10 percent of the total land area of a parcel – excluding the main structure and access;
- Affecting any water body;
- Affecting natural watercourses carrying over 100 cubic feet of water;
- Affecting riparian buffers of 50 feet on natural watercourses carrying over 100 cubic feet of water;
- The clearing, and/or thinning of more than 20 percent of a parcel’s area (fuel management zones excluded);
- The use of herbicides to control or kill vegetation;
- The removal of vegetation within a designated wildlife habitat area.

5.3 PROPOSED MODIFICATIONS TO THE MUNICIPAL CODE

Natural Overlay Control District. The City shall amend the Natural Overlay Control District (Municipal Code Section 17.40.040 *et seq.*) to ensure that before the issuance of any clearing or grubbing permits that all proposed actions conform to the provisions of this Subarea Plan.

Grading Ordinance. The City shall amend the Grading Ordinance (Municipal Code Section 15.04.010 *et seq.*) to ensure that before the issuance of any clearing or grubbing permits that all proposed actions conform to the provisions of this Subarea Plan.

Fire Code. At no time would Subarea Plan provisions take precedence over the concerns of public health, safety, and welfare as determined by the L.A. County Fire Department in consultation with the Wildlife Agencies. The City will consult with the L.A. County Fire Department to ensure that proposed fuel modification zone widths adjacent to the Reserve are adequate to meet fire department requirements. All fuel modification areas shall be mapped in the GIS database. The City's Fire Code would be amended to reflect this.

Site Plan Review Process. The City shall amend the Site Plan Review Process (Municipal Code Section 17.70.020 *et seq.*) to ensure that the provisions of this Subarea Plan are incorporated in to the Site Plan Review evaluation process.

Zoning Map. The City's Zoning Map, which is established by the Zoning Code, would be amended to incorporate the boundaries of the Reserve and to reflect any changes to Overlay Control Districts.

Subdivision Ordinance. The City would amend its Subdivision Ordinance to ensure any future proposed subdivisions conform to this Subarea Plan.

Coastal Permits. The City shall amend the Coastal Permit Process (Municipal Code Section 17.70.020 *et seq.*) to ensure that the provisions of this Subarea Plan are incorporated into the evaluation process before the issuance of any coastal permits.

City CEQA Guidelines. The City shall ensure that all development identified in Sections 17.02.020 and 17.02.05 *et seq.* shall be subject to enhanced California Environmental Quality Act. (CEQA) (Ord. 361 Section 5, 2000) review to comply with applicable provisions of this Subarea Plan.

General Plan Amendment. The City shall amend relevant sections of the Rancho Palos Verdes General Plan to:

- Identify all Reserve lands and their attendant land-use restrictions; and
- Incorporate this Subarea Plan as part of the General Plan.

5.4 PERMANENT HABITAT PROTECTION

Permanent protection of conserved land shall be provided through recordation of conservation easements in priority to other encumbrances upon the fee title or dedication of the fee title itself, as appropriate and consistent with the needs of the landowners conveying the property to the Reserve. Both public and private landowners may wish to retain compatible uses of the property while complying with Reserve management guidelines. Compatible uses are accommodated with the grant of easement. The long-term biological integrity of the Reserve will be ensured as follows:

- All lands set aside in the Reserve as mitigation for development occurring outside the Reserve, and lands acquired for the Reserve with public funds, will be protected by conservation

easements. Any lands within the Reserve, dedicated in fee to the City, will also be protected by an open-space easement for conservation purposes. All conservation easements established under this Subarea Plan shall be held by the PVPLC or another entity acceptable to the City and the Wildlife Agencies.

- Local public lands committed to the Reserve will be protected with conservation easements, to be held by the PVPLC or another entity acceptable to the City and the Wildlife Agencies.

5.5 MITIGATION REQUIREMENTS

Upon approval of this Subarea Plan and Implementation Agreement, impacts to all habitats associated with City projects and private projects as agreed to by the City will be mitigated through the dedication of the City-owned lands to the Reserve (see Table 3-3). The Habitat Manager's oversight of the Reserve will also serve to mitigate project impacts. Private projects shall mitigate unavoidable impacts through the contribution of open space to the Reserve or by providing funds to the Habitat Manager to implement habitat restoration within the Reserve. Impacts deemed consistent with but not specified in this Subarea Plan shall be mitigated by the project proponent through monetary contributions to the habitat restoration program in the Reserve, at a funding level sufficient to provide a 3:1 ratio of conserved or revegetated acreage to affected acreage for CSS, wetlands, or native grassland. A 0.5:1 ratio for non-native grassland would be required. Within the Coastal Zone, permissible impacts and mitigation to Environmentally Sensitive Habitat Areas (ESHA) will be consistent with the most current LCP.

5.5.1 Wetlands Protection Program

Pursuant to this section of the Subarea Plan, wetlands protection will be provided throughout the Subarea through individual project entitlement reviews and the associated CEQA process. The process will provide an evaluation of Wetlands avoidance and minimization and will ensure compensatory mitigation within the city for unavoidable impacts to wetlands, thereby achieving no overall net loss of wetlands.

As part of the CEQA review, development projects that support wetlands will be required to demonstrate that impacts to wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts to wetlands, the City will apply a 3:1 mitigation ratio for impacts to vegetated wetlands (e.g., riparian scrub). Unvegetated waters of the U.S./State would be mitigated at a 1:1 ratio. The Wetlands mitigation ratio provides a standard, but may be adjusted depending on the functions and values of both the impacted wetlands as well as the wetlands mitigation proposed by the project. The City may also consider the wetland habitat type(s) being impacted and utilized for mitigation in establishing whether these standards have been met. Within the Coastal Zone, permissible wetland impacts and mitigation ratios shall be consistent with the most current LCP.

The Wildlife Agencies will review the mitigation program as part of the CEQA public review process. Projects that document highly degraded habitat value may request a reduced mitigation ratio. If a reduced mitigation ratio has been proposed, the Wildlife Agencies may submit a letter of concurrence or non-concurrence to the City. If a letter of non-concurrence is received by the City from the Wildlife Agencies during the CEQA public review period, the City will not approve the mitigation ratio reduction. If no

written concurrence or non-concurrence is received by the City from the Wildlife Agencies during the CEQA public review process, the mitigation ratio reduction may be approved by the City.

Additionally, this component of the Subarea Plan is not intended to result in subjecting projects to additive or, in some measure, duplicative, mitigation requirements for the same wetlands impacts evaluated under the Federal and/or State wetland permitting process. Thus, the City reserves the right to provide flexibility in the CEQA mitigation analysis and the Mitigation Monitoring and Reporting Program (MMRP) requirements to enable a project applicant to substitute the mitigation measures imposed by another Federal or State agency for the same wetlands impacts for the mitigation imposed under this City program; provided that the Federal or State agency mitigation measures are equivalent or greater than those imposed by the City.

The wetlands mitigation program will be included in the project's MMRP that is incorporated as a condition of the project's entitlement permit. For development outside of Covered Projects, implementation of wetlands protection and the MMRP will be achieved through the HLIT permit. For Covered Projects, implementation of wetlands protection and MMRP will be achieved through associated Tentative Maps (TMs). In addition, the City's Grading Ordinance will be amended to require verification of compliance with the conditions of the applicable entitlement permit prior to the issuance of a permit to impact wetlands (e.g. grading permit).

5.5.2 Compliance with Existing Federal and/or State Wetlands Regulations

In addition to the City's Wetlands Protection Program, Wetlands are afforded protection under existing Federal and State law and regulatory programs. The Federal Clean Water Act, the California Porter-Cologne Water Quality Control Act and the California Fish and Game Code provide protection to Wetland habitats and species through Federal and State regulatory permitting and agreements. Where applicable, project proponents must submit an application for and receive Federal Section 404 and State Section 1602 permits prior to impacting most wetlands. Applicants must also apply to Regional Water Quality Control Board for Waste Discharge Requirements prior to any discharges, including discharges from land that may affect any waters of the state. Water Discharge requirements must implement Basin Plans that designate beneficial uses and water quality criteria for water-bodies, including wetlands.

Mitigation for an impact to wetlands must be consistent with the Federal policy of no overall net loss of wetland functions and values, and Section 404(b)(1) guidelines (40 C.F.R. Part 230). Habitats and species that are the subject of these permits require, as conditions of their approval, conservation and/or mitigation resulting in avoidance or functional equivalent value mitigation. State guidelines for wetland permitting also adhere to a no net loss policy for wetland acreage, functions and values. The CDFG Code (Section 1600 et seq.) states that projects which substantially alter the flow or bed, bank or channel of any river, stream or lake designated by the CDFG should first notify the CDFG, which may determine that a Streambed Alteration Agreement is required. As part of the City's Wetlands Protection Program, compliance with conditions of the Federal Section 404 and State Section 1600 permits must be demonstrated prior to issuance of a grading permit.

Projects that are regulated by Federal agencies will continue to be subject to Section 7 Consultations under the ESA. Those projects that are subject to a Section 7 Consultation will be evaluated to insure that the project is consistent with this Subarea Plan and wetlands mitigation program. The level of

conservation afforded by the provisions of this Subarea Plan to Covered Species has been established through extensive consultation with, and review by, the Wildlife Agencies. Therefore, projects undergoing Section 7 Consultations which are consistent with the provisions of this Subarea Plan will receive Take Authorization for Covered Species through the Take Authorization permit issued to the City. Within the Coastal Zone, the most current LCP shall define permissible impacts and mitigation for wetlands and ESHA habitats (Appendix F).

5.6 SUBAREA PLAN BOUNDARY AND AMENDMENT PROCESS

Adjustments to the Reserve may be made without the need to amend the Subarea Plan in cases where the Reserve boundary results in an area of equivalent or higher biological value or where additional acreage is added to the Reserve. The determination of the biological value of a proposed boundary change will be made by the City in accordance with this Subarea Plan, with the concurrence of the Wildlife Agencies.

If the determination is the adjustment will result in the same or higher biological value of the Reserve, no further action by the jurisdictions or Wildlife Agencies shall be required. The Wildlife Agencies shall be notified of any additions to the Reserve and the provisions for habitat maintenance of lands added. Any adjustments to the Reserve boundary will be disclosed in the associated environmental document (as part of the project description) prepared for the specific project. An evaluation of the proposed boundary adjustment to the Reserve will be provided in the biological technical report and summarized in the land-use section of the environmental document. Minor and major amendments to the Reserve are discussed below.

5.6.1 Process for Exchanges and Minor Modifications to Reserve Boundaries

Adjustments to the Reserve may be made without the need to amend this Subarea Plan in cases where the revised Reserve boundary results in a Reserve of equivalent or higher biological value or where additional acreage is added to the Reserve. These actions are known as “minor amendments.”

The City, in accordance with the Subarea Plan, will make the determination of the biological value of a proposed boundary change, with the concurrence of the Wildlife Agencies. If the City’s consulting biologist determines the adjustment will result in the same or higher biological value of the Reserve, no further action by the jurisdictions or Wildlife Agencies shall be required. The Wildlife Agencies shall be notified of any additions to the Reserve and the provisions for habitat maintenance of lands added.

Any adjustments to the Reserve boundary will be disclosed in the environmental document (project description) if prepared for a specific project. An evaluation of the proposed boundary adjustment will be provided in the biological technical report and summarized in the land-use section of the environmental document. Any approvals by the City under this section shall be based on a review by a qualified biologist under contract by the City.

If lands designated as Reserve are annexed into the city of Rancho Palos Verdes, these lands shall be incorporated into the Subarea Plan and shall be considered covered under the City’s Implementing Agreement.

5.6.2 Process for Major Changes to Subarea Plan

Requests for major amendments to this Subarea Plan's take authorizations would be processed by the Wildlife Agencies consistent with applicable laws and regulations (including the National Environmental Policy Act and the California Environmental Quality Act) in effect at the time of the original Subarea Plan approval. Areas requiring major amendments include those subject to current or anticipated conservation agreements with the Wildlife Agencies, should these agreements fail to materialize.

5.7 IMPLEMENTING AGREEMENT

The Implementing Agreement (IA) is the binding contract between the City and the Wildlife Agencies. In addition, due to their role in the reserve acquisition and management programs, PVPLC will also be a co-signer to the IA. It identifies responsibilities to implement this Subarea Plan, binds the parties to their respective obligations, and specifies remedies should any party fail to perform its obligations.

5.7.1 Assurances in the Implementing Agreement

Additional assurances in the model Implementing Agreement are described below:

- **Local Land Use.** The Wildlife Agencies will issue to the City a 50-year authorization to take species covered by this Subarea Plan. Additionally, this Subarea Plan will eliminate most USFWS and CDFG involvement in project-specific review and approval. Impacts to wetlands must continue to be regulated through the Clean Water Act, Fish and Game Code Section 1600 et seq. and local regulations, although coverage for endangered species through this Subarea Plan should facilitate any consultation required between the USFWS and ACOE.
- **New Development.** Third-party beneficiaries undertaking land development will be allowed to take covered species and habitats incidental to project construction, operation, and maintenance based on the approvals extended to the project through the local project permitting process as long as those land developments conform to the provisions of this Subarea Plan.
- **Covered Species.** The City will receive take authorizations for a list of covered species found adequately conserved by the Subarea Plan. Take will be issued for Covered Species in one of two categories: 1) Covered Species not listed and 2) Covered Species subject to Incidental Take (i.e., listed). When an unlisted species becomes listed, it will continue to receive take coverage under this Subarea Plan, only under the latter category. The list includes species listed as threatened or endangered, as well as other species not currently listed under either the FESA or CESA as long as they are adequately covered by this Subarea Plan.
- **Critical Habitat.** If in the future, an FESA Critical Habitat Designation is made for a covered species, that determination will not have the effect of causing additional land, mitigation, restrictions, or compensation to be required of the City if this Subarea Plan is being implemented in compliance with the take authorization conditions for that species.
- **Future Listings of Covered and Uncovered Species.** This Subarea Plan incorporates policies describing how the covered species list may be expanded to include new species once actions in other jurisdictions, or in Rancho Palos Verdes, ensure the species' long-term conservation.

