



## **MEMORANDUM**

**TO:** CHAIRMAN & MEMBERS OF THE PLANNING COMMISSION

**FROM:** JOEL ROJAS, DIRECTOR OF PLANNING, BUILDING & CODE ENFORCEMENT

**DATE:** JANUARY 26, 2010

**SUBJECT:** GENERAL PLAN UPDATE - REVIEW OF THE "DRAFT" CONSERVATION AND OPEN SPACE ELEMENT

**Staff Coordinators:**

**Gregory Pfost, AICP, Deputy Planning Director**  
**Leza Mikhail, Associate Planner**

### **RECOMMENDATION**

Receive a presentation by Staff on the "Draft" Conservation and Open Space Element, and provide general direction to Staff and the Planning Commission Sub-committee (Lewis, Knight and Tetreault) on proposed revisions.

### **BACKGROUND**

According to State Law, two of the seven mandatory Elements of a City's General Plan shall be the Conservation Element and the Open Space Element. The Conservation Element provides direction regarding the conservation, development and utilization of natural resources. Its requirements overlap those of the Open Space, Land Use, Safety and Circulation Elements. The Conservation Element is distinguished by being primarily oriented toward natural resources. Relevant to Rancho Palos Verdes, the following issues should be addressed with regard to the conservation, development and utilization of natural resources:

- Water and its hydraulic force
- Reclamation of Land and Waters
- Prevention and control of pollution of waters
- Prevention, control, and correction of erosion of soils, beaches and shores
- Soils, including landslide issues

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- Ocean Resources
- Biological Diversity
- Minerals
- Other Natural Resources

The Open Space Element guides the comprehensive and long-range preservation and conservation of open space land. Similar to the Conservation Element, the Open Space Element also overlaps other Elements, such as the Conservation, Land Use, Safety and Circulation Elements. Relevant to Rancho Palos Verdes, the following issues should be addressed:

- Open Space for the preservation of natural resources including areas required for the preservation of plant and animal life, and fish and marine resources
- Open Space for outdoor recreation, including that of a scenic, historical and cultural value
- Open Space for public health and safety, such as landslide areas

### **DISCUSSION**

The Planning Commission has embarked on its review of the proposed update to the City’s General Plan. In keeping with the review schedule approved by the Commission on November 10<sup>th</sup>, the attached “Draft” Conservation and Open Space Element is hereby being presented for the first time to the Planning Commission. This Element is one of the most important Elements for the City given its abundance of natural resources, open spaces, and policy direction from the Council regarding the preservation and conservation of those resources. It should be noted that given that the Conservation and Open Space Elements address similar and related topics, as is typical in most jurisdictions, both Elements have been combined into one comprehensive Element.

In preparing this “Draft”, Staff attempted to retain the general direction and format of the existing General Plan, with the exception of removing or adding text in an attempt to update the Element to today’s conditions. Staff has prepared a Table of Contents as the first page of the Element to help guide the reader through the major topic areas within the Element. As can be seen in the Table of Contents, similar to the existing General Plan, the Element first focuses on describing the basic ecological units within the City. It then categorizes these basic units into areas of consideration of public health and safety as well as preservation of natural resources. From this, Resource Management Districts are then created and mapped to show sensitive areas within the City. As noted in the “Draft”, the City’s NCCP is discussed in some detail as that is the City’s primary habitat preservation document. The Element also addresses cultural resources, and an inventory of open space areas. The Goals and Policies as adopted by the Steering Committee are incorporated into the document.

The format of the “Draft” Element is rudimentary in that the “Draft” simply includes text with a

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few tables. Staff felt that this format would provide the best working document for Staff and the Planning Commission Sub-committee to work with. The final document will be a much more polished document that will incorporate photographs and exhibits along with updated maps.

### **ADDITIONAL INFORMATION**

#### **General Plan Update Steering Committee’s Final Recommendations**

As mentioned in earlier meetings, during the General Plan update process, each Element presented to the Planning Commission will include the former General Plan Update Steering Committee’s recommendations on Goals and Policies in normal text. During the review process, based upon information generated through text revisions and special studies, the Planning Commission and/or Staff may identify necessary changes to the recommended Steering Committee Goals and Policies, and/or may identify new Goals and Policies that should be added to the General Plan. In such cases, any changes to the Goals and Policies as recommended by the Steering Committee will be shown in ~~striketrough~~ text for text removed or **bold underline** text for text added, when the Planning Commission recommended Elements are presented to the Council for final adoption. This process will allow the Council to see the Goals and Policies as originally recommended by the General Plan Update Steering Committee, with any proposed modifications as recommended by the Planning Commission.

#### **Public Notice**

A 1/8 page public hearing notice for the Conservation and Open Space Element was posted in the *Peninsula News*. Additionally, a list serve message was delivered to all those signed up for the General Plan Update list serve. At the time this Staff Report was prepared, Staff had not received any comments on this Element.

### **CONCLUSION**

At the January 26<sup>th</sup> meeting, Staff will first provide a brief presentation of the Element, and then seek the Commission’s general direction on any recommended formatting or contextual changes for the Planning Commission Sub-committee (Lewis, Knight and Tetreault) and Staff to consider over the next month. Then, during the remainder of January and into the first couple of weeks of February, the Sub-committee and Staff will work together in creating a final “Draft” for the Commission’s consideration at their February 23<sup>rd</sup> meeting.

### **ATTACHMENTS**

- “Draft” Conservation and Open Space Element

# 1 Conservation & Open Space Element

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## **COS.1 Introduction and Goals**

The Conservation and Open Space Element of the Rancho Palos Verdes General Plan sets forth goals, policies and implementation strategies to encourage the conservation and necessary management of the community's natural and open-space resources, while ensuring that existing and future parks and recreational opportunities are developed and maintained to serve the public.

Open Space is one of the prominent features that defines the character of Rancho Palos Verdes and plays a large role in the quality of life that residents seek to live in and maintain, and non-residents seek to visit. Conserving open space provides opportunities to the public for outdoor recreation, view-shed protection, conservation of natural resources that provide a healthy ecosystem for vegetation and wildlife, flood and erosion control, protection of the public health and safety, buffering between incompatible land uses and the enhancement of roads and public spaces.

The majority of Rancho Palos Verdes is developed with residential land uses; however a significant amount of land is dedicated to open space uses, including parks, golf courses, trails and a dedicated preserves. The City seeks to create a system that integrates parks, trails, natural habitats and cultural resources into a series of networks for both residents and visitors to utilize.

To set the context for this Element, its Goals are as follows;

1. *It is the goal of the City of Rancho Palos Verdes to conserve, protect, and enhance its natural resources, beauty, and open space for the benefit and enjoyment of its residents and the residents of the entire region. Future development shall recognize the sensitivity of the natural environmental and be accomplished in such a manner as to maximize the protection of it.*
2. *The City shall protect and preserve all significant archaeological, paleontological and historical resources within the City.*

## **COS.2 Authorization and Scope**

The State of California requires both an Open Space Element (Government Code Section 65302(c)) and a Conservation Element (Government Code Section 65302(d)) to be included in every local government general plan. As many of the City's goals and policies, and the State's requirements, are related, these two elements have been joined into one single element.