5.7.2 Changed Circumstances and Unforeseen Circumstances

Pursuant to the “No Surprises” rule, if the USFWS makes a finding of “Unforeseen Circumstances,” the USFWS will not require commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level agreed to in this Subarea Plan and the IA with respect to covered activities without consent of the City.

“Unforeseen Circumstances” (defined in 50 CFR Section 17.3) means changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the USFWS during the conservation plan’s negotiation and development and that result in a substantial and adverse change in the status of the covered species. Pursuant to the “No Surprises” rule at 50 CFR Section 17.22(b)(5)(iii)(C), the USFWS must demonstrate that unforeseen circumstances exist using the best scientific and commercial data available. The findings must be clearly documented and based on reliable technical information regarding the status and habitat requirements of the affected species. In its evaluation, the USFWS will consider but not be limited to the following factors:

- The size of the current range of affected covered species.
- The percentage of the range of affected covered species that has been affected adversely by covered activities under this Subarea Plan.
- The percentage of the range of affected covered species that has been conserved by this Subarea Plan.
- The ecological significance of the portion of the range of affected covered species affected by this Subarea Plan.
- The level of knowledge about affected covered species and the degree of specificity of the conservation program under this Subarea Plan.
- Whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of affected covered species in the wild.

“Changed Circumstances” is defined under the federal “No Surprises” rule as “changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for.” Changed Circumstances to be addressed by this Subarea Plan include the following:

1. Fire occurring in the same location as a previous fire no sooner than three years following nor longer than 10 years following an initial fire and damaging up to 30 acres of Reserve coastal sage scrub (CSS) habitat.
2. Flood events occurring within the Reserve at greater than 50-year levels and up to and including 100-year levels, as classified by the Federal Emergency Management Agency and determined by the Rancho Palos Verdes Department of Public Works.
3. A major landslide event damaging up to 30 acres of Reserve CSS habitat.

4. Climatic drought up to three years in length, as declared by the State Department of Water Resources and/or local water agency.
5. An increase of invasive species within the Reserve to the extent that, as determined by the City Habitat Manager in consultation with the wildlife agencies, such increase is of sufficient magnitude to significantly, adversely affect any covered species.
6. Listing of a non-covered species.

5.8 CITY IMPLEMENTATION ACTIONS AND PROCESS

The City will enter into the previously described Implementing Agreement with the Wildlife Agencies following an action of the city council adopting this Subarea Plan and authorizing the agreement. The duration of the agreement will be 50 years, and the agreement will be renewable if required. The Implementing Agreement will ensure that this Subarea Plan will be continuously implemented over the next 50 years, and that the State and Federal take authorizations will be in effect for the same time interval. Key assurances for all parties described in this Subarea Plan will be incorporated in the Implementing Agreement in full.

For its part, the City will guarantee implementation of this Subarea Plan through interim and permanent regulatory measures, including codes, ordinances, and policies contained in the General Plan, and the other City policy documents described herein. The City affirms that within 2 years of the signing of an Implementing Agreement with the Wildlife Agencies, it will develop and schedule action on a comprehensive General Plan amendment that will codify any new or modified City policies required to implement this Subarea Plan. By mutual agreement, the parties may extend this period for one additional year. This action will ensure consistent implementation of this Subarea Plan through City policy, private and public project review and approval, and guidelines for operations and management of public lands. Regardless of this period, the City will provide interim protection to habitat lands addressed in the take authorizations through the process described herein.

5.8.1 City Regulatory Actions

Upon signing of this Subarea Plan Implementing Agreement, the City will use its land-use regulatory authority to fully implement the provisions of this plan. Regulatory implementation shall consist of the following actions:

1. **General Plan Update.** The City will amend the relevant elements of the General Plan to incorporate this Subarea Plan by reference. If necessary or applicable, existing goals, objectives or policies contained in the relevant General Plan elements may be amended to aid in implementing this Subarea Plan.
2. **Update Municipal Code of Ordinances.** If necessary or applicable, the Municipal Code will be amended by reference to require lands addressed by this Subarea Plan to comply with the conservation standards contained in this Subarea Plan.
3. **Update Zoning Ordinance.** If necessary or applicable, additional text will be added to the Zoning Ordinance or a new Article will be drafted to describe the effective boundaries and intent of this Subarea Plan.

4. **Review and Modify Relevant Regulations.** To ensure the approval of private and public development projects is consistent with this Subarea Plan relevant regulations will be reviewed and modified, as needed. Current ordinances will be strengthened regarding enforcement and penalties for illegal grading, clearing, and other operations within habitat or other sensitive resource areas.
5. **Amend the Local Coastal Plan to incorporate the NCCP program and allow for a CCC consistency review.** Prior to this LCP amendment, the current LCP will take precedence over any conflicting policies with this Subarea Plan for lands within the Coastal Zone. This LCP amendment should be submitted to the CCC after the PUMP and HMP are developed.
6. **Comply with Implementing Agreement.** The City will comply with all terms and conditions of this Subarea Plan Implementing Agreement.

5.8.2 City Interim Resource Protection

The goal of interim protection is to prevent important habitat areas or species from being lost to clearing, conversion, or development in the period between signing of the Implementing Agreement and City action to adopt the General Plan update. Existing City regulations and ordinances, as well as project-specific plans described in this Subarea Plan, will provide both interim and permanent protection. No proposed project requiring discretionary approval within the city will be approved by the City without a determination of conformance to this Subarea Plan once an implementing agreement is signed. No grading will be done within the city without a determination of conformance to this Subarea Plan by the City Manager or his designee. No vegetation clearing, grubbing, or grading of vacant lands, or conversion of non-agricultural lands to active agriculture shall be done without a determination of conformance to this Subarea Plan by the Director of Planning, Building and Code Enforcement or his designee.

5.8.3 Development Review and Approval Process

Establishment of the regulatory framework described herein will enable the City to fully implement the conservation policies of this Subarea Plan through the normal project review and approval process.

5.8.3.1 Wildlife Agency Consultation

The agencies will receive notification of a project through the CEQA notification process and may request a voluntary consultation within the normal public or CEQA review period. Likewise, the City is free to request Agency involvement in a project where consultation would help address key issues or help to streamline the process. All projects processed by the City will document their consistency with this Subarea Plan during appropriate CEQA review.

The issuance of take authorizations will be documented by the City by maintaining a list of all approvals under this Subarea Plan, which is attached or appended to this Subarea Plan and updated annually. The list will describe the project, the amount of acres taken or conserved by the project, and the physical location of the tentative map or other record or project approval produced by the City. All issuance of project approvals over the course of a year will be documented and discussed at the required annual meeting described herein. The primary exception to this general procedure would be if a project required an amendment to this Subarea Plan as described herein.

5.8.3.2 Annual Implementation Coordination Meetings

An annual meeting will be held between the City, PVPLC, and the Wildlife Agencies to review and coordinate Subarea Plan implementation, as documented by the annual Habitat Tracking Report. It is the responsibility of the City to schedule this meeting within 60 days of each anniversary of execution of the Implementing Agreement or as otherwise agreed to by the City and Wildlife Agencies. To meet the stipulations of the Implementing Agreement, this Subarea Plan must be implemented in a way that issuance of authorizations for taking of species and habitats is roughly proportional with implementation of the conservation strategy in this Subarea Plan. The annual accounting of habitat acreage within the subarea will include land conserved and habitat taken during the reporting period. Progress toward achieving conservation requirements will be reviewed, and habitat management issues will be discussed, along with a review of project approvals issued by the City over the course of the year. If the Wildlife Agencies determine that this Subarea Plan is not being implemented as required, the Wildlife Agencies, PVPLC, and the City will take the actions specified in the implementing agreement to remedy the situation. These actions may include additional management activities, modification of the project compliance process, or redirection of acquisition funds, as long as they are consistent with the provisions of the implementing agreement.

5.9 SUBAREA PLAN AMENDMENTS

Certain events may require amending this Subarea Plan as described below. Although Subarea Plan amendments are not anticipated regularly, amendments may be necessary to accommodate major changes in conservation levels or reserve design, or large annexations of land. Consultation with the Wildlife Agencies is required for a plan amendment, and these agencies must be notified as soon as the local jurisdiction confirms that a plan amendment is warranted.

CEQA and NEPA documentation must be prepared for any project that triggers the amendment process. The documents must address project impacts, as well as impacts on Subarea Plan implementation and any effects on take authorizations held by the City.

Examples of amendments to this Subarea Plan include the following:

- Removal of lands from conservation, or reconfiguration of project plans resulting in a decrease of the amount or quality of habitat conserved that could not be addressed by a boundary adjustment.
- A large annexation of land that requires take authorizations for development, and is not covered by an existing NCCP Subarea Plan; or a major variation in design or implementation from an existing NCCP plan.
- Land excluded from a Subarea Plan at the time of approval, and therefore not covered by take authorizations, but is later planned for development conservation purposes.

5.9.1 Additions to the Reserve

Additions to the approved Reserve may be made without a plan amendment by providing the Wildlife Agencies with:

- A letter from the City agreeing to the addition and specifying the status of the property (i.e., City parkland, HOA property, etc.).
- An accurate map of the area to be added showing the total acreage and current vegetation coverage.
- A letter from the Habitat Manager agreeing to the acquisition and stating that the additional acres can be maintained in a manner consistent with the surrounding area with the funds available for Reserve management.

5.9.2 Boundary Adjustments and Equivalency

Adjustments to the approved Subarea Plan Reserve boundaries may be desirable under some circumstances that do not require plan amendment, and will be based on a like or equivalent exchange concept. For example:

- New biological information is obtained through site-specific studies;
- Unforeseen engineering design opportunities or constraints are identified during the siting or design of projects that require modification of the Reserve boundary;
- A landowner may request that a portion of or all of his property be included within the Reserve boundary.

Adjustments to Reserve boundaries can be made without the need to amend the Rancho Palos Verdes Subarea Plan if the adjustment will result in the same or higher biological value to the Reserve. The determination of biological value of the proposed change is made by the local jurisdiction and must have the written concurrence of the Wildlife Agencies. The comparison of biological value will be based on the following biological factors:

- Effects on conserved habitats (the exchange maintains or improves the amount, configuration, or quality of conserved habitats);
- Effects on covered species (the exchange maintains or increases the conservation of covered species);
- Effects on habitat linkages and function of Reserves (the exchange results in similar or improved habitat connectivity, wildlife movement corridor function, management efficiency and/or protection of biological resources);
- Effects on ecotones or other conditions affecting species diversity (the exchange maintains topographic and structural diversity and habitat interfaces or the Reserve); and/or
- Effects to species of concern not on the covered species list (the exchange does not significantly increase the likelihood that an uncovered species will meet the criteria for listing under either the Federal or State ESAs).

Most adjustments to the boundaries will be in areas immediately adjacent to identified Reserves. Any agreed upon modification of Reserve boundaries should be reported to the entity responsible for regional

reserve system accounting, and to adjacent jurisdictions if the modification might affect their portion of the Reserve.

If Sections 7 or 10(a) FESA consultations are undertaken between a property owner and the USFWS outside the structure of this Subarea Plan, the result of these consultations should be documented by the USFWS and furnished to the City. The City will record the information using the same process described herein, but would not be a cause for amendment

5.9.3 Annexations

Future annexations of land to the city must be addressed by the requirements of this Subarea Plan. These include interim protection of resources and conformance to this Subarea Plan project review and approval process if development is proposed in the annexed area. The status of County NCCP Plan(s) in annexed areas prescribes the City's actions. The City will implement this Subarea Plan in the case of annexations as follows:

- If no approved county or other Subarea Plan exists for the area being annexed, the City must assure that any development project design is consistent with the overall conservation directives and reserve design strategy of the Rancho Palos Verdes Subarea Plan.
- If an approved County or other Subarea Plan exists for the area being annexed, the approved County Subarea Plan applies, and may be modified through the boundary adjustment process described herein.
- This same approach will apply to de-annexation or annexation of lands from another incorporated city.

The City will apply the following guidelines to annexations whether a county or other Subarea Plan exists or not.

- For small annexations of less than 20 acres, where no take authorization for development is required or where little habitat is present, the City will meet Subarea Plan requirements by directing that overall conservation and project design guidelines be addressed in any project plan proposed to the City for approval. No consultation with the Wildlife Agencies is required for this process, and notification will occur through the process described herein.
- In the case of annexations of land greater than 20 acres, or that require take authorizations for development, the City will work cooperatively with the County of Los Angeles or other entity to assure consistency between the Rancho Palos Verdes Subarea Plan, or other applicable conservation standards. The Wildlife Agencies must be consulted in case of an annexation larger than 20 acres. If any existing county or other Subarea Plan will not be modified, or is modified in a way consistent with the Boundary Adjustment process, the resulting project design will be appended to the Rancho Palos Verdes Subarea Plan and no plan amendment is required. If a major variation from a county or other Subarea Plan is proposed, this Subarea Plan must be amended following the procedures herein, including CEQA and NEPA requirements. The City and County, or other responsible jurisdiction, may agree on which agency will issue the take authorizations, but the City will be

responsible for assuring that any project level conservation plan is implemented following annexation to the city.

5.9.4 Process for Adding Species to Covered Species List

If a species not on the covered species list is proposed for listing pursuant to the Federal or State ESA, the Wildlife Agencies will determine whether additional conservation measures, beyond those prescribed by the Subarea Plan, are necessary to adequately protect the species. If no such measures are necessary, the species will be added to the covered species list using the Federal and State take authorization amendment process if requested by the City.

If the Subarea Plan conservation measures will not adequately protect the species, the Wildlife Agencies will work with the participants to identify and jointly implement the steps necessary for coverage. These may include the following measures:

- Management practices and enhancement opportunities within the Reserve, provided these measures do not adversely affect any covered species; and
- Habitat acquisition through the reallocation of Federal, State, and regional funds identified for Rancho Palos Verdes Subarea Plan implementation, provided such reallocation does not adversely affect any covered species.

If these options are not adequate to meet the species' conservation requirements, the Wildlife Agencies will determine the additional measures necessary to add the species to the covered species list. Preference will be given to conservation means that do not require additional mitigation or dedication of land. If conservation measures necessary to add the species to the covered species list are identified when or after the species is proposed for listing, the City (or other parties holding permits issued by the City through this Subarea Plan) will not be required to approve or implement these conservation measures until such time as the species is listed.

5.10 PERMANENT RESOURCE PROTECTION

5.10.1 Local Resolutions

As has been described, the City will update, consolidate, and codify the environmental regulations contained in this Subarea Plan into the General Plan, as appropriate. Additionally, the City implements CEQA through the development review and approval process, which requires protection of significant biological resources and mitigation for project impacts. Findings of consistency with the Subarea Plan will be required for all projects requesting issuance of take authorizations.

5.11 COORDINATION WITH OTHER NCCP SUBAREA PLANS

No other jurisdiction within the Los Angeles Subregion is currently participating in the NCCP program. Should new NCCP Subarea Planning programs be initiated, the City would coordinate with those jurisdictions, as necessary.

SECTION 6 RESERVE MANAGEMENT

As an urban Reserve plan for wildlife and plants, the Rancho Palos Verdes Subarea Plan will enhance the city's quality of life and provide the city with recreational and educational opportunities while conserving the city's unique biodiversity and maintaining populations of sensitive resources. To succeed in these goals, this Subarea Plan will require management practices and some land-use restrictions on conserved lands that give special consideration to the interface between developed lands and open space. Adaptive management measures and compatible adjacent land uses will minimize impacts to individuals or populations of covered species from development abutting the Reserve. A process for monitoring habitats and species in the Reserve will help to improve the effectiveness of resource management. The following sections establish general guidelines for compatible land uses and development within and adjacent to the Reserve and provide a framework for consistent and coordinated management and monitoring of the Reserve.

Existing legal land uses adjacent to the Reserve may continue, and existing ownerships will be maintained until lands are obtained by public entities through purchase, dedication, or donation. On private lands that become part of the Reserve, public access will be allowed only on properties where access has been granted by the owner through an appropriate easement or on property that has been voluntarily dedicated in fee title to a public agency or nonprofit organization. All new public facilities will be reviewed for consistency with this Subarea Plan regarding public safety and to minimize management concerns and biological impacts.

6.1 HABITAT MANAGER

The City has selected the Palos Verdes Peninsula Land Conservancy (PVPLC) as the designated Habitat Manager for the Reserve. Some conserved habitat areas addressed by this Subarea Plan are currently managed by other organizations contracted by the private landowners (e.g., Ocean Trails and Oceanfront Estates mitigation lands). Management of these private lands would be transferred to the PVPLC once the monitoring requirements of the Wildlife Agencies have been met. The PVPLC will work with the City to ensure that habitat on these lands is adequately maintained.

6.2 FRAMEWORK MANAGEMENT GUIDELINES

6.2.1 Development of Public Use Master Plan

Within two years of the signing of the Implementing Agreement, a Public Use Master Plan (PUMP) shall be developed jointly by the City and the PVPLC to address issues such as public access, trailhead locations, parking, trail use, fencing, signage, lighting (if any), fire and brush management, minimizing impacts to adjacent neighborhoods, public involvement in advisory capacities, and other issues that may arise. This section provides management guidelines and measures for the development of the PUMP, to reduce habitat impacts of land uses within and adjacent to the Reserve. The PUMP for the site would be created based on extensive public input and would have to be approved by City Council and the Wildlife Agencies. Prior to the final approval of the PUMP by the Wildlife Agencies, all lawful uses and activities that are occurring in the Reserve at the time of approval of this Subarea Plan by the City Council shall be

deemed acceptable and allowed to continue unless otherwise restricted or prohibited by the Final approved PUMP.

6.2.2 Development Adjacent to the Reserve

6.2.2.1 Management Issues

No new development activities will be allowed in the Reserve, except for the public and private infrastructure projects identified in this Subarea Plan, geological testing in support of compatible land uses, landslide monitoring, and any emergency actions associated with landslide abatement and remediation activities. Development adjacent to the Reserve, however, may indirectly affect the Reserve. These indirect impacts will be addressed through the existing project review process and CEQA documentation, as required. In reviewing a proposed development project adjacent to the Reserve, site design issues that need to be addressed are avoidance or minimization of impacts to biological resources and retention of native habitats. Potential impacts to biological resources from existing and new development adjacent to the Reserve will be considered in the design process. These include the locations of access and staging areas, fire and brush management zones, potential for introduction of nonnative species, increased night-lighting, increased stormwater and urban runoff, increased noise level and public access to habitats supporting covered species.

6.2.2.2 Project Design Review and Best Management Practices

The following guidelines are designed to protect biological resources in the Reserve during construction of new development directly abutting the Reserve:

1. Review grading plans of development directly adjacent to the Reserve boundary (including access routes, staging areas, etc.) to ensure the plans are consistent with this Subarea Plan, educate contractors about the biological sensitivities associated with the area, and monitor construction to ensure compliance with project-specific mitigation measures.
2. All construction site vegetation clearing will be conducted during the non-breeding season (September 1 to February 15) to avoid destruction of active bird nests. If vegetation clearing must be conducted during the bird breeding season, a nest survey must be conducted and a 15 meter (50 feet) exclusion zone is placed around all active nests (i.e., active nests with eggs or chicks) until the nest becomes inactive
3. Use existing access roads outside the Reserve wherever practicable. Clearly mark all access routes outside existing roads or construction areas. Develop an emergency access plan for the utility companies with facilities within the Reserve.
4. When stockpiling topsoil, it should be placed in areas to be affected by project development.
5. Locate construction staging areas at least 15 meters (50 feet) away from the Reserve boundary and natural drainages. Designate no-fueling zones a minimum distance of 15 meters (50 feet) from all drainages and away from the Reserve boundary.
6. Schedule construction directly adjacent to the Reserve to minimize potential indirect impacts to biological resources in the Reserve. Construction adjacent to drainages should occur during periods of

minimum flow (i.e., summer through the first significant rain of fall) to avoid excessive sedimentation and erosion and to avoid impacts to drainage-dependent species. Construction adjacent to habitats occupied by breeding sensitive wildlife species should be scheduled to avoid the breeding season (February 15-August 31) if practicable.

7. Minimize construction noise impacts during the bird breeding season (February 15-August 31) by precluding noise levels greater than 65 dB hourly L_{eq} at the edge of habitat occupied by noise-sensitive covered bird species where existing noise conditions are less than this noise threshold. Conduct pre-construction surveys of potentially affected conserved habitat between mid-January and mid-March. If no noise-sensitive breeding bird species are detected within 15 meters (50 feet) of the construction activity by this date, construction can proceed.
8. Locate new roads, trails, and utility corridors in areas that minimize habitat fragmentation and edge effects.
9. Place temporary construction fencing at the planned limits of disturbance adjacent to the Reserve. Add silt fencing to these fences to minimize excessive sedimentation into drainages.
10. Encourage undergrounding of utilities and use of trenchless technology, where feasible. Minimize the width of construction corridors and easements, and where possible, use less impactful construction practices such as jacking pipelines under drainages.
11. Revegetate cut/fill slopes not subject to fuel modification and adjacent to conserved habitat with appropriate native species.
12. Require approved restoration plans and construction monitoring for all construction projects within and adjacent to the Reserve.
13. Evaluate the practicality of noise barriers for short sections of road that may chronically affect breeding wildlife.
14. Avoid sidecasting of materials during road and utility construction and maintenance.

6.2.3 Fire and Brush Management

Fire management can focus on two potentially different objectives: achievement of biological resources goals and hazard reduction for humans and their property. Biological resource goals recognize that fire is a natural process in ecosystems. Coastal sage scrub depends on a regular cycle of burning to maintain a balance of species, create vegetation mosaics that favor increased animal species diversity, provide habitat for species characteristic of early post-fire landscapes, and control exotic plant species invasion. Fire and brush management can also affect restoration of disturbed habitats and site hydrology, which will directly affect habitat value for wildlife. Fire management for hazard reduction for humans and their property focuses on reducing fuel loads in areas where fire may threaten human safety or property, suppressing fires once they have started, and providing access for fire suppression equipment and personnel.

6.2.3.1 Management Recommendations

Fire and brush management will be prioritized for human safety, but will also consider biological resources, where appropriate. Therefore, fire and brush management practices in the Reserve need to

consider habitats and target species, proximity to developed areas, and type of development. Standard fire protection measures include vegetation management and fuel reduction by prescribed burning, disking, chaining, vegetation clearing, and removal. Fire management through prescribed burns will not be feasible in Rancho Palos Verdes because of the relatively small size of the Reserve, its proximity to development, and the type of habitat that occurs within the Reserve. The biological effects of alternative methods of fuel reduction should be weighed against their effectiveness in reducing fuel loads and fire frequency. For example, disking creates opportunities for invasive weeds to gain a foothold in the Reserve, but is extremely effective in reducing the fuel load. With both biological resources and human safety considerations in mind, the following management guidelines should be implemented for vegetation within the Reserve.

1. Maintain a 15-meter (50-foot) brush management zone around all houses, buildings, or other structures. Ornamental landscapes individually planted, spaced, and maintained in such a manner that do not form a means of transmitting fire from native growth to structure can be included as part of the 15-meter (50-foot) brush management zone. In certain situations, a 100-foot brush management zone may be needed for fire protection (e.g., structures above steep slopes). Landscape species must be either native species or non-invasive non-native species. Consistency with the City's fire code is required. "State fire code requires 30 feet minimum of cleared non-burnable zone and up to 100 feet or more under Fire Marshal's orders. The City shall consult with the Fire Marshall to ensure all fuel modification zones adjacent to the Reserve are adequate.
2. Brush management will occur outside the Reserve for all new projects. If new brush management zones need to be established within the Reserve, a qualified biologist shall survey the area before clearing activities to identify sensitive resources within the zone. If a sensitive resource is present, the biologist shall make recommendations to minimize impacts to the resource.
3. Maintain brush management zones primarily for human safety, using mechanical fuel control measures such as mowing, chopping, crushing, chaining, removal, and herbicide. In general, chopping and crushing are the recommended methods based on biological and fuel reduction values and safety concerns.
4. If recommended by the project biologist, remove debris and trimmings produced by the removal process from the site or, if left, convert them into mulch by a chipping machine and evenly disperse them to a maximum depth of 6 inches.
5. Where possible, existing brush management zones shall be located within the owners' property or lots owned and maintained by associations representing common ownership (e.g., homeowners' associations). Brush management zones for new development shall be incorporated in the development impact boundaries so they will not encroach into the Reserve.
6. The maintenance of brush management zones is the responsibility of the property owner or associations representing common ownership benefiting from the brush management. Brush management should be encouraged annually so that large fuel accumulations do not necessitate brush management during the bird-breeding season. To the maximum extent practical, brush management should be conducted outside the bird-breeding season, which typically occurs between February 15 to August 31.

7. If brush management zones extend off site, recorded documents shall be prepared that clearly state the responsibilities and rights of the parties involved relative to the establishment and maintenance of the brush management zones.

6.2.4 Fencing, Signs, and Lighting

Fencing plays an important role in the use of the landscape by humans, domestic animals, and wildlife. Fencing can control human access, particularly off-highway vehicles, and can prevent road kills of terrestrial wildlife. Fencing, however, also can restrict normal wildlife movement and access to food and water, and guide wildlife onto roads.

Signs educate, provide direction, and promote the sensitive use and enjoyment of natural areas, but they can also inadvertently invite vandalism and other destructive behavior. Signs that explain the rules of the Reserve (e.g., hiking, bicycle riding and horseback riding) are most effective at public entrance points. Signs for educational nature trails and on roads near wildlife corridors (to reduce road kills) also should be posted at appropriate locations.