The Conservation Element is required to contain goals and policies that further the protection and maintenance of natural and cultural resources such as water, soils, vegetation and wildlife, minerals, air quality and archaeological and historical sites, thereby preventing their wasteful exploitation, degradation and deconstruction. Similarly, the Open Space Element is required to contain goals and policies concerned with managing all open space areas including undeveloped lands and outdoor recreation areas. Specifically, the Open Space Element includes open spaces within the City that should be preserved for (1) the preservation of natural resources, (2) the managed production of resources, (3) recreation, and (4) public health and safety.

### **COS.3 Organization of the Element**

The basis for this element has been the environmental capabilities inherent in the land of Rancho Palos Verdes. Land “capability” is fundamentally an evaluation of the basic ecological units dealing with the natural factors of land, climate, hydrology, biotic resources, geotechnical factors, and the systematic relationships which must exist among them. The Element discusses each of these basic ecological units as they apply to Rancho Palos Verdes individually, as detailed factors, then in appropriate classification combinations. Each of these combinations has then been classified into two categories: 1) preservation of natural resources and open space, and 2) public health and safety. The two categories have then been combined to develop the Conservation and Open Space Element which becomes a guide for the natural environmental resource management policies.

The Element then focuses upon Cultural Resources (paleontological, historical and archeological resources) and the conservation of them. Finally, the Element includes an inventory of existing Open Spaces within the City that are so beneficial for the City’s residents and the residents of the entire region.

### **COS.4 Basic Ecological Units**

This section discusses the basic ecological units that deal with natural factors affecting the City. It is these factors and the relationships amongst them that serve as the basis in which the environmental resource management policies are developed. For example, the discussion below on “Climate” describes the components of weather, which affects the City in terms of temperatures, winds, precipitation and air quality. The “Biotic Resources” portion describes the significant ecologic habitats associated with the land-based natural vegetation communities, as well as ocean related resources along the immediate shoreline. The section on

“Geotechnical Factors” includes topographic conditions, geologic hazards, and mineral resources. Hydrology covers the natural and man-made water drainage patterns within the City and the factors affecting them, as well as their influence on the other natural environment factors.

## **COS.4.1 Climate**

Rancho Palos Verdes enjoys a climate that is considered as being one of the most ideal climates of the world. Its average maximum and minimum temperatures range approximately between 67° F. and 50° F., and annual precipitation is approximately 11” to 15”.

Precipitation intensity is variable during storms. Records of maximum precipitation rates are not available specifically for the City, however, data from the Botanic Garden area of the Peninsula indicates that .3 of an inch has fallen within a 5 minutes period and 1.1” in a one hour period (Gales). The latter occurring during one of the heavy 1969 storms.

The sea breeze, which is the predominant wind, is a primary factor in creating this climate and typically flows from the west-southwest in a day-night cycle with speeds generally ranging from 5 to 15 mph. The sea breeze maintains the cool temperatures and clean air circulation and generally prevents warmer inland temperatures and air pollution from permeating into the peninsula, except under certain seasonal conditions such as the offshore Santa Ana winds.

The climate on the peninsula has been classified by other studies into five (5) micro zones (Gales). Of the five, there are three (the Coastal Zone, Upper West Face of the Hill, and Middle Highlands/Eastern Upper Slopes) that apply to the City of Rancho Palos Verdes. (See Figure 3).

**Zone I – Coastal.** The coastal zone extends along the coastline and inland to the 500-700 ft. elevation line. Temperatures are generally mild and frost is a rare occurrence. The area around Pt. Vicente tends to be slightly windier, cooler, and receives more fog and low cloudiness than other areas within this zone. The remainder of the coast is more sheltered than the Point, accounting for this difference. In general, this Coastal Zone tends to have more fog and low clouds, cooler days, but warmer night temperatures than other areas of the peninsula. Relative humidity is higher than in other zones due to proximity to the ocean. Mean monthly temperatures were calculated from average monthly temperatures recorded at various stations located within each zone.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
High	59	62.4	62.7	63.9	65.3	68.3	72.4	74.7	72.9	69.4	65.7	62.1
Low	49	51	51.4	51.8	54.6	58	61.3	63.3	60.6	57.3	54.4	51

**Zone 2 – Upper West Face of the Hill.** This zone is above the 500-700 ft. elevation and extends to the top of the peninsula heights. The climate is similar to that of the coastal zone, but nighttime temperatures are generally cooler, and there are more occurrences of very warm days than in the coastal zone. Relative humidity is fairly high, but fluctuates more than in the Coastal Zone. The afternoon sea breeze tends to keep temperatures moderate and can be brisk down through the valleys.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
High	56	61.5	61.5	64.5	65	67.5	72.5	75.5	72	69	65	59.5
Low	44	48	52.5	49	52	53	59	60.5	58	54.5	50	51

**Zone 3 – Middle Highlands/Eastern Upper Slopes.** This zone tends to have greater climatic variation than the previous zones. Temperatures are slightly warmer than in Zone 2 and warm days can be very warm with cool days as cool or cooler than in any other zone. Temperatures have about a 20° range.

This mild climate of Rancho Palos Verdes with soil and plant nutrients have created a setting enabling a wide variety of both native and man-introduced plant species to

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
High	59.9	64	64.9	69.7	71.4	76.4	83.3	84.1	79.6	73.9	66.3	59.1
Low	44.6	47.7	48	49.3	52	55.7	59.8	62.7	59.1	55.3	49.3	45

grow within the City. In order to flourish, many man-introduced species require a certain amount of supplementary water and care. Other species have adapted well and thrive with the natural conditions. At one time, agricultural use of large portions of the City was able to take advantage of this environmental quality but has given way to residential development also attracted to the mild climate and clean air.

**COS.4.2 Air Quality (Note – This Section will have more updates once the Consultant has completed the Air Quality Study)**

The City of Rancho Palos Verdes is located within Los Angeles County, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of South Coast Air Quality Management District (SCAQMD). The SCAQMD and the Southern California Association of Governments (SCAG) are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the local air basin. The primary concern of these agencies is controlling emissions,

primarily from stationary sources of air pollution. The AQMP serves as the blueprint to bring areas into compliance with federal and state clean air standards.

**Local Air Quality.** The SCAQMD, together with the Air Resources Board (ARB) maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the City of Rancho Palos Verdes is the North Long Beach Station. This station monitors all criteria pollutants. Between 2006 and 2008, the pollutant levels in the City of Rancho Palos Verdes are consistently below the relevant State and federal standards.

Air quality is not only affected by various emission sources, but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. Although the City of Rancho Palos Verdes air pollutant level is consistently below the State and federal standards, the combination of topography, low missing height, abundant sunshine, and emissions from the second largest urban area in the United States give the Basin as a whole, the worst air pollution problem in the nation.

## **COS.4.3 Topography**

The frequency and location of steep slopes have traditionally constrained urban development on the Palos Verdes Peninsula where they have contributed to difficulties in developing access, utility service, and site improvements. Within Rancho Palos Verdes, a large portion of the City's area consists of steeply sloping land. (Slope is usually expressed by a percentage figure equal to the number of feet of rise per 100 feet of horizontal distance). Land with average slopes of 10% or less are considered to be flat to rolling and are most easily developed and generally the first lands to be developed. This pattern of development is apparent in most areas of urban development. Lands of 10% to 25% topography are hilly but construction on this type of terrain is relatively common. Slopes between 25% and 35% become steep and costs of mass construction begin to increase substantially. Development within this area is often associated with extensive adverse environmental impact, problems of access, maintenance and appearance. Steeper slopes within this category are generally more suitable for custom house sites and more innovative design solutions. Slopes above 35% are considered as extreme, and development is not, under all but the most unusual and individual circumstances, economically feasible. Within the City, 40% to 50% of all land area would fall into the category of slopes of approximately 25% and above. (See Figure 5).

## **COS.4.4 Geologic Conditions & Geotechnical Factors**

**Geologic Conditions.** The Palos Verdes Peninsula bedrock is composed of a metamorphic core blanketed by sequences of younger sedimentary rock. The structure is complicated by smaller-scale folding and both the schist and



sedimentary rocks have been intruded by irregular masses of basaltic volcanic rocks. This entire block has been uplifted by movement on two sub-parallel bounding faults, the Palos Verdes fault on the northeast and the San Pedro fault offshore on the southwest. (See Figure 6) A series of thirteen staircase marine terrace has been developed surrounding the Palos Verdes Peninsula during late Pleistocene and Holocene geologic time (the last few hundred thousand years). The sandy marine terrace deposits and overlying deposits of landward origin now occupy some of these benches. The landscape in parts of this area has also been significantly modified by the movement of massive landslides during the time interval between the formation of the oldest terraces and the present.

The schist, known as the Catalina Schist, crops out only in a small area on the north slope of the Peninsula. Basaltic rocks are exposed in several areas and terrace deposits (while they underlie much greater areas than the two previously mentioned units) are present in only a small fraction of the total area and are relatively thin (a few tens of feet thick). By far the most widely exposed rocks and the most significant in terms of slope stability is the Miocene Monterey Formation.

The Monterey Formation is more than 2000 feet thick on the Palos Verdes Peninsula. It has been divided into three members on the basis of rock type: the Altamira Shale, the Valmonte Diatomite, and the Malaga Mudstone (from oldest to youngest). Altamira Shale consists largely of thin-bedded sedimentary rocks formed by the deposition of successive layers of clay, along with numerous layers of tuff (volcanic ash) that have been largely altered to weak clays.

The City of Rancho Palos Verdes is located in a seismically active area and near several of the active and potentially active faults in Southern California. Active and potentially active faults within Southern California are those capable of producing seismic shaking that may cause damage to structures. There are two faults present on the Peninsula: the Palos Verdes and Cabrillo Faults. The Palos Verdes fault is considered a source of significant earthquake hazard and the Cabrillo Fault is a potentially moderate earthquake hazard. However, since the city is 12.3 square miles in size, the intensity and type of shaking generated by earthquakes will remain relatively the same throughout the city. Therefore, the seismic factor will not be a major factor in determining land use. It is possible that renewed movement on some existing slides could be triggered by strong seismic shaking, but this would only occur if they were in a meta-stable condition before the earthquake.

**Geotechnical Factors/Landslides.** Rock type, the structure of the rock, the quantity of available water, and the topographical conditions are factors that influence landslides. Landslides have taken place on the Peninsula during a fault that resulted in surface displacement during the Holocene Epoch and the Pleistocene Epoch which had a history of movement approximately 11,000 and up to 1.6 million years

ago, respectively. The locations of these existing slides, some of which have horizontal dimensions of thousands of feet, are known from previous mapping (Vonder Linden and Jahns).

The Portuguese Bend system is the most studied and publicized landslide in the area, identified as a large complex that extends from the top of the ridge of the City to the ocean. The recently active portion of the Portuguese Bend System began in 1956 as a result of grading operations. There are portions of the landslide that have been in debate for many years and other landslides, such as the South Shores landslide system which have been at equilibrium for some time. However, human activities and erosion may change the existing conditions and lead to renewed failure to certain landslides that probably are quite stable and may be suitable for some types of development

As a consequence of these geologic conditions, existing and potential slope stability must be recognized as a prime consideration in determining land use within the City. Although some types of limited development may be possible within certain landslide areas, detailed geologic investigations are necessary to demonstrate the required degree of stability. Appropriate geologic investigations often precede certain developments in “non-landslide” area of the City, as new ground failure could well be triggered by man’s activities.

The following four categories of slope stability have been mapped, shown on Figure 7—Active Landslide, Old Landslide, Possible Landslide, and Non-Landslide areas. The four categories of slope stability have been developed from the landslide mapping developed by Envicom as a portion of the “Geotechnical and Public Safety Report for Cities of Rancho Palos Verdes, Rolling Hills Estates, and Rolling Hills.” Old Landslide Areas are presently in a metastable condition and could change to Active Landslides with minor changes in the natural or man-made environment, while other older landslide areas are in a stable condition and could be suitable for residential development (subject to detailed geologic investigations) and human habitation. The significance of the slope stability categories in terms of land use planning are described here (Interpretations by Earth Sciences Associates).

*Active landslides.* Areas now undergoing downslope movement; extremely unstable ground not suitable for residential development; possible use as passive recreational area, parks, area of geologic interest, etc., but unsuitable for the construction of any new permanent structures, unless the movement is stopped by some natural or man-induced forces.

*Old Landslide.* Areas determined through inspection and/or identified in the California Department of Conservation’s landslide-inventory maps that portray the location of prior failure. Landslide inventory maps show existing landslides



and reveal the extent of past movement, and thus the probable location of some future activity within those landslides. These landslides have experienced downslope movement in the past but no longer moving at the present time. Most of these areas would not be suitable for residential development without conclusive demonstration through detailed geologic studies, that they are stable enough to accommodate both the activities of site preparation and long term human habitation.

**Possible Landslide.** Areas suspected to be a landslide on the basis of topographic evidence. Some of these areas may prove to be stable areas that have not experienced sliding at all, or very ancient slide areas that are now fairly stable. Some of these areas may be suitable for residential development, but they would require detailed engineering geologic studies to show that they are stable enough for development and human occupancy.

**Non-landslide Areas.** Areas where no natural landslides have been identified. A wide range of existing and potential slope stability also exists within this category and new landslides could be triggered in some areas by human activities, such as excavation. Most of the areas, however, would not be subject to slope failures if development were carried out properly. Individual engineering geologic and soil engineering investigations should also be required for any proposed development anywhere within this area, but there is less change of slope stability problem than in areas of the other three categories.

### **COS.4.5 Sea Cliff Hazard Retreat**

The Palos Verdes Peninsula continues to exist as a peninsular formation because the rocks underlying it are harder than the materials underlying adjacent reaches of coastline, and hence are more resistant to erosion by wave action. Sea cliff retreat rates in the City of Rancho Palos Verdes are probably somewhat less than the average rate of the California coastline, which is on the order of magnitude of 6 inches per year. As is the case in most stretches of coastline, a significant increment of the retreat activity takes place during heavy storms when the waves pound at the base of the sea cliff and remove material, which eventually results in a failure of a portion of the cliff. The portion of the cliff that fails may be only a thin sliver a few feet thick, or may extend back from the cliff several tens of feet or more. Some of the large Rancho Palos Verdes landslides extending back from the cliff formations for thousands of feet may have originally been triggered by erosion at the base of the sea cliff in ancient times.