Artificial lighting adversely affects the habitat value of the Reserve, particularly for nocturnal species. Therefore, lighting should not be permitted in the Reserve except where essential for roadways, facility use, and safety. Along Reserve edges, major highway lighting should be limited to low pressure sodium sources directed away from Reserves.

6.2.4.1 Management Recommendations

Fencing

1. Dismantle existing fencing inside the Reserve, except where needed to:
 - Protect particularly sensitive species or habitats. For example, perimeter fencing could be used in habitat linkage areas where Reserve widths are narrower and there is greater exposure to adverse edge effects.
 - Direct human access away from sensitive resource areas. Efforts to limit human access should involve the use of natural vegetation, topography, signs, and limited fencing.
 - Protect from natural hazards or other public safety needs.
2. Design and locate new fences within the Reserve so they do not impede wildlife movement.

Signs

1. Provide educational brochures, interpretive kiosks, and signs to educate the public about the resources and goals of the Subarea Plan and Reserve.
2. Establish signs for access control and education at the periphery of the Reserve that are accessible to individuals. Post signs to prohibit firearms and unleashed pets.
3. Install signs for educational nature trails.

4. Limit the use and/or language of signs that might attract attention to sensitive species, because such designation may invite disturbance of their habitat.
5. Install temporary signs to indicate habitat restoration or erosion-control areas.
6. Install barriers and informational signs to discourage shortcuts between established trails.
7. Establish road signs near wildlife corridors to help reduce road kills.
8. Consider signs denoting reduced speed limits along roads that have relatively high incidence of road killed wildlife.
9. Include, where appropriate, contact information for law enforcement, and management staff.

Lighting

1. Eliminate lighting in or adjacent to the Reserve except where essential for roadway, facility use, safety, and security purposes.
2. Use low-pressure sodium illumination sources. Do not use low voltage outdoor or trail lighting, spot lights, or bug lights. Shield light sources adjacent to the Reserve so that the lighting is focused downward and away from habitat areas.
3. Avoid excessive lighting in developments adjacent to the Reserve through appropriate placement and shielding of light sources.

6.2.5 Recreational Activities

Public access is appropriate in selected areas of the Reserve to allow entry for passive recreational purposes and to promote understanding and appreciation of natural resources. Excessive or uncontrolled access, however, can result in habitat degradation through trampling and erosion (e.g., along trails) and disruption of breeding and other critical wildlife functions at certain times of the year. Passive recreational activities (e.g., horse riding, hiking, bicycling, and bird watching) are anticipated within the Reserve and are generally compatible with conservation goals. In general, passive activities pose a significant threat to biological resources when the level of recreational use becomes too intense or occurs in areas with sensitive resources.

Because of the relatively small size and fragmented nature of the Rancho Palos Verdes Reserve network, active recreational uses that require new development, such as paved access roads, service facilities, maintenance buildings, and exotic landscaping, are not appropriate land uses within the Reserve and shall not be sited within the Reserve boundaries. Adverse impacts of motorized off-road vehicle use include reductions in air quality because of automotive exhaust and creation of dust, soil erosion and sedimentation into local waters, noise, and habitat degradation. Disturbance from off-road vehicles can also disrupt breeding activities. For these reasons, off-road vehicle use, except for medical emergency or law enforcement activities, is not compatible with conservation goals.

6.2.5.1 Management Recommendations

Recreational use of the Reserve should be consistent with the protection and enhancement of biological resources. Existing recreational facilities should be managed to promote the maintenance of habitat value surrounding these facilities. Anticipated active recreation projects should be accommodated outside the Reserve on land not required to meet covered species' habitat needs. The following actions should be taken as a part of the development of the PUMP:

1. Determine appropriate levels of passive recreational activities within the Reserve, depending on the resources to be protected, season, and successional stage of the adjacent habitat.
2. Develop a Reserve Trails Plan consistent with the Rancho Palos Verdes Conceptual Trails Plan (as amended), in such a way that new trail construction avoids direct access to sensitive resource areas and major biological features (e.g., 7.6-meter [25-foot] setback to coastal bluffs).
3. Develop a plan for five passive overlook areas with benches, picnic tables, tie rails, portable toilets, and trash cans, to be located near preserve boundaries where no existing habitat would be disturbed.
4. Locate overlooks and staging areas for trailheads adjacent to existing roads and away from sensitive resource areas.
5. Restrict existing active uses, such as the archery range or paragliding activities to areas where impacts to habitat can be minimized.
6. Use "fire-safe" locally native plants in landscaping along Reserve edges. Prohibit the use of invasive exotics, and adopt an exotic plant control plan.
7. Require lighting use restrictions consistent with existing City lighting guidelines within 46 meters (150 feet) of the Reserve boundary. Direct lighting in adjacent areas away from the Reserve.
8. Minimize adverse effects of passive recreation, such as trampling vegetation and erosion.
9. Provide litter control measures, such as closed garbage cans and recycling bins, at access points within the Reserve.
10. Prepare and maintain trail surfaces to minimize erosion. Do not use materials for trails that would be a source of seed of invasive exotic species. Prohibit use of eucalyptus chips that could suppress native plant growth adjacent to trails.
11. Limit equestrian use to specified trails where impacts to habitat can be minimized. If trails become degraded because of heavy use, rotate or limit use during certain seasons to minimize further degradation.
12. Locate corrals, arenas, stables, and other associated equestrian facilities outside the Reserve. Any corrals and/or stables located within this Subarea Plan area must evaluate the potential for supporting cowbirds. If cowbirds are present, a cowbird trapping program should be implemented.
13. Ensure that public access to the Reserve is consistent with the protection and enhancement of biological resources. Monitor existing access areas to ensure that they do not degrade or inhibit biological values, and prioritize future access areas for protection of biological resources.
14. Seasonally restrict access to certain trails if deemed necessary to prevent disturbance of breeding activities of covered species.

15. Close trails designated as unnecessary in the Public Use Master Plan (PUMP) to minimize biological impacts. For example, use fencing or signage to prevent the use or creation of unauthorized trails and protect sensitive plant species adjacent to established trails on bluff slopes in the area between Point Vicente and Long Point, and from the west edge of Portuguese Bend south to the city limits. Abandon and revegetate steep eroding trails.
16. Locate new trails away from sensitive resources or restrict their use.
17. Construct barriers or signage at viewpoints or prominent features to prevent access to sensitive coastal bluff areas. This measure would be appropriate at viewpoints or prominent features along established trails in the area between Point Vicente and Long Point, and from the west edge of Portuguese Bend south to the Rancho Palos Verdes city limits.
18. Construct trails for shoreline access to prevent extensive trampling and compaction. Close and revegetate all other unauthorized and unnecessary trails.
19. Install water-bars on steep trails to minimize erosion and sedimentation.
20. Provide a 30-foot upland buffer along major drainages for new trails sited adjacent to drainages.
21. Establish a trail inspection and maintenance program to monitor trail conditions, and detect vandalism and habitat degradation.

6.3 HABITAT MANAGEMENT AND MONITORING

6.3.1 Reserve Habitat Management Plan

The Habitat Manager (PVPLC) shall develop a Reserve Habitat Management Plan (RHMP) for the Reserve. The RHMP may consist of numerous subsidiary plans and reports and shall be reviewed and approved by the City and Wildlife Agencies. The RHMP will have the following components and reporting requirements:

6.3.1.1 Initial Plans (may be combined or issued separately)

- *Initial Management and Monitoring Report.* Plant, gnatcatcher and blue butterfly surveys and data analysis.
- *Predator Control Plan.* Based on the surveys, this plan will make provision for control of cowbirds, feral cats, and other predators; it will be revised every three years or if additional controls are needed.
- *Habitat Restoration Plan.* To encourage long-range planning, this plan will have a planning horizon of five years and will be revised every three years.
- *Targeted Exotic Plant Removal Plan.* Based on a survey of all of the lands in the preserve, this plan will designate 5 acres or 20 small sites where invasive plants will be removed during the year ahead; this weed control will be done every year.

6.3.1.2 Annual Plans

- *Targeted Exotic Plant Removal Plan.*

6.3.1.3 Annual Reports (may be combined or issued separately)

- *Monitoring Report on Habitat Restoration Areas.* Using standard monitoring protocol as detailed in the Habitat Restoration Plan.
- *Report on Targeted Exotic Plant Removal Efforts.*
- *Report on Covered Species Monitoring.* Years without Comprehensive Report.
- *Habitat Tracking.* Produced jointly by the City and PVPLC.

6.3.1.4 Reports Every Three Years

- *Comprehensive Management and Monitoring Report.* Surveys and data analysis regarding habitat, covered plants, gnatcatchers, cactus wren, and butterflies.
- *Updated Predator Control Plan.*
- *Updated Habitat Restoration Plan.*

6.3.2 Management, Restoration and Reporting for the Reserve**6.3.2.1 Initial Management and Monitoring**

This section outlines the necessary monitoring tasks, including methodologies, data collection and analysis. Refer to Section 6.6 for additional research that may be implemented as funds and/or researchers become available.

6.3.2.1.1 Plant Species Monitoring

Five target plant species occur within the Rancho Palos Verdes city limits. These include aphanisma, South Coast saltscall, bright green dudleya, Santa Catalina Island desert-thorn and Catalina crossosoma. The first three species occur in southern bluff scrub, whereas the latter species occurs in CSS. An additional three sensitive species have not been observed in the Rancho Palos Verdes city limits, but may occur on the Palos Verdes Peninsula: Peirson's morning-glory (*Calystegia peirsonii*), southern tarplant (*Centromadia parryi* ssp. *australis*), and Lyon's pentachaeta (*Pentachaeta lyonii*). The following discussion of plant species monitoring focuses only on target plant species currently known from the study area. If additional target species not currently known in the study area are included to the City's covered species list, monitoring efforts may be expanded to include these species.

Population Parameters

Long-term monitoring will focus on population parameters that indicate whether a population is expanding, stable, or declining, such as population size, population density, and population structure (e.g.,

age classes). Parameters to be measured may vary from species to species according to species life history (see below). Two additional parameters, survivorship and fitness (e.g., significant decreases in fruit or seed set), are acknowledged as important in identifying causes of population decline but will not be included in the Rancho Palos Verdes field monitoring program. Parameters included in this program are discussed below.

- **Population Size.** It is well recognized that small populations are at an increased risk for extirpation through both short-term catastrophic events and long-term genetic events that threaten population viability (Allendorf 1983; Gilpin and Soulé 1986; Messick 1986; Falk and Holsinger 1991; Ellstrand and Elam 1993). Although it would be desirable to determine minimum viable population sizes for the plant species of concern and manage populations accordingly, this task is beyond the scope of this monitoring program. All covered species included in the field effort (aphanisma, South Coast saltscale, bright green dudleya, Santa Catalina Island desert-thorn, and Catalina crossosoma) will be monitored to determine trends in population size. Population size data will be correlated with environmental and ecological data, to the degree feasible, to determine possible causes for declining trends. Depending on the cause, significant declines in population size over time may warrant remedial measures (including but not limited to reintroduction) to reverse the declining trend.
- **Population Density.** Populations too widely dispersed face the same risks as small populations, but are particularly susceptible to adverse genetic effects associated with lowered outcrossing rates. Population density data will be correlated with environmental and ecological data, to the degree feasible, to determine possible causes for declining trends. Depending on the cause, significant declines in population density over time may warrant remedial measures to reverse the declining trend. Density monitoring is not warranted for species or populations that consist of one or only a few individuals (e.g., Catalina crossosoma, some populations of aphanisma). Furthermore, density monitoring may not be feasible for some species or populations located on steep cliffs (e.g., aphanisma, South Coast saltscale, bright green dudleya).
- **Population Structure.** For some species (e.g., Santa Catalina Island desert-thorn and Catalina crossosoma), the presence of flowering plants does not provide an adequate indication of the state of the population or its potential for persistence (Oostermeijer et al. 1992). For example, a high percentage of flowering may be observed in a relatively old, even-aged stand of plants. By its very structure, however, this population may be more susceptible to extirpation than a population with a lower percentage of flowering but a variety of age classes. Population structure, as measured by the presence of various age classes, can provide an additional indication of the overall vigor and long-term “potential” of a population. The presence of individuals representing more than one stage of a life cycle (e.g., seedlings, juveniles, flowering and non-flowering adults) is representative of a “dynamic” population. Conversely, populations characterized by minimal or no seedling recruitment are typically considered “stable,” even if there is a high degree of adult flowering or non-flowering individuals. Although stable populations may persist for long periods, they have a greater probability of becoming extinct over time because of their lack of recruitment. Additionally, stable populations may experience declining trends in population size, even if the rate of mortality is relatively low, simply because individuals that die are not replaced (Oostermeijer et al. 1992).

The presence of age classes within a population will be monitored for herbaceous perennials (e.g., bright green dudleya) or shrubs (Santa Catalina Island desert-thorn, Catalina crossosoma) that are on the covered species list and located in accessible locations. For example, it is uncertain whether age class monitoring will be possible for bright green dudleya because of its generally inaccessible location on bluffs. The presence of vegetative reproduction (e.g., clones, stem or corm offshoots) will be considered evidence of a dynamic population.