The City's original General Plan indicated that the California Coastal Zone Conservation Commission (Preliminary Coastal Plan) had proposed a sea cliff hazard zone consisting of the area from the base of the cliff, extending inland to a

point where a line formed by a 20-degree angle from the horizontal plane at the base of a cliff or bluff would extend out to the surface. However, subsequent to adoption of the initial General Plan, the City embarked upon the preparation of the City's Coastal Specific Plan (Local Coastal Program – LCP). The LCP was originally certified by the Coastal Commission with suggested modifications on January 22, 1980. The Commission effectively certified the resubmitted LCP on April 27, 1983, and the City assumed permit-issuing authority on August 1, 1983.

A Coastal Setback Line was established by the City in 1978 as part of the adoption of the Coastal Specific Plan, and is identified in the Coastal Specific Plan Land Use map. The purpose of the Coastal Setback Line is to identify areas along the bluff top that have geologic concerns. The location of the Coastal Setback Line along the City's entire coastline was determined as a result of a comprehensive geologic study of the City's coastal zone to address possible slope erosion and other geologic concerns, which is contained in a report titled "Geologic Factors Related to a Coastal Set-Back Zone for the City of Rancho Palos Verdes, California". This report was prepared by Earth Sciences Associates (ESA) in 1976, and is the basis for the Coastal Setback Line in the Coastal Specific Plan and in the City's Zoning Map.

The ESA Report identifies the following three significant geologic hazards within the City's coastal zone: 1) coastal erosion, 2) landsliding, and 3) erosion along intermittent stream channels. The combination of these geologic factors imposes significant restrictions on land-use patterns within the City's coastal zone. The geologic constraints are variable; some regions of the coastal zone are virtually free of geologic problems, while other areas are considered unsafe for practically any human activity. As a means of assessing the geologic constraints within the coastal zone for development purposes, the Report established a classification system based on the suitability for existing and anticipated land uses. The category system, which was incorporated into the Coastal Specific Plan, is used to determine land uses based on criteria that defines the types of structures compatible with the terrain, limits on excavation and grading, and ease and safety of access.

The five categories are briefly described as follows:

- **Category 1a:** Areas unsuited for any permanent structures and potentially hazardous for human passage.
- **Category 1b:** Areas unsuited for any permanent structure, but is generally safe for human passage.
- **Category 2:** Areas suitable for light, non-residential structures not requiring significant excavation or grading.
- **Category 3:** Areas in which geologic information is not sufficiently detailed to establish suitability for construction purposes.



- **Category 4:** Areas that appear to be suitable for permanent tract-type residential structures and supporting facilities in light of existing geologic information.

On the basis of the available geologic information, the Coastal Setback Zone was also established and included all land within Category 1a, Category 1b, Category 2 and Category 3.

Notwithstanding the location of the Coastal Setback Line, development within the City's Coastal Zone requires detailed engineering/geologic studies to demonstrate site stability and suitability of development.

### **COS.4.5 Mineral Resources**

When the value of land within Rancho Palos Verdes is considered in terms of alternative land uses, there are no mineral resources present within the community which would be economically feasible for extraction.

According to Woodring, the Palos Verdes Hills (two-thirds of which are Rancho Palos Verdes) have three distinguishable subsurface components, or stratigraphy. These components of geologic time are the epochs, upper and lower Miocene, which date back about 25,000,000 years, and the period Jurassic, which dates back 180,000,000 years. To give some reference to these dates, the Miocene epoch is when mammals like dogs, cats and horses began to acquire modern characteristics and man-like apes appeared. The Jurassic period is that time in geologic history when the Sierra Nevada Mountains uplifted and primitive birds appeared.

Stratigraphy in conjunction with the subsurface geology is significant when one is exploring for valuable resources such as oil and gas. For instance, the Torrance oil field, in which stratigraphy is also characterized by upper and lower Miocene, has a subsurface geology in the sedimentary rock class. Sedimentary rocks are porous and capable of holding deposits such as oil and/or gas within their structure. . For the most part, the subsurface geology of Rancho Palos Verdes consists of metamorphic rock with intruded igneous rock. These rock types are generally not known as sources for economic resources such as oil and/or gas

**Resources Extracted via Drilling.** The first oil well was drilled by the Newton Development Company adjacent to what is now the Terranea Resort Hotel site at Long Point. This well reached a depth of 4,500 feet. The stratigraphy of the well consisted of Miocene to 1560 feet, turning into volcanic and finally hitting schist as 3906 feet. Schist is any of a group of metamorphic rocks containing parallel layers of flaky minerals like mica. The significance of hitting schist is that the basement or

bottom of the well has been reached. Like igneous rock, metamorphic rock, which is formed by heat and pressure forces, is a hard rock not known to house oil or gas deposits.

In all, three exploratory wells were drilled in what is now Rancho Palos Verdes. The Lesco Oil Corporation well was drilled in June 1947 just south of 25th Street, and the McVicar well in the vicinity of what is now known as Trump National Golf Course was drilled in 1951. All of these wells were drilled along the coast, where the Miocene layer is deepest. According to the logs filed with the State Division of Oil and Gas, none of these wells showed any indication of oil or gas.

At the time these wells were drilled, there was no method developed for taking bottom hole temperatures. Therefore, the most useful tool for assessing the geothermal potential in Rancho Palos Verdes is nonexistent. However, in an interview with a representative of the State Division of Oil and Gas assigned to thermal research, it was stated that there was no indication of geothermal energy for electrical energy production on the peninsula. In supporting this opinion, it was pointed out that: (1) wells in this area have shown no indication of abnormal temperatures; (2) there are no signs of volcanic activity in the area; and (3) there are no significant hot springs in the area.

It was further pointed out that there was a significant difference between geothermal potential for office and home heating and geothermal potential for electrical energy production. The latter would require hot holes, those wells having temperatures of 212° and above. This kind of heat does not exist in the area at economical drilling depths. The former only requires temperatures above 150° F. This range of temperature is present in many wells in the area, specifically the Torrance oil fields.

**Minerals Extracted by Quarrying.** From 1948 to 1958, the land in Rancho Palos Verdes was quarried for basalt, diatomaceous earth, and Palos Verdes stone. The only valuable material known to exist in Rancho Palos Verdes which has not at one time or another been commercially extracted is the asphalt which Woodring says exists at the main branches of Agua Amarga Canyon.

Basalt is a light weight volcanic rock, which is used as a component in concrete, oil well cement, and locally as a dressing for secondary roads. The three recorded basalt quarries were just north of Forrestal Drive and just south of the Flying Triangle in Rolling Hills. These quarries were operated for nearly ten years, closing their operation in 1958. The operation was run by Livingston and Graham, Inc., a representative of which recently stated that these quarries produced only basalt and not the decomposed granite which appears on some early editions of the U.S. Geological Survey maps.



There is some evidence that some sort of mining operation may have occurred in the Via Colinita area of Rancho Palos Verdes, probably basalt. In the early 1970's, the County Building and Safety Dept. had reported problems with some settling of homes in the area, which may result from mining operations that took place. Unlike oil and gas wells, mining and quarrying operations did not have to file for permits with the State, making documented support of these suspicions difficult, if not impossible, to substantiate.

The Palos Verdes Hills housed the nation's third largest diatomaceous earth quarry operation. This quarry was operated by Grefco, a subsidiary of Great Lakes Carbon. This quarry site became the Palos Verdes Landfill, which subsequently closed by the 1980s. The site began to give out in 1953; the operation was moved to the Crestridge site in 1954, where it operated for almost a year. The Palos Verdes Landfill is now the site of the South Coast Botanic Garden in unincorporated County territory and Ernie Howlett Park in the City of Rolling Hills Estates.

In 1972, core samples were taken on the Filiorum property just north of Narcissa in upper Portuguese Bend. The core samples, taken for a development project that was being considered at the time, appeared to contain almost pure diatomaceous earth but were not verified. Although this area has never been commercially quarried, the high probability of a diatomaceous earth deposit in this area should be noted as a mineral resource within Rancho Palos Verdes.

Diatomaceous earth is the principal substance in many filtering operations. Primary users of diatomite are the brewing industry, sugar processors, and manufacturers of antibiotics. The material is also used as a filler in paper and plastics. In all, diatomaceous earth has over 200 uses.

The material which occurs most commonly on the Peninsula and is most generally known is Palos Verdes stone. This is a sedimentary rock which occurs throughout Rancho Palos Verdes and the Peninsula. The stone, which is used in both landscape architecture and as a decorative rock in home and office construction is found close to the surface in sporadic locations throughout the City. Whenever subdivisions were being developed that required grading, Palos Verdes Stone was often commercially exported from the construction site. Because of the sporadic nature and the shallow depth at which the stone occurs, it is not thought to be economically feasible to commercially mine Palos Verdes Stone.

Considering the rather low market value of the various mineral resources in Rancho Palos Verdes relative to the land's value as residential or commercial real estate, it is highly unlikely that landowners would wish to utilize the land for mining or quarrying operations. Given the community's goal of maintaining a rural

atmosphere, conflicts which might otherwise arise relative to desired land use are not likely to occur.

## **COS.4.6 Hydrology**

Water systems are integral to the total basic ecosystem affecting directly or indirectly all natural processes. Within the City, all surface waters originate from precipitation falling directly on the land and there are no major continuing streamway systems. This is a result of the peninsula's being a single hill formation creating a drainage pattern which is dispersed in a number of small watershed systems. There are no major watershed systems which are totally confined within the boundaries of the City, thus all hydrologic systems within the City are affected by runoff from other jurisdictions or affect other downstream jurisdictions which are important considerations to be taken into account in the planning process.

The drainage pattern of Rancho Palos Verdes is divided by a central ridge causing runoff to flow in several directions (Figure 10). The majority of the runoff flows directly south into the ocean. This flow is primarily within the jurisdiction of Rancho Palos Verdes with only a small portion within the City of Rolling Hills. Other runoff flows east through San Pedro, north through Rolling Hills and Rolling Hills Estates, or west through Palos Verdes Estates. All of this runoff, however, eventually does flow into the ocean.

Erosion, sedimentation, and siltation are part of the natural drainage processes and are necessary for the development and transportation of sediments for beaches and replenishment, and take place throughout this overall drainage pattern.

Little downcutting of drainage canyon bottoms is currently taking place due to erosion because they are already essentially in bedrock. Erosion, however, is taking place on the canyon walls where weak rock is located or slope wash exists, and this material falls, slides, or is washed into the canyon bottoms, and thence is transported out onto the beach during periods of heavy precipitation. By far, more material is carried to the sea by movement of landslides, such as Portuguese Bend, than by steam erosion. Small amounts of material deposited on the beaches by runoff remain only until the next big storm, when it is then washed away by the larger waves and carried southeast by the longshore current. The coastal shelf around the peninsula is primarily rocky as most of the beach sand is transported to other areas along the coast.

Soils within the City tend to be rich in clay and have poor percolation characteristics. This results in high runoff. The amount of additional runoff from increased urbanization of areas adjacent to the canyons would be slight, due to these soil characteristics (Earth Sciences Associates). However, impermeable surfaces such as roads, parking lots, and buildings, reduce the amount of land area which naturally



absorbs moisture, thereby accelerating runoff and increasing the amount of contaminants flowing into storm drains and subsequently the ocean.

Excessive erosion and runoff laden with pollutants both from agricultural and urban land use can have detrimental effects upon the intertidal and subtidal organisms. High silt loads in the intertidal areas could be particularly harmful to certain organisms as would insecticide and fertilizer pollution. In order to control erosion, lessen excessive runoff and allow greater ground absorption, National Pollutant Discharge Elimination System (NPDES) permits are required for specific projects if the project discharges could potentially enter surface waters. The program, created in 1972 under the Clean Water Act, is responsible for controlling and regulating point sources of discharge of pollutants to waters within the State of California to maintain, protect, and restore the water quality of streams and other navigable waterways.

The City of Rancho Palos Verdes currently implements the NPDES program as a requirement for certain development proposals. The NPDES process requires developers to incorporate low impact development standards to minimize the amount of runoff and minimize exposure to pollutants such as trash, nutrients, oil and grease, copper, zinc, lead and cadmium and bacteria. Developers must choose a type of Best Management Practices to mitigate potential pollutants. Applicable projects will not be issued grading, demolition, or building permits unless approval of a NPDES plan is obtained.

Currently, there are a number of existing channels and storm drains which have been both privately and publicly developed. Most have been designed to standards of the LA County Flood Control District and have been deeded to the District. In 2005, residents approved a Storm Drain User Fee, which was established to provide funding for the City's Storm Drain Improvement and Maintenance Program in order to adequately maintain facilities. In 2006, the fee was based on \$86 per Equivalent Residential Unit (ERU); increasing by the Consumer Price Index each year (maximum of 2% per year). The Storm Drain User Fee will expire in 2016, yielding an estimated \$13 million to assist in paying for construction projects, storm drain lining, maintenance, staffing and engineering. In 2009, the City's McCarrell Canyon Storm Drain Project was awarded 2009 Project of the Year in the Facilities Category by the Southern California Chapter of the American Public Works Association (APWA). This project was established as one of the highest priority planning goals established by the City Council for the Water Quality and Flood Protection Program. The McCarrell Canyon project was paid for with General Fund reserves and storm drain user fees. It will likely be necessary to seek and secure other funding sources to continue the water quality and storm drain programs when the user fee expires in June 2016. As urban development continues to occur, private developers may be

required to construct proper storm drain facilities to accommodate the impacts of the development projects.

## **COS.4.7 Biotic Resources**

There are several types of major native vegetation communities which can be found along the Southern California Coastal Region. Of these, the Chaparral community is the only one in abundance. Fresh and salt water marshes are the rarest; natural grasslands are close to becoming extinct; and coastal strand, coastal sage scrub, riparian woodland and oak woodland are rare in undisturbed state. In addition to the native vegetation communities comes various types of wildlife that thrive within the native habitats that can be found within Rancho Palos Verdes.