Methodology

Field monitoring will focus on detecting both immediate threats to population viability and long-term trends that indicate population decline. Immediate threats may include habitat loss or degradation (e.g., vehicles, trampling, plant collecting, illegal trash disposal and erosion) and will be measured through visual assessments. Natural events that temporarily affect plant populations (e.g., fire) will be recorded but typically will not be considered detrimental to the long-term survival of a population. Population declines may be more difficult to assess because many species experience natural fluctuations in population size over time. Efforts will be made to correlate apparent changes in population status with environmental or ecological factors.

During the initial monitoring effort, a reconnaissance survey will be conducted for all populations included in the field-monitoring program. The purpose of this survey will be to refine existing information and establish baseline conditions. Specific objectives of this survey will be to define population limits, estimate population sizes, and map populations onto base maps. The reconnaissance survey is expected to be a one-time effort, and can be eliminated if recent and sufficiently detailed baseline information is available. Field monitoring will include a qualitative assessment of disturbance factors that may threaten the population. These factors will be recorded on the appropriate data sheets and monitored over time to determine their effect on the target population. Where adverse effects are obvious, however, remedial measures may be implemented immediately.

Most of the existing populations of covered plant species are currently small enough (< 1,000 individuals) that direct counts can be made to determine both population size and density, and all populations can be monitored. Bright green dudleya - occurs in larger populations and it is not feasible to establish transects to census this species because of the inaccessibility of occupied sites (e.g., cliff faces). In this case, population size and/or density will be assessed by direct counts in sample plots or estimates using binoculars from vantage points or by photodocumentation, as discussed below.

Photodocumentation

Permanent photodocumentation points may be established for all monitored plant species plots but will be particularly valuable for species for which direct monitoring of individual plants is impossible because of accessibility problems and for which individuals may be reasonably counted or assessed from photographs (e.g., bright green dudleya). Photodocumentation points will be established at least three vantage points adjacent to the subject population(s). Color film will be used and photographs will be taken at the same time of year to minimize discrepancies resulting from phenology. Additionally, cameras should maintain the same orientation and focal length from year to year. Photographs should be taken during each monitoring period.

Climatic Data

Climatic information (e.g., precipitation and temperature) should be collected/recorded from the nearest weather station monthly. This information will be used to correlate climatic conditions with species presence and population size in any given year, for both plant and animal target species. The established weather stations are on the Peninsula, Torrance, and Long Beach.

Timing

Monitoring of covered plant species should be conducted at the most phenologically appropriate time for each species, depending on the type of monitoring being conducted. The phenological condition of each species should be verified before initiating the monitoring effort. Target dates for monitoring are between April and May for aphanisma, between May and July for South Coast saltscall, between April and June for bright green dudleya, June for Santa Catalina Island desert-thorn, and between February and May for Catalina crossosoma.

Monitoring Frequency

Monitoring frequency for covered plant species will vary according to species' habit (e.g., annual versus perennial). Other considerations in monitoring frequency may include population trends noted over time and budget and personnel available for monitoring. It is recommended that annuals and herbaceous perennials be monitored during the spring season after the Peninsula experiences an annual rainy season that exceeds 75-90 percent of the long-term average annual precipitation. This will allow for an unbiased assessment of the population status under comparable weather conditions between monitoring years. Longer-lived shrubs should typically be monitored once every three years.

For those that need more frequent monitoring, reports will be included in the yearly Targeted Exotic Removal Report. Evidence of dramatic change in the populations of covered plant species will be reported to the Wildlife Agencies and recommendations will be developed to address the concerns.

Data Collection

It is critical to the success of the monitoring program that a central data collection system and a central repository for data are established and accessible to all personnel involved in the monitoring program, including the Wildlife Agencies. A statewide monitoring database structure is currently being developed by CDFG and others to allow for NCCP and other monitoring data to be stored consistently. This database is expected to be finalized and operational in 2004. Data collected should be stored in such a way that it can be easily incorporated into this database. Standardizing data collection is essential to meeting monitoring objectives and streamlining the data collection, analysis, and reporting efforts. Protocols and/or refinements can be made as the program evolves and as monitoring priorities shift; however, any changes should be well documented and accessible to all persons involved in monitoring.

Monitoring documentation should include the following: hard copy or electronic data collection field forms, data reduction forms, and final summary forms (Clarke 1986). Establishing these forms in advance of the field effort will ensure that all aspects of the monitoring effort are examined, and will focus the

effort on the stated objective(s). Additionally, maps should be provided (as needed) that depict individual site disturbances and other indicators/evidence of change.

Data collection forms will be used to record quantitative data at each point location and assess general conditions within the monitoring site. Data reduction forms will be used in the office following the data collection effort to summarize sampling site data and perform initial data analyses (e.g., means, variances, standard deviations, etc.). A final summary form will be used to provide an evaluation of each monitored population. Final summary forms are designed to condense quantitative data into summary statistics that reveal the overall patterns being monitored. These forms will provide information used in the monitoring reports.

Data Analysis

Data analysis will be performed as part of the Comprehensive Report every three years. Population parameters measured to indicate whether a population is expanding, stable, or declining include population size, plant density, and population structure (e.g., expressed as age class frequency) as appropriate given the size of local populations.

After multiple years of data are collected, a test for time series analysis may be used to identify significant trends. The major task of a time series analysis is to describe the nature of the variation of a variable at different points in time so that its future values can be predicted (Kachigan 1986). A time series analysis is also used to determine whether a long-term trend is significant or just part of an extended cyclic process of population change.

Reporting

The main product of the covered plant species monitoring will include a report (with accompanying maps and photographs) that indicates the status of species at each monitoring location. The first-year monitoring effort will provide the “baseline” for subsequent monitoring years. The report will provide a concise summary of any proposed actions, their purpose and priority, schedule for implementation, maintenance frequency, labor and materials, and cost estimate for implementing any proposed actions. In addition to the written report, digital biological monitoring data will be made available to the Wildlife Agencies for incorporation into the statewide monitoring database. Refer to Section 6.4.2 for additional information on the reporting program.

6.3.2.1.2 Animal Species Monitoring

Monitoring of focal wildlife populations is prioritized toward species that are considered indicators of ecosystem function and species whose population status is of concern to the USFWS and CDFG. The three focal species selected for monitoring are: California gnatcatcher, coastal cactus wren, and El Segundo Blue Butterfly. If Palos Verdes Blue Butterfly is reintroduced into the Reserve, this species would be added to the monitoring program. Because of their small population size, concentrated distributions in this planning area, and isolation from other populations, these three species may be particularly vulnerable to local extirpation.

Methodology

The goal of population monitoring is to implement a monitoring program sufficient to detect significant long-term declines in population levels of focal species within the reserve system. A complete survey of all potential habitat within the Reserve populations of California gnatcatcher and cactus wren in Rancho Palos Verdes is proposed to be done every three years, per standard survey protocols. It is assumed that gnatcatcher and cactus wren surveys will be done concurrently. It is further assumed that monitoring of gnatcatchers and cactus wrens will facilitate a general qualitative assessment of CSS habitat quality throughout the Reserve. A standard protocol for surveying California gnatcatchers and coastal cactus wrens has been developed and should be used by the monitoring program to develop comparable trends. This survey protocol is detailed below.

- **Survey Frequency.** Gnatcatchers/wrens are difficult to detect and can easily be missed with just one site visit. At a minimum, a given area within a habitat patch will be surveyed twice with at least a seven-day interval between site visits during January through mid-March. A third site visit to the habitat patch will focus on relatively large areas of the patch (i.e., >20 acres) that lack any gnatcatcher/wren sightings after two site visits. Maximum survey efforts for each 100-acre habitat patch will be approximately 18 cumulative field hours.
- **Time of Day.** Surveys will begin within one hour after sunrise and end by noon. Surveys will begin later in the morning when ambient morning temperatures are less than 40°F.
- **Areal Coverage of Survey.** The calling rate of California gnatcatchers is highly variable (Preston et al. 1998). Relatively slow, methodical transects through presumptive gnatcatcher habitat are required to maximize the potential for detecting gnatcatchers/wrens. Rate of coverage will be 100 acres per person per six hours of survey effort. Surveys are most effective when pairs of biologists survey an area together to distinguish between pairs and minimize double counting of the same pair/individual.
- **Survey Weather Conditions.** Gnatcatchers/wrens may be more difficult to detect under windy (> 10 mph) and/or cold (< 40°F) conditions. Very hot conditions (> 95°F) also seem to depress activity. Surveys should not be conducted under these extreme weather conditions.
- **Taped Vocalizations.** Taped vocalizations will be used on all surveys because there may be extensive inter-observer variation in pishing. Volume of tape players should be similar to that of a quiet mew call or contact note produced by a California gnatcatcher/cactus wren. Excessive volume can either draw in or scare off birds from their normal territory and thus influence the estimate of population size. Use of the tape should be infrequent in both time and space. Allow sufficient time for the birds to respond (e.g., 5 to 10 minutes) before playing the tape again. Do not induce detected birds to follow the taped call, thereby minimizing potential double counting.
- **Survey Routes.** Survey routes through the habitat patch will be systematic so that the area is completely covered. Survey routes will be varied relative to time of day between visits. A zigzag pattern that starts from the center of the habitat patch and moves toward the periphery of the patch is highly recommended. Distinct topographical features (e.g., ridge lines or major trails) often form the boundaries between gnatcatcher territories. Note the location of territorial behavior if observed.

- **Detailed Recording of Sighting Information.** Gnatcatcher/cactus wren sightings will be recorded on a standard field data form (Appendix C), as well as on a standard field topographic map of the plot. Attribute and location data should be stored digitally in such a way that it can be easily incorporated into the statewide monitoring database currently being developed by CDFG and others. Information to be recorded for each sighting will include, at a minimum, the following:
 - Date and start/stop time of sighting.
 - Sex and age of individual(s).
 - Are any of the birds detected color-banded? -- record the color code.
 - Habitat type, dominant plant species, and vegetative condition (i.e., extent of disturbance).
 - Is the sighting a single bird, a pair, or a family group?
 - Is there any evidence of breeding activity (e.g., nesting behavior)?
 - Are there any other sensitive CSS species near the sighting?

Occupied and potential habitat for El Segundo Blue Butterfly within the Reserve shall be surveyed annually during the flight period of this species (February-March). Numbers of adults detected and condition of the larval habitat will be assessed and reported annually.

Data Analysis

As much as is practical, trend analysis methods will be used for data analysis of wildlife species. The statistical analysis of time-series data for trends has received extensive attention (e.g., Ralph and Scott 1981; Verner 1985; Sauer and Droege 1990; Gerrodette 1987, 1993). Once a sufficient time-series of population data is developed, long-term trend analyses can be conducted. The number of years of data necessary to reliably identify a long-term population decline depends on the variability of the data. In the short-term, the number of occupied sites, site turnover rate, and change in total population size between years will be indicative of at least short-term variation in local population levels that can be related to weather and site conditions (e.g., cold weather-induced population decline). If a negative population trend is detected, a more intensive investigation of the potential causes of the population decline (e.g., cowbird parasitism) should be initiated.

Reporting

A monitoring report documenting the results of the year's survey efforts will be prepared within three months of the completion of fieldwork. This report will identify any management actions (e.g., more detailed investigations) required to clarify or resolve problems identified by the monitoring program. Refer to Section 6.4.2 for additional information on the reporting program.

6.3.2.2 Predator Control Plan

The Predator Control Plan will be written based on the results of the first Management and Monitoring Report. It will recommend specific actions to be taken to reduce predation within the Reserve for the

following three years. It will be revised every three years based on the comprehensive survey to be done every three years.

Native species are often at a disadvantage after exotic species or nonnative predators are introduced, so special management measures may be needed to control these invading species. Nonnative plant and animal species have few natural predators or other ecological controls on their population sizes, and they thrive under conditions created by humans. These species may aggressively out-compete native species or otherwise harm sensitive species. When top predators are absent, intermediate predators can multiply and increase predation on native wildlife species and their nests. Feral and domestic animals, particularly cats, also prey on small native wildlife species. Stables may provide resources for increased populations of parasitic cowbirds, which adversely affect native songbird breeding populations.

A Predator Control Program shall be developed based on the results of the initial surveys. This program shall address the need to control feral and domestic animals, cowbirds, and large exotic predators. It shall be updated every three years after new surveys are performed.

Feral and Domestic Animal Control

These measures shall be considered for inclusion in the Predator Control Program for the Reserve.

1. Document evidence of feral or domestic animal use in the Reserve.
2. Establish an education program for homeowners regarding responsible pet ownership. The program should encourage 1) keeping pets indoors, especially at night; 2) having pets neutered or spayed to reduce unwanted reproduction and long-range wanderings; 3) bellinging of cats to reduce their effectiveness as predators; 4) keeping dogs on leashes when walking them on trails in Reserves; 5) discouraging release of unwanted pets into the wild; and 6) prohibiting the feeding of feral animals.
3. Fence selected segments of the Reserve boundary adjacent to housing to keep pets out of particularly sensitive areas.
4. Establish a feral animal removal program, as necessary. This program shall consist of trapping and removal at regular intervals throughout the year.

Cowbird Trapping Program

1. Document and monitor the extent of cowbird parasitism on target bird species nesting in the Reserve.
2. Establish a cowbird trapping program to increase nesting success of target species adversely affected by cowbird parasitism, as necessary.

Native Predator Control

1. Monitor population levels of selected predators (e.g., coyote, grey fox).
2. Institute an educational program to explain the role and necessity of large native predators within the ecosystem and the need to protect them from disturbance.

3. Initiate a program to control mesopredators (red fox, gray fox, skunks, raccoon, and opossum), if key native predator species are extirpated from the Reserve and studies indicate that these specific mesopredators are adversely affecting sensitive native wildlife.

Refer to Section 6.4.2 for additional information on the reporting program.

6.3.2.3 *Habitat Restoration Plan*

Restoration is the process of re-establishing or enhancing historical biological functions and values to degraded habitats. Restoration within the Reserve will consist of actively establishing native habitat in areas currently nonnative habitat or disturbed lands, based on a five-year Restoration Plan to be developed by the PVPLC in consultation with the City and the Wildlife Agencies. The five-year habitat restoration plan will be updated every three years to incorporate changes in priorities, conditions or unique situations while maintaining long-range planning perspective.

Active restoration of nonnative habitats and disturbed lands will require removal of existing non-native vegetation, seeding with native species, and monitoring the restoration effort until it is determined a success. As available funding permits, the habitat restoration program will focus on the creation of habitat for target species with the objective of increasing the overall habitat carrying capacity for the target species populations. Key habitats for restoration are CSS, cactus scrub, and Palos Verdes blue butterfly habitat. Figure 6-1 depicts potential restoration areas in the Reserve, ranks them according to priority for restoration to enhance the reserve design, and further classifies these areas according to suitable restoration habitat type.

6.3.2.4 *Management Recommendations*

Restoration is necessary to increase the quantity and quality of native habitat in the Reserve. This will improve the viability of the Reserve to provide additional habitat for target species. Habitat-specific restoration should occur only on sites assessed as suitable for that habitat type and should be implemented according to Priority 1, with initial restoration efforts occurring on high priority sites (Figure 6-1). Once the site and size of the restoration effort is determined, a project-specific restoration program should be prepared according to the following guidelines.

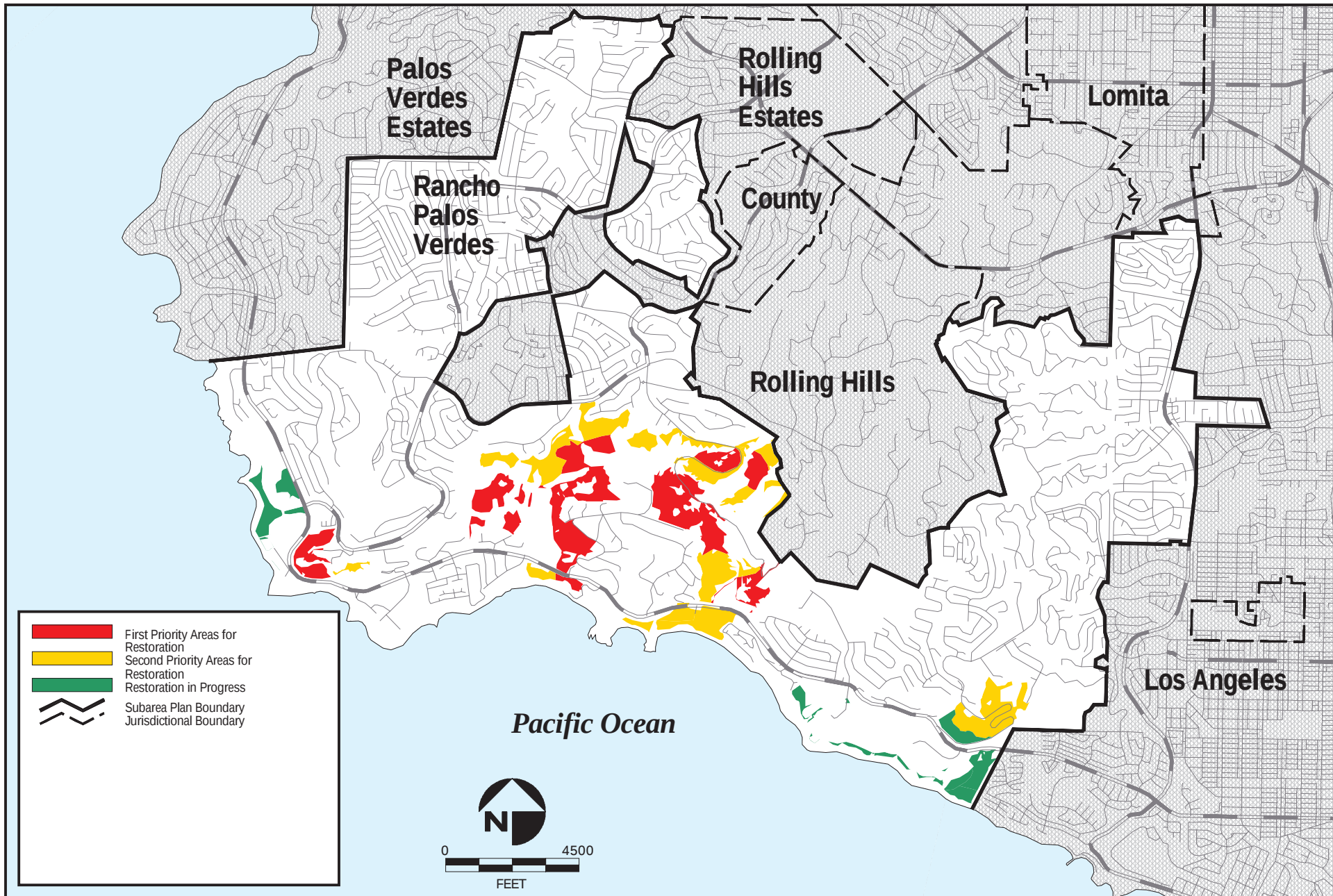
Develop a Detailed Habitat Restoration and Management Plan

The PVPLC will develop a five-year Habitat Restoration Plan. This plan shall:

1. Prepare one 5-acre (or greater) area each year by removing exotics; and
2. Revegetate that same 5-acre area (or greater) with native species in the subsequent year.

This plan will be reviewed and approved by the City and the Wildlife Agencies. PVPLC shall review this plan every three years after reviewing at least one year of comprehensive monitoring reports. The plan will address restoration design, installation procedures, maintenance and monitoring program, and success criteria.

Every effort will be made to obtain funding for additional restoration within the Reserve. Additional work will be included in the yearly habitat restoration plan, with site-specific monitoring requirements for each area. In situations where supplemental sites are added to those included in the Restoration Plan, a site-specific Habitat Restoration Plan will be developed with monitoring requirements appropriate to the situation.



FIGURE

6-1

Priority Habitat Restoration Areas within the Reserve

Restoration Design

The following will be included in the restoration design criteria:

1. Specified plant and seed palettes that will be used in the restoration effort. Tables 6-1 through 6-3 are recommended seed lists for use in the Reserve. These should be modified by the restoration biologist to make them more site-specific and correspond to site-specific restoration goals.
2. The types of erosion control that will be used and how they will be applied shall be outlined in the detailed restoration plan. Erosion-control measures can include, but are not limited to, straw wattles, blown straw, crimped straw, and/or erosion-control matting. No erosion control devices shall be used that contain seed from non-native plants.
3. Incorporation of local plant species of concern into the restoration program wherever possible and appropriate to the site conditions. Plan ahead when adding a sensitive species to the restoration plan to be able to obtain enough seed to have a viable restoration effort (Section 6.2.7).
4. No irrigation systems shall be installed within the City's Landslide Moratorium Area or the City's coastal setback zone unless such installation is approved by the City's geotechnical consultants. The following will be included in the preparation criteria:
 - Weed control should begin in the winter before installation of the restoration plan.
 - The restoration site should be sprayed with herbicide as needed during the winter and spring months.
 - After the weeds have been controlled, the site should be raked to remove above ground biomass, and remain fallow until the appropriate time to begin revegetation.
 - A restoration ecologist shall oversee any use of herbicide to control weeds, following the recommendations of a licensed Pest Control Advisor and shall be applied by a Qualified Applicator.
 - Prepare the site by restoring it to existing grade, fixing any erosion that may have occurred, and scarifying any compacted areas.
 - Apply erosion control measures where applicable.

Maintenance Program

1. Maintain the restoration site for five years following installation.
2. Perform maintenance on an as-needed basis, as recommended by the restoration biologist.
3. Perform the following maintenance activities to facilitate restoration success: weed control, erosion control, soil fertility management, and access control.

Table 6-1
Rancho Palos Verdes
Coastal Sage Scrub Seed Mix

Scientific Name	Common Name	Pound per Acre	%Pure Live Seed
<i>Artemisia californica</i>	California sagebrush	5.0	7.5
<i>Astragalus trichopodus</i> var. <i>lonchus</i>	Ocean locoweed	2.0	-
<i>Encelia californica</i>	California sunflower	2.0	24
<i>Eriogonum cinereum</i>	Ashy-leaf buckwheat	2.0	-
<i>Eriogonum fasciculatum</i>	California buckwheat	5.0	6.5
<i>Eriophyllum confertiflorum</i>	Golden-yarrow	2.0	18
<i>Lotus scoparius</i>	Deerweed	2.0	54
<i>Lupinus succulentus</i>	Arroyo lupine	2.0	83
<i>Malosma laurina</i>	Laurel sumac	1.0	-
<i>Nassella lepida</i>	Foothill needle-grass	2.0	36
<i>Nassella pulchra</i>	Purple needle-grass	2.0	42
<i>Salvia leucophylla</i>	Purple sage	2.0	49
<i>Salvia mellifera</i>	Black sage	3.0	35
Total		30.0	

Table 6-2
Rancho Palos Verdes
Coastal Cactus Scrub Seed Mix

Scientific Name	Common Name	Pounds per Acre	%Pure Live Seed
<u>Seeds</u>			
<i>Artemisia californica</i>	California sagebrush	4.0	7.5
<i>Encelia californica</i>	California sunflower	2.0	24
<i>Eriogonum cinereum</i>	Ashy-leaf buckwheat	2.0	-
<i>Eriogonum fasciculatum</i>	California buckwheat	5.0	6.5
<i>Eriophyllum confertiflorum</i>	Golden-yarrow	2.0	18
<i>Isomeris arborea</i>	Bladderpod	2.0	58.5
<i>Lupinus succulentus</i>	Arroyo lupine	2.0	83
<i>Nassella lepida</i>	Foothill needle-grass	2.0	36
Total		21.0	
<u>Cuttings</u>		Plants per Acre	
<i>Opuntia littoralis</i>	Coast prickly pear	200	
<i>Opuntia prolifera</i>	Coast cholla	160	
<i>Opuntia oricola</i>	Prickly pear	75	
Total		435¹	

¹ 3 m (10 ft) on center

**Table 6-3
Rancho Palos Verdes
Butterfly Habitat Seed Mix**

Scientific Name	Common Name	Pounds per Acre	%Pure Live Seed
<i>Artemisia californica</i>	California sagebrush	4.0	7.5
<i>Astragalus trichopodus</i> var. <i>lonchus</i>	Ocean locoweed	4.0	-
<i>Eriogonum fasciculatum</i>	California buckwheat	4.0	6.5
<i>Eriophyllum confertiflorum</i>	Golden-yarrow	2.0	18
<i>Gutierrezia californica</i>	California matchweed	3.0	2
<i>Lotus scoparius</i>	Deerweed	2.0	54
<i>Lupinus succulentus</i>	Arroyo lupine	2.0	83
<i>Mirabilis californica</i>	Wishbone bush	2.0	-
<i>Nassella lepida</i>	Foothill needle-grass	2.0	36
<i>Nassella pulchra</i>	Purple needle-grass	2.0	42
Total		23.0	

4. Remove or control invasive exotic species. Weed control will require constant diligence by the maintenance personnel. Invasive exotic species, such as pepper trees (*Schinus* spp.), gum tree (*Eucalyptus* spp.), castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*), and fennel (*Foeniculum vulgare*), will be removed wherever they occur within the restoration area. Annual weeds such as mustard (*Brassica* spp.), wild radish (*Raphanus sativus*), and annual grasses may also need to be controlled. The restoration biologist will determine what annual weeds need to be controlled to ensure restoration success.
5. Control erosion as necessary. Potential erosion-control measures include haybales, sandbags, silt fencing, and/or erosion-control matting. The restoration biologist will identify the need for erosion control during regular site visits.
6. Control access to restoration sites. Access to restoration sites should be on existing dirt roads. All vehicles should remain outside the restoration areas. If offroad vehicle or human activities become a problem in the restoration area, the restoration biologist will recommend the installation of fencing.

6.3.2.5 Targeted Exotic Plant Removal Plan

Each year, the PVPLC shall perform a survey of all properties included in the Reserve to identify locations where exotic species are prevalent. A letter plan will be developed selecting 5 acres or 20 small sites for removal each year. This weed control activity is in addition to the 5 acres being restored by the habitat restoration program (Section 6.3.2.3). The Targeted Exotic Plant Removal Plan will:

1. Prioritize areas for exotic species control based on aggressiveness of invasive species and degree of threat to the native vegetation. (Refer to Appendix D for a list of exotic plant species that could

threaten native habitats in Rancho Palos Verdes). Eradicate species based on biological desirability and feasibility of successful implementation.