The urban development which has occurred on the Peninsula has degraded and/or eliminated many of the natural areas which are considered significant natural plant and habitat communities. In 1996, Rancho Palos Verdes agreed to enter into an agreement with the State Department of Fish and Game and U.S. Fish and Wildlife Service, collectively referred to as "Wildlife Agencies", to take the lead in the preparation of a Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP). Although the NCCP/HCP covers vegetation and wildlife species found across the entire City, it also created a designated "Preserve" to conserve sensitive native habitats within Rancho Palos Verdes and provide adequate habitat linkages between patches of conserved habitat. Through a partnership with the Palos Verdes Peninsula Land Conservancy (PVPLC), the City was able to acquire upwards of 1,400 acres of land through public dedications of City-owned land, private donations of land and formal land purchases. This partnership not only lead efforts in the various forms of land acquisitions for the designated Preserve areas, but also provided necessary support for the design and implementation of the formal NCCP/HCP.

The City's NCCP/HCP identifies and provides for protection and management of a diverse natural wildlife while allowing for compatible and appropriate development growth. The NCCP/HCP also provides comprehensive management and conservation of multiple species, including but not limited to species listed under the California Endangered Species Act (CESA) or federal Endangered Species Act (ESA) of 1973. The City developed a landscape-scale database of biological resources and land-use information to allow for the City and Wildlife Agencies to make informed land-use and conservation decisions for future projects. This database mapped the vegetation communities and sensitive species distributions, along with their potential habitat. The NCCP/HCP also provided measures for habitat restoration of disturbed areas within the Preserve, with a required minimum level of restoration and enhancement to be accomplished each year.



**Vegetation Communities.** Sensitive habitats within the City’s NCCP/HCP 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 RPV, these include all wetland habitat types (consisting primarily of riparian scrub) and all upland scrub habitats. No native grasslands have been delineated in RPV, but if patches of native grassland are identified, this habitat should also be considered sensitive. Habitats dominated by non-native plant species (e.g., non-native grassland, exotic woodland, and disturbed vegetation) are generally not considered sensitive. However, non-native grassland 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. 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. Most grasslands in southern California are now dominated by non-native annual grasses; nonetheless, these areas support many native species.

Approximately 8,697 acres of land are within the NCCP/HCP area (the City), including native habitats, non-native habitats, agricultural lands, disturbed areas, and developed lands. These communities are listed in the Table below and further described in the City’s adopted NCCP/HCP .

**Table COS.4 - 1  
Vegetation Communities in Rancho Palos Verdes (Permit Area)**

Natural Vegetation Community	Acres
Coastal Sage Scrub Sub-associations	
CSS – Artemisia Dominated	94.2
CSS – Baccharis Dominated	7.2
CSS – Encelia Dominated	8.2
CSS – Eriogonum Dominated	13.8
CSS – Rhus Dominated	233.9
CSS – Salvia Dominated	25.9
CSS – Undifferentiated	642.3
Saltbush Scrub	7.2
Southern Cactus Scrub	99.5
Southern Coastal Bluff Scrub	135.0
Grassland	952.5
Riparian Scrub	2.5
Exotic Woodland	75.4

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Disturbed Vegetation	164.9
<i>Subtotal Vegetation</i>	2,462.5
Other	
Cliff Face and Rocky Shore	71.8
Disturbed Areas	164.9
Agriculture	17.6
Developed	5981.0
<i>Subtotal Other</i>	6,235.3
<b>Total Acreage</b>	<b>8,697.8</b>

Conservation of some non-native grasslands contributes to NCCP planning goals. Further, mitigation measures for potential impacts to non-native grasslands may be required for various development projects in order to implement the Preserve design within the NCCP/HCP.

**NCCP Sensitive Species.** The City of Rancho Palos Verdes' NCCP/HCP has been prepared to maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within the City, pursuant to the requirements of the NCCP Act (1991) and Section 10(a) of the ESA. The NCCP/HCP is intended to provide for the comprehensive management and conservation of multiple species, including but not limited to those species listed under the ESA and identified in the table below.

**Table COS.4 - 2**  
**Sensitive Species List for the RPV NCCP/HCP**

Common Name	Scientific Name	Status
Aphanisma	<i>Aphanisma blitoides</i>	CNPS List 1B
South Coast Saltscale	<i>Atriplex pacifica</i>	CNPS List 1B
Catalina Crossosoma	<i>Crossosoma californicum</i>	CNPS List 1B
Island Green Dudleya	<i>Dudleya virens ssp. insularis</i>	CNPS List 1B
Santa Catalina Island Desert-thorn	<i>Lycium brevipes var. hassei</i>	CNPS List 1B
Woolly Seablite	<i>Suaeda taxifolia</i>	CNPS List 4
Palos Verdes Blue Butterfly	<i>Glaucopsyche lygdamus palosverdesensis</i>	FE
El Segundo Blue Butterfly	<i>Euphilotes battoides allyni</i>	FE
Coastal California Gnatcatcher	<i>Polioptila californica californica</i>	FT, SSC
Cactus Wren	<i>Campylorhynchus brunneicapillus</i>	NCCP Focal



		Species
--	--	---------

- FE = Federally endangered
- FT = Federally threatened
- 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

The Sensitive Species identified above can be found throughout various areas of the City. The first six species listed fall under sensitive vegetation found within the City. *Aphanisma* occurs in the City in coastal bluff scrub from Portuguese Point, along the coast, to the Rancho Palos Verdes and San Pedro City limit. The South Coast Saltscale has been detected on Portuguese Point and along the coast between Halfway Point and Shoreline Park. *Catalina Crossosoma* has been detected on dry, rocky slopes and canyons in CSS below 500 meters elevation. The Island Green *Dudleya* is found mostly on the Pacific slope on sea bluffs and rocky headlands. The Santa Catalina Island Desert-thorn was rediscovered on the Peninsula in 1976 and occurs on Portuguese Point within the City limits. *Wooley Seablite* occurs along the peninsula shoreline.

The last four sensitive species listed above are sensitive wildlife that have been found to thrive in the various vegetation communities within or nearby the City limits. Two populations of the El Segundo Blue Butterfly were found during focused biological surveys conducted in 2006. One population was found just north of Point Vicente in a large patch of coast buckwheat (36 observed) and the other population was found southeast of Point Vicente at the Fisherman’s access area (13 observed). Historically, the Palos Verdes Blue Butterfly has been witnessed near the “Switchback” area of Palos Verdes Drive East, locations within the landslide moratorium area, and Agua Amarga Canyon. Federally designated critical habitat for the Palos Verdes Blue Butterfly includes the “Switchback” area of Palos Verdes Drive East, Fred Hesse Park, and Agua Amarga Canyon. The Coastal California Gnatcatcher habitat is CSS vegetation. This habitat is protected and managed throughout the NCCP Program and ESA. Coastal population of the Cactus Wren breed in CSS dominated by extensive stands of tall prickly pear or cholla cacti.

All Sensitive Species listed above are associated closely with scrub habitats on the Peninsula. These Sensitive Species are described in detail in the City’s adopted NCCP/HCP.