2. Use an integrated pest management approach (i.e., use the least biologically intrusive control methods), at the most appropriate period of the growth cycle to achieve the desired goals.
3. Consider both mechanical and chemical methods of control. Only herbicides compatible with biological goals should be used. Only licensed pest control advisers are permitted to make specific pest control recommendations.
4. Properly dispose of all exotic plant materials removed from Reserve lands (e.g., in offsite facilities).

At the end of the year, a letter report will be prepared showing the locations of targeted exotic removal, with before and after photographs of the work done.

In the years without a Comprehensive Survey, the locations of the covered plant species will be visited and photographed by the surveyor during the course of the exotic removal effort. A brief summary of the condition of the four varieties of plants with identified locations will be included in the report, along with photographs. Several typical locations for bright green dudleya will also be included in the annual report. Any significant changes to the populations of these plants will be called to the attention of the Wildlife Agencies immediately.

6.4 REPORTING ON THE STATUS OF THE RESERVE

The Habitat Manager will submit a Comprehensive Report and Plan Report to the City and the Wildlife Agencies every three years that summarizes management and monitoring activities, describes management priorities for the next three-year period, reports on population monitoring and restoration activities, and evaluates funding and the ability to meet the resource management goals and objectives. This report shall include a summary of the financial requirements of plan maintenance, including reports on volunteer hours donated. Other reports shall be submitted as described above.

6.4.1 Biological Monitoring Program

The Subarea Plan is a comprehensive habitat-planning program that addresses multiple species habitat needs and the conservation of natural communities in Rancho Palos Verdes. In addition to identifying Reserves and compatible land uses within and adjacent to the Reserve, this Subarea Plan also seeks to maintain biological values of Reserves over time by reducing human-related impacts to target species and their habitats. Biological monitoring will allow the City and the Wildlife Agencies to evaluate whether the reserve system is meeting conservation goals for covered plant and animal species and their habitats, identify threats to covered species and habitats, and help prioritize management needs. Monitoring activities will be tracked through a formal reporting program that will assess the need for remedial or adaptive management and provide research recommendations.

6.4.1.1 Responsibilities and Coordination of Efforts

Implementation of the biological monitoring program is the responsibility of the PVPLC, with the assistance of the City and the USFWS and CDFG. A critical factor in the success of the biological

monitoring program will be coordination of monitoring efforts to ensure spatial and temporal consistency in data collection and analysis, and to allow compilation of data from different sources into comprehensive monitoring reports every three years. A centralized data storage repository will be established at the PVPLC office, and will be structured in such a way that data can be easily incorporated into the statewide monitoring database currently being developed by CDFG and others. Data will be made accessible to biological monitors, researchers and reviewers (including the Wildlife Agencies), facilitating the coordination of monitoring programs with other NCCP subregions.

6.4.1.2 Biological Monitoring Objectives

Biological monitoring focuses on detecting changes in habitat quality and population trends in habitats and plant and animal species considered covered by the Subarea Plan. The successful maintenance of these resources will be measured against specific habitat acreages and/or species populations, as documented in the final Subarea Plan and implementing agreements. PVPLC, Rancho Palos Verdes and the Wildlife Agencies will have detailed maps providing locations of habitats and covered species populations included in the Reserve and/or targeted for conservation.

Specific biological monitoring objectives include the following:

- Document the protection of habitats and covered species in the annual Habitat Tracking Report and Covered Species Report as specified in this Subarea Plan and implementing agreement. This will be accomplished by tracking permanent habitat losses and take of covered species.
- Document changes in the presence of conserved populations of covered species. This will be accomplished through monitoring covered species within conserved habitat.
- Describe new biological data collected, such as new species sightings, information on wildlife movements and frequency of road-killed wildlife, as such information is available. Although not the focus of the monitoring program, collection of new biological data will occur during covered species monitoring. This information will be disseminated through the annual reporting program.
- Evaluate effects of land-use changes in and adjacent to the Reserve. Evaluations will occur on both a landscape level (tracking permanent habitat losses) and a local level (covered species population monitoring). Results of this evaluation will be presented in periodic reports and correcting actions implemented through the remediation and adaptive management program.
- Evaluate management activities and enforcement difficulties. An assessment of the effectiveness of specific management and enforcement activities will occur through the habitat and covered species-monitoring component of this program. It should be noted that ongoing efforts of the habitat manager would also assess these activities. Management and enforcement issues will be discussed in the reporting program, along with remediation or adaptive management strategies, as necessary.
- Evaluate funding needs and the ability to accomplish resource management goals. An assessment of funding needs and management goals will be provided every three years in the Comprehensive Management and Monitoring Report. Accomplishment of management goals will be measured against specific habitat and species conservation targets set forth in this Subarea Plan and implementing agreements.

Because of budgetary limitations, the highest priority monitoring tasks will be those 1) that provide direct evidence of human-induced changes in key biological resources and 2) for which corrective or remedial management actions are possible. Refer to Section 6.5 for remediation and adaptive management in cases where negative or declining trends are identified.

6.4.1.3 *Limitations of Monitoring Program*

The intensity and scale of any monitoring program is ultimately limited by the priorities and resources (funding and staff) made available and considered sufficient to accomplish the stated goals of the program. Because the proposed Reserve is small in scale in comparison to those being designed in other NCCP subregions, monitoring of covered species and qualitative assessments of habitat quality throughout the entire Reserve (rather than a sampling design that monitors representative sites and focal species within the Reserve) was deemed a practical approach to follow. Limitations of the proposed monitoring program include the following:

- Focal species monitored are assumed to act as indicators of Reserve function and as surrogates for other species not monitored.
- The ability to detect adverse human-caused changes or downward trends in population size may require time-series data of relatively long duration.
- Qualitative measures of habitat characterization are less precise/accurate than detailed (and time-consuming) quantitative measures.

6.4.2 *Restoration Site Monitoring Program*

6.4.2.1 *Site Monitoring*

Monitor the restoration work underway in the Reserve. Each site will be monitored for seven years, with reports prepared in years 1 through 3, 5, and 7. Monitoring should document restoration progress and provide direction and maintenance recommendations. Monitoring will include both horticultural and botanical components.

- Conduct horticultural monitoring to determine plant composition, plant health, performance of maintenance personnel, and recommended maintenance activities.
- Conduct botanical monitoring to quantitatively measure the progress of the restoration effort by measuring plant cover, plant composition, and weed cover. Botanical monitoring should follow the California Native Plant Society field sampling protocol (CNPS 1995).
- Take photographs of the restoration site viewing the site from different locations. Photographs should be taken at the same locations each year.

6.4.2.2 *Success Criteria*

Measure success of site-specific restoration programs using the following criteria:

- Soil at the site is stable and shows no significant erosion.

- Non-native plant cover is less than 10 percent with less than 10 percent cover of invasive perennial species.
- Native plant cover after three years in the CSS community should be greater than 40 percent with at least 30 percent cover from perennial species.
- Native plant cover after three years in the cactus scrub community should be greater than 30 percent with at least 20 percent cover from perennial species and 5 percent cover from cactus species.
- Native plant cover after three years in PV blue butterfly habitat should be greater than 30 percent, but not more than 60 percent. Bare ground should comprise at least 40 percent cover. Perennial species should be maintained at between 10 and 20 percent cover. Ocean locoweed (*Astragalus trichopodus* var. *lonchus*) or deerweed (*Lotus scoparius*) should constitute at least 10 percent cover. Some replacement of ocean locoweed by deerweed is acceptable, particularly in the northern portions of the Reserve.

6.4.3 Covered Species Monitoring

Preservation of rare plant and animal populations in protected areas is the initial step in achieving long-term conservation. Monitoring efforts are needed to ensure that human-related activities do not present immediate threats to conserved populations nor threaten the ability of a population to persist over time. The covered species monitoring program will identify (1) short-term threats to species persistence; and (2) longer-term trends that may suggest declining populations. In either case, active management may be required. The covered species monitoring effort will achieve Subarea Plan objectives of documenting the protection of covered species and changes in conserved populations of covered species, collecting new biological data, evaluating the impacts of land uses in and adjacent to the Reserve, and evaluating management activities and enforcement difficulties in the Reserve.

6.4.4 Habitat Tracking and Reporting

The annual accounting of the acreage, type, and location of habitat and species conserved, restored, and destroyed by permitted land uses and other activities will be the responsibility of the City and PVPLC. Records will be maintained in ledger and GIS format using the HabiTrak application (or similar methodology) which is currently being used in other NCCP subregions. This accounting process will be used to ensure that habitat conservation proceeds in rough proportion with habitat losses to development. This information will be provided by the City to the PVPLC, which will submit it along with other yearly reports to the Wildlife Agencies. The information will contribute to the annual public report demonstrating compliance with the terms and conditions of this Subarea Plan Implementing Agreement, and take authorization. Annual public workshops will also be held jointly by the City and PVPLC within 30 days of the anniversary of the approval of the Implementing Agreement to inform interested citizens on the progress of the implementation of the Master Plan, and the Reserve assembly, restoration, and management.

The loss of habitat will be accounted for when the project accrues the benefits of the take authorization. For conserved lands, the conservation of habitat and species locations will be accounted for when habitat is permanently conserved (e.g., date of recordation of title transfer, recordation of a conservation

easement, or execution/recordation of any other instrument that confers third-party beneficiary status to the project/property). The accounting information for conserved acres also will identify the protection mechanism, owner and agency or person responsible for conservation and management, and other related information.

6.4.5 Reporting Program

The reporting program will be the primary vehicle for (1) providing monitoring results and (2) identifying habitats or species that require specific management activities. A comprehensive monitoring report will be prepared every three years and will include both a synthesis of all data collected in the preceding three years and an analysis of overall trends in biological resources. Where monitoring indicates that biological resources are imminently threatened and in need of immediate attention, interim letter reports may be used to document problems and notify the appropriate personnel in a more timely fashion. All monitoring reports will be reviewed by the City, USFWS and CDFG. The reporting efforts will achieve Subarea Plan objectives of describing new biological data, providing results of impact evaluations, evaluating management activities and enforcement difficulties, and evaluating funding needs and the ability to accomplish resource management goals. Specifically, the 3-year comprehensive monitoring report will:

- Summarize results of monitoring efforts.
- Identify management needs and provide specific management recommendations for the coming three-year period.
- Evaluate monitoring priorities for the coming three-year period and detail any proposed shifts in monitoring priorities.
- Evaluate funding needs for the coming three-year monitoring period.

Reporting

All biological monitoring data will be quantitatively analyzed and presented in Covered Species Monitoring Report every year, with a comprehensive report submitted every three years, along with recommendations (including remedial measures, as necessary) for the next year's program. In addition to the report, all biological monitoring data will be made available digitally to the Wildlife Agencies for incorporation into the statewide monitoring database currently being developed by CDFG and others.

6.5 REMEDIATION AND ADAPTIVE MANAGEMENT

The comprehensive Management and Monitoring Report issued every three years will provide specific management recommendations to reverse declining trends in habitat or species' populations. Although it is difficult to anticipate the types of remediation that will be required before monitoring, potential actions may include the following:

- Fencing, signage, or redirecting trails to protect habitat or species populations from trampling or other adverse, direct impacts.

- Removal of invasive exotic plant species to protect native habitats, plant populations, and wildlife values.
- Removal or control of nonnative animal species (e.g., cowbirds, feral cats) to protect native animal populations.
- Erosion-control measures to protect key habitats or populations of covered species.
- Habitat enhancement to provide pollinator habitat, breeding areas for covered wildlife species, or structural diversity for covered wildlife species.
- Habitat restoration to reverse the effects of habitat disturbance and/or improve habitat quality for covered species where natural regeneration processes are expected to be unacceptably slow or delayed.
- Vegetation management techniques (e.g., mechanized methods of fuel reduction) to revitalize senescent stands of habitat or promote germination of fire-adapted covered plant species (note: prescribed burns likely will be prohibited within the Reserve).
- Plant population enhancements where conserved population numbers become so low, because of human- or environmentally induced factors, as to threaten the continued viability of the population, and where suitable habitat and other factors necessary for survival still exist.
- Plant population reintroductions in areas where species populations have been extirpated.

Adaptive management may include re-prioritizing monitoring efforts, as indicated by monitoring results and the resultant degree of management required for a given resource. For example, if a specific population proves stable over a period (e.g., 10 to 20 years), the frequency of monitoring may be reduced, particularly if a species' habitat and physical site characteristics remain unchanged and another species or populations requires more intensive monitoring because of declining trends. The remediation and adaptive management program will achieve the objectives of providing correcting actions where 1) resources are threatened by land uses in and adjacent to the Reserve, 2) current management activities are not adequate or effective, or 3) enforcement difficulties are identified.

6.6 COVERED SPECIES REINTRODUCTION

This section deals with the reintroduction of covered species, rather than reintroduction of a suite of more common species that comprise a specific community or of local species of concern. In this context, reintroduction refers to putting the species back into a known historical site or habitat within its historic range. Reintroduction is generally used to enhance the overall species population viability.

The following concerns should be addressed before initiating a reintroduction effort: 1) does the reintroduction effort benefit the species or population; 2) does the reintroduction site afford long-term stability; 3) are there higher competing values (e.g., economic or land-use issues that could threaten the long-term success of the effort); and 4) does the reintroduction effort provide the opportunity for natural evolutionary processes to continue (Morse 1993, 1996). Reintroduction of any federally or State listed threatened or endangered species will be done in coordination with the Wildlife Agencies.

6.6.1 Management Recommendations

The decision to reintroduce a species depends on numerous species- and site-specific factors, and any reintroduction effort will require detailed planning and monitoring, as well as available funding for planning and implementation. Current information on target species in Rancho Palos Verdes may be insufficient to determine whether reintroduction efforts are warranted. Guidelines on determining the appropriateness of reintroduction, as well as reintroduction methodologies, are provided below in case covered species monitoring (Section 6.4.1) indicates that such efforts are warranted.

Reintroduction efforts are appropriate if the species or proposed reintroduction site displays all or most of the following characteristics:

- High priority species (e.g., listed as Federal- or State-endangered).
- Such release will further the conservation of the species.
- Species biology is known or is being researched (some research may be conducted as part of the reintroduction effort).
- The site is within the historic range of the species.
- The site is ecologically appropriate.
- Suitable donor populations/propagule sources exist.
- The site is in the Reserve and threats to its establishment and long-term viability have been minimized.

Rancho Palos Verdes is within the historic range of all target species. Monitoring of selected target species is expected to determine population trends that will indicate whether extant populations are stable or declining. If declining trends are observed and reintroduction is determined appropriate, potential reintroduction sites will be assessed for suitability in terms of ecological conditions and site protection status.

- Reintroduction may not be feasible for all species under consideration, based on biological, physical, logistical, or evolutionary factors. Although a general assessment of these factors is presented below, a more complete assessment should be made before committing resources to a reintroduction effort (Fiedler 1993; Fiedler and Laven 1996). Determine the type of rarity (e.g., is the species a local endemic, relict, new species or hybrid, or rare because of loss of habitat from development).
 - Extant populations of aphanisma and South Coast saltscall occur primarily on bluffs where they may be subjected to limited trampling but are otherwise relatively protected from impacts associated with development. It is unknown whether population numbers documented to date for these species reflect inherently small population sizes, population fluctuations because of climatic variability, or declining populations because of direct or indirect human-induced impacts. If monitoring indicates continued declines in population size that cannot be correlated with climatic variability and that do not respond positively to protective measures recommended elsewhere in this Subarea Plan, reintroduction may be appropriate for these species.

- Bright green dudleya also occurs primarily on bluffs and, in some locations, is subject to similar impacts as aphanisma and South Coast saltscall. The dudleya, however, occurs in higher numbers than either of the other two species. Reintroduction would likely be appropriate for bright green dudleya only if monitoring indicates declining population numbers that do not respond positively to protective measures recommended elsewhere in this document.
- There is some question as to whether the Santa Catalina Island desert-thorn plants on Rancho Palos Verdes are wild plants or introduced cultivars. If determined to be wild plants, they represent one of the few (if not only) extant stands of this species in existence, and would likely be a candidate for reintroduction based on rarity. If determined to be cultivars, reintroduction would not be appropriate.
- There is a small population of Catalina crossosoma mapped in Rancho Palos Verdes that may represent the only mainland occurrences of this species. These individuals occur in relatively intact CSS. Reintroduction would probably not be warranted, particularly if extant population were adequately protected. Expansion of the existing population to increase long-term viability may be appropriate.
- The Palos Verdes Blue Butterfly appears to meet most of the above criteria (Lipman et al. 1999). Once sufficient butterfly habitat is restored, a reintroduction program should be attempted by the Wildlife Agencies.
- Evaluate biological, physical, logistical, and evolutionary factors. Key criteria include existing site conditions; presence or potential for appropriate pollinators and seed dispersal agents; possible genetic contaminants (hybrids or cultivars); soils; topography; slope; aspect; elevation; drainage; hydrologic regime; light environment; site protection status and degree of protection; access for monitoring and research; site location [e.g., known versus potential habitat]; and evolutionary potential.
- As funding permits, conduct studies to determine the feasibility of reintroduction, as necessary (e.g., propagation studies, propagule viability studies).

6.6.2 Use an Experimental Approach

Any attempted reintroductions should be treated as experimental (White 1993, 1996; Guerrant 1993, 1996; Pavlik 1993b, 1996). Following this approach, it should be recognized that the reintroduction may be successful because of the knowledge obtained during the process, even if not all goals and objectives are met. Any reintroduction program should institute an experimental design to test propagation methodologies, measure ecological or other life history parameters, and validate appropriate establishment and management techniques. The design and data collection should allow for appropriate quantitative analyses of results with spatially appropriate replication of plots.

6.6.3 Develop a Detailed Reintroduction Plan

The goal of any reintroduction effort shall be to establish self-sustaining population(s) of the species of concern. Species-specific reintroduction plans shall:

- Specify design criteria, including a scientifically valid experimental design.
- Indicate the appropriate time of year for reintroduction, based on species phenology.
- Indicate reintroduction methods, including any specialized equipment that may be needed.
- Specify type and source of source material, and provide a schedule for procuring source materials in a timely fashion (see below).
- Outline preliminary evaluation criteria (see below).
- Specify the process for implementing remedial measures.

The plan shall also specify project management and implementation responsibilities. It is assumed that the Reserve manager shall prepare or oversee development of the reintroduction plan, and the City and PVPLC shall be responsible for implementation of the plan provided additional funding is available.

1. Develop formal construction documents (as needed) that address the specific responsibilities and authorities of applicable personnel (the landowner, contractors, monitors, etc.). Specifications shall include all pertinent conditions, coordination requirements, schedules, warranty periods, protected areas, and restricted activities.
2. Specify propagule procurement procedures a year in advance of actual planting. Integrate genetic conservation considerations (Center for Plant Conservation 1991; Brown and Briggs 1991) into procurement specifications. Collect seeds, cuttings or other propagules from locally growing natural sources. For example, if a population is being destroyed by development, the entire population may be collected for reintroduction purposes. Conversely, if propagules are to be collected from an extant conserved population with greater than 400 individuals, a maximum of 5 percent of the population should be sampled in a given year.
3. Annual plants (e.g., aphanisma, South Coast saltscale) should be reintroduced only through seed, whereas corm-forming species (e.g., bright green dudleya) may be additionally (or alternatively) reintroduced through installation of plants grown from seed or cuttings under nursery conditions. Shrubs (e.g., Santa Catalina Island desert-thorn, Catalina crossosoma) may be additionally (or alternatively) reintroduced through cuttings or installation of plants grown from seed under nursery conditions. Where seed availability is limited and alternative methods of reintroduction are unavailable, a seed increase program may be warranted to ensure that enough seed is available for the reintroduction to have a reasonable chance of success. In such cases, the potential genetic consequences of artificial propagation must be weighed against the threat of extinction or local extirpation.
4. Delineate site protection measures both during installation and afterward during the establishment period. Protection may include the use of fences, flagging, signs, patrols, and other barriers. Site protection may require management of offsite resources and contaminants, drainage, exotic plant species, vandalism, and trash.
5. Establish maintenance standards to ensure reintroduction success. Intensive maintenance at least once a month during the first two years after planting is often required and may include weed control, debris removal, reseeding, pest control, and site protection.

6.6.4 Include Reintroduction Sites in a Population Monitoring Program

- Monitor reintroduction sites. Monitoring should include both biological and horticultural components. Biological monitoring will require collection of field data to assess whether project goals are being met. At a minimum, biological monitoring should consist of direct measures of population size, percent cover, vigor, and yearly fluctuations in these variables, particularly as they relate to climatic conditions. Other potential factors to be assessed include natural colonization and increases or decreases in species distribution, reproductive success, habitat quality, herbivory, survivorship, and soil moisture content, among others. Monitoring should be conducted yearly, as needed, and will occur in spring or summer for most species.
- In accordance with guidelines issued by the California Botanical Society (1998), reintroduction-monitoring efforts should be conducted for at least seven years. Horticultural monitoring will consist primarily of weed control and site protection. It may also include recommendations for supplemental fertilization, irrigation, and pruning, where appropriate. Weed control should focus largely on removal of exotic plants or noxious weeds and/or control of areas in which the weed cover is so high as to inhibit germination of the target species. Site protection includes implementing measures to ensure that the reintroduction site is undisturbed by mechanical, vehicular, or other human-related impacts. In some cases, temporary or permanent fencing may be required to protect the reintroduction area.
- Establish offsite-monitoring procedures, to the degree feasible. The offsite populations should be close enough to the reintroduction site that they are subject to the same climatic conditions as those found onsite. Monitoring offsite populations allows consideration of factors (e.g., temperature, precipitation, and disease) that contribute to fluctuations in population size, particularly for annual and herbaceous perennial plants. These data will allow a realistic assessment of success criteria yearly.

6.6.5 Establish Success Criteria

Specify performance standards or success criteria by which the reintroduction will be judged. Because few sensitive species have been grown commercially or received widespread (if any) use in reintroduction programs, it may not be practical to pre-establish performance standards or success criteria. Therefore, it is recommended that an assessment of the success of each species be determined yearly, using available propagation data, climatic data, and monitoring data from offsite populations (i.e., reference sites). Design biological monitoring of the reintroduction site to supply data to evaluate these standards. Develop remedial measures in advance of project implementation to provide a means of response should performance standards not be met.

6.6.6 Reporting

All biological monitoring data will be quantitatively analyzed and presented in a report every year, with a comprehensive report submitted every three years, along with recommendations (including remedial measures, as necessary) for the next year's program.

6.7 RESEARCH RECOMMENDATIONS

The following is a summary of recommendations for future studies that would advance our knowledge and improve our ability to manage covered species and their habitats. Some of these studies may be conducted as part of future Reserve management and monitoring efforts, whereas others may be the focus of longer-term university or agency research projects. These research recommendations are not included in the monitoring plan budget. The research recommendations provided below can be grouped into several generalized categories, including basic inventories, habitat and life history studies, population biology and genetic studies, habitat restoration and/or population reestablishment studies, and management studies. These recommendations are consistent with the research agenda recommended by the Scientific Review Panel for the State's NCCP program. Additional recommendations may be generated based on results of the monitoring program and/or findings of the studies recommended below.

6.7.1 Inventories

Conduct surveys to better determine the distribution and/or extent of certain covered species (e.g., southern tarplant, Peirson's morning-glory, and Lyon's pentachaeta).

6.7.2 Habitat and Life History Studies

Determine the ecological requirements and life histories of covered plant species. This information would complement the long-term status monitoring of key covered plant species, and would provide the practical information necessary to enhance or establish populations. Specific studies might focus on the following:

- Microhabitat requirements.
- Reproductive, pollination, and dispersal strategies.
- Seed and pollen viability studies.
- Germination requirements.
- Seedbank ecology.
- Seedling mortality studies.

6.7.3 Population Biology and Genetic Studies

- On a species-specific basis, determine 1) the minimum size for viable self-sustaining plant populations, 2) the effective size (generally larger than the minimum size) for viable self-sustaining plant populations, and 3) the minimum and optimum densities of stable plant populations (Messick 1986).
- Monitor a representative sample of individuals of focal target animal species (California gnatcatcher, coastal cactus wren, Palos Verdes blue butterfly) to refine the variance estimate in demographic parameters and dispersal capability.

- Conduct genetic studies of populations of coastal cactus wren and California gnatcatcher to assess relative levels of genetic variation and possible inbreeding depression. Determine the need for supplementation of genetic stock with individuals from coastal Orange County.
- Conduct inter- and intra-population genetic analyses of representative populations of covered plant species.

6.7.4 Habitat Restoration and/or Population Enhancement/Reintroduction Studies

- Using results of studies above, conduct and monitor small-scale habitat restoration studies within the Reserve.
- Conduct reintroduction studies for the Palos Verdes blue butterfly.
- Using results of the studies above and species' distribution and risk status, identify candidates for population enhancement or reintroduction studies. Conduct and monitor transplantation or reintroduction studies.
- Establish and maintain seedbanks in conjunction with recognized institutions for certain covered plant species as a possible source of research and enhancement/reintroduction material.

6.7.5 Management Studies

Conduct and monitor small-scale experiments that use alternative methods (e.g., mechanical chopping) to simulate the effects of burns on species or habitats. These experiments would be most appropriate for species that germinate in response to increased light (or decreased canopy cover), rather than species that germinate in response to heat or specific chemicals in the charate.

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SECTION 8 DOCUMENT PREPARERS***City of Rancho Palos Verdes***

Joel Rojas, Planning Director

Palos Verdes Peninsula Land Conservancy

Barbara Dye, Executive Director

URS Corporation

Patrick J. Mock, Ph.D., Project Manager, Senior Biologist

Liza Boquiren, Staff Analyst

Beth Famigletti, Staff Analyst

Diane Douglas, Ph.D., Technical Editor

Danielle Stearns, CEQA/NEPA Task Leader

David Acuff, Consultant Planner

Onaka Planning & Economics

Jun Onaka, Ph.D., Financial Planning

Technology Associates International Corporation

Debra Turner, M.S., GIS Task Leader

California Department of Fish and Game

Bill Tippetts, Supervisor, South Coast Region

Warren Wong, Biologist

U.S. Fish and Wildlife Service

Kerri Davis, Biologist

Ken Cory, Assistant Field Supervisor

Jim Bartel, Field Supervisor