### **COS.4.8 Ocean Resources**

The Palos Verdes Peninsula has long been extensively recognized for its beautiful shoreline and rich, abundant marine life. In the past, the shoreline was a major activity area for sport and commercial fisherman. Today, the shoreline is utilized by

hikers, skin divers, beachcombers, and students. This intense activity combined with other forces from the heavily developed Los Angeles and Orange Counties have affected the ocean environment surrounding the Peninsula. In the estimation of a number of qualified sources, the thousands of species of marine organisms that inhabit the tidepools were once depleted to dangerously low numbers due to excessive use and under-management of the intertidal shoreline area. Some species have been eliminated from the area while others faced the same threat.

The nearly crystalline water quality was once degraded by a number of water pollution factors and the lack of particle-absorbing organisms that exist in the marine environment. The kelp beds that surround the peninsula, providing food and shelter for many varieties of sea life were once reduced to a few patches of seaweed. In addition, recreational fishing has been adversely affected as a result of the contamination of off-shore sediments with deposits of chemical pesticides (i.e., DDT) that occurred in the 1950s through 1970s.

As a means to address impacts by people, Abalone Cove, one of the more ecologically diverse coastal regions throughout the peninsula, has been designated as a State Marine Park under the California Marine Life Protection Act (1999) and California Department of Fish and Game. A "state marine park," is a non-terrestrial marine or estuarine area that is designated so the managing agency may provide opportunities for spiritual, scientific, educational, and recreational opportunities, as well as preserving and maintaining various marine ecosystems. Under the current regulations all marine aquatic plants and invertebrates are prohibited from taking for commercial and recreational purposes, with the exception of the Finfish which may be caught by hook, line, or spear for recreational take only.

**Kelp Bed.** Kelp beds (*Macrocystis pyrifera*) are forests that serve as sanctuaries, nurseries, habitats and food sources for many species of marine organisms. Kelp is also a renewable natural resource, which should be carefully managed and maintained. Kelp fronds have been known to grow as much as two feet per day and eventually forming a thick blanket covering the surface of the water. The "biomass" (the amount of living matter per unit area) of a kelp forest is greater than that of a temperate land forest (C.C.Z.C.C., *The Marine Environment*) and in ecological terms may be 100 times more productive than the adjacent sand bottom (SCAG, *Coastline Planning*). Kelp also exerts a flattening effect on wave surges and thus serves as a stabilizing mechanism for acting against shoreline erosion – a significant factor for Rancho Palos Verdes as previously noted. Although the Rancho Palos Verdes kelp beds are not used for commercial purposes, Algin extracted from the kelp plant could also be used as a thickener and stabilizer in food and cosmetics, additives for medicines and components in textile products, adhesives, acoustic tiles, ceramic glazes, leather finishes, automobile polish, toothpaste, beer, seasonings, and countless other products.



The shoreline of the peninsula once flourished with huge dense kelp beds which at one point in the 1970's had disappeared. The ecologic sequence creating the decline of the kelp began with mass harvesting of the brown sea otter in the late nineteenth century. The sea urchin was the favorite food of the otter and for many years the population of sea urchins remained in check as a result of their presence. Due to the demand for sea otter pelts, fur traders practically eliminated the population. This action, combined with water pollution of the coast by sewage discharge, resulted in a situation where sea urchins thrived and grew.

Sea urchins are sea bottom dwellers and feed upon the kelp holdfasts (rootlike, anchoring structures which hold the plants in place). The feeding on the holdfasts severs the anchoring structure and the entire kelp plant washes ashore and dies. Prior to the increase in urchin population, the kelp was able to replenish itself as rapidly as it was depleted. As the sea urchin population increased, the replenishment process was not able to be maintained.

Another principal threat to the kelp beds off the Palos Verdes Peninsula was the discharge of wastewater from the Whites Point outfall on the Palos Verdes Shelf. The high volume of outfall contained a large quantity of suspended solids that most likely buried the hard bottom habitat. Other reasons for the decline may have included increased turbidity and reduced light penetration due to the discharge of total suspended solids, which may have prevented the growth of young kelp plants. Additionally, suspended solids may have also supported abnormally high densities of sea urchins.

From the mid-'70s to 1997, improved wastewater treatment processes resulted in a significant reduction in the discharge of total suspended solids from the Whites Point outfall. That, along with kelp replanting efforts in the 1970s, resulted in a remarkable increase in the kelp canopy from a low of 5 acres in 1974 to a peak of more than 1,100 acres in 1989.

More recently, erosion and sedimentation have threatened the kelp beds off the Palos Verdes Peninsula. Since 1980, an active landslide at Portuguese Bend on the Palos Verdes Peninsula has supplied more than seven times the suspended solids as the Whites Point outfall (LACSD 1997). When that sediment is carried into the ocean by storm runoff and excessive erosion from the landslide areas, the potential for kelp bed decline is present.

The earliest efforts to re-establish kelp beds began in 1967 on the Palos Verdes Shelf. Initial efforts were met with little success; however efforts were re-initiated by the California Department of Fish and Game in 1970 and continued through 1977. In 1974, the kelp beds off the Palos Verdes Peninsula began to show signs of recovery.

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During the 1980s, the kelp canopy dramatically increased. Once the beds were re-established, the California Department of Fish and Game discontinued active restoration efforts.

In 1996, the environmental group, Santa Monica Bay Keeper, embarked on a kelp restoration project, again focused on the Palos Verdes Shelf. Through this project, giant kelp was successfully cultivated in a lab and transferred back to its natural ocean environment.

**Marine Life.** The Rancho Palos Verdes shoreline has been a major activity area for commercial fishing of species such as lobster, white sea bass, abalone, and crab as well as various species of rock and kelp fish. All of these species were depleted to the point of endangerment and require management for recovery time. Furthermore, the fishing public has been discouraged from consuming certain species of fish (i.e., white croaker, etc.) over the past several years due to the health risks associated with possible DDT contamination.

Recreational fishing further adds to this depletion of the marine life. The average recreational fisherman fishes from the shore or at most a few miles offshore, and near shore species such as rockfish, flatfish, kelp and sand bass, perch, and shellfish are the most heavily affected.

According to the South Coast Regional Commission's estimates, there are provisions for the docking of a very large number of private boats in the South Coast Region. Many private boats are docked within 20 miles of Rancho Palos Verdes. As such, the South Coast Region is probably the most heavily used region in terms of pleasure craft. The large numbers of fishermen and skin divers associated with these pleasure craft in combination with shore fishermen and divers indicate that recreational fishermen contribute heavily to the extraction of the marine resources.

In addition to the use of marine organisms for commercial and recreational use, many institutions utilize them in a broad range of applications for bio-medical research. Certain species, very clearly exhibit different life functions unobservable in other animals. For example, the brain of the octopus is the best defined brain of any known organism (C.C.Z.C.C., *The Marine Environment*). Medical research into brain functions has utilized this resource.

Tide pools and rock intertidal areas are prime areas for the extraction of many of these organisms. Many schools and colleges in the area offer oceanography, marine biology, ecology, and other ocean related classes which utilize the shoreline of Rancho Palos Verdes for observation and study. Specimens are collected for study purposes and taken back to school laboratories. This research and study though



further depleting the marine life, is essential in developing attitudes and management policies for proper conservation practices in the future.

Another damaging effect on tide pools and rocky intertidal areas is that of abuse by the unknowledgeable tide pool visitor. Numerous marine organisms attached themselves to the underside of rocks for protection. Many of these rocks are indiscriminately turned over by tide pool visitors. Left in this state, the attached organisms are exposed and soon die. Visitors unwittingly wade through tide pools crushing shellfish and anything in their way. People collecting shells, starfish, and anything else that can be carried away do so and eventually discard them as trash. Picnickers discard trash, and food remnants leaving an aesthetically unpleasing environment for the next visitors. Years ago these practices went unnoticed but due to the numerous visitors to the shore during the last decade, the tidal areas of Rancho Palos Verdes have suffered severely.

As a result of the denuded tide pools and general environmental degradation, restrictions have now been placed on unwarranted collection. The California Superintendent of Public Instruction and the Department of Fish and Game has developed guidelines for conserving tide pool resources. Today, State legislation prohibits the taking of any tide pool organisms without a permit from the Department of Fish and Game. Permits are issued to only those county education offices which adopted approved plans for conservation of tide pool life and who employ a staff biologist to conduct the program. The main problem now is enforcement with those who are unaware of the laws or refuse to comply with them.

To further restrict taking of marine organisms or disruption of tide pools, the State may enact legislation creating marine life reserves. Areas may be declared ecological reserves only if the State has title to the land or has other authority over the land (California Dept. of Fish and Game, Code). The State Lands Commission retains authority over those lands below mean high tide line. When tide pool areas are declared marine life preserves, the authority is transferred to the Department of Fish and Game for their administration.

The City could elect to gain control over the tidelands (area from mean high tide line seaward 3 miles) from the State Lands Commission. In this manner the City may regulate and control uses within this area. In order to gain control, special enacting legislation would need to be passed and signed by the State Legislature and Governor. The City of Palos Verdes Estates has gained control of its tidelands in this manner (Statutes of California 1968, Chapter 316). Palos Verdes Estates has been authorized by the legislation to use the tidelands in a variety of optional uses such as construction of wharves, docks, small boat harbor, marina aquatic playground, etc. but its primary purpose is for the "establishment, preservation, restoration, improvement, or maintenance of intertidal and subtidal marine biological

reserves....” The City by creating this type of action would then be responsible to enact, maintain, and enforce any regulation it may choose to develop.

## COS.5 Resource Classification

This analysis recognizes the significance and interrelationships of the natural environmental factors discussed in the previous section in order to develop a management plan. This plan is to define and regulate development within areas which may be potentially hazardous, and to preserve, maintain, or improve the essential functions of physical and ecological systems, forms, or forces which may significantly affect the general health, safety, and well being of the public.

All factors (ecological units) of the natural environment inherently interact with one another. A change in any one factor may have a resulting series of reactions in any other factor. An example of this type of interaction is natural topography alteration resulting in change in hydrologic patterns which in turn may deprive natural vegetation of adequate irrigation causing a degradation of wildlife habitat. An analysis of the basic ecological units as described in the previous chapters enabled an understanding allowing identification and classification of critical areas for management considerations. Two classifications evolved which delineate:

1. Areas for Consideration of Public Health and Safety. (Figure 12)
2. Areas for Preservation of Natural Resources. (Figure 13)

To clearly identify the specific component making up each classification, all components determined to be critical were given a numeric code for reference purposes. Components numbered 1 through 5 are those elements which can be considered in relation to health and safety. Numbers 6, 7, 8 and 9 are those natural resource elements having unique values meriting consideration for preservation. Where several elements overlap, each component code number has noted in the designation.

**Chart COS.5 - 1  
Code Designations**

Sea Cliff Erosion Hazard	1
Extreme Slope (greater than 35%)	2
High Slope (between 25% to 35%)	3
Active Landslide	4
Old Landslide Area	5



Hydrologic Factors	6
Marine Resource	7
Wildlife Habitats	8
Other Natural Vegetation Areas	9

## **COS.6 Areas of Consideration of Public Health & Safety**

This classification includes those critical areas of concern in which the natural physical environment poses a significant hazard to the well being of the public. These normally include natural hazard zones such as, unstable ground conditions, or seismic hazard.

Within Rancho Palos Verdes, the primary hazard is landslide potential. Other geotechnical information which include hazard considerations such as seismic conditions or soils, were not included because they do not vary significantly throughout the area and/or were not a factor in determining capability of an area of development. Although these factors could be considered as having possible casual effects triggering landslides, the effective hazard area would remain constant, thus negating their use here.

Areas of active landslide are typically not suitable for construction of most permanent structures. Areas called out as Old Landslide are generally not suitable for development, although within this area portions may have stabilized and may be acceptable upon detailed study. In order to ascertain these suitability characteristics, detailed engineering geologic studies must be performed on an individual basis according to specific development applications.

The sea cliff erosion zone has been included within this classification due to hazards associated with sea cliff retreat. Although sea cliff retreat rates in Rancho Palos Verdes are probably less than other areas of the State, a hazard does exist and should be recognized, which is further detailed in the City's Coastal Specific Plan. As indicated earlier, the Coastal Specific Plan identifies areas along the bluff top that have geologic concerns, which resulted in establishment of the Coastal Setback Line. The location of the Coastal Setback Line along the City's entire coastline was determined as a result of a comprehensive geologic study of the City's coastal zone to address possible slope erosion and other geologic concerns.

Notwithstanding the Coastal Setback Line, areas of steep slope were included in two categories; extreme slopes of 35 percent and greater; and high slopes between 25 to

35 percent. Generally, these areas require a certain amount of topographic alteration in order to permit development which may result in increasing the probability of landslide and erosional problems. This would especially be the case in areas of known instability.

The component elements related to Public Health and Safety and their numeric code are as follows:

**Chart COS.6 – 1  
Code Designations**

Sea Cliff Erosion Hazard	1
Extreme Slope (35% and greater)	2
High Slope (between 25% to 35%)	3
Active Landslide	4
Old Landslide Area	5

The location of these areas may be found on Figure 12.

## **COS.7 Areas of Preservation of Natural Resources**

These areas are for conservation of plant and animal life, habitats for fish and wildlife species, areas for ecological and other scientific studies, and any other unique natural resource within the City.

The intertidal marine resource is probably the most significant resource within Rancho Palos Verdes and is dependent upon proper management of the land environment as it interacts with the ocean. The marine environment offshore is affected not only from discharge of waste water treatment plants, industrial plants, and electrical generating stations but also from surface runoff, aerial fallout, and thoughtless activities of man.

Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulation point sources that discharge pollutants into waters. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes connected to a municipal system, a septic system, or do not have a surface discharge are not required to obtain a NPDES permit; however, industrial,



municipal, and other facilities much obtain permits if their discharges go directly to surface waters. Developers with applicable projects are required to obtain a NPDES approval prior to building permit issuance.

The Sanitation Districts of Los Angeles County operate ten water reclamation plants (WRPs) and one ocean discharge facility (Joint Water Pollution Control Plant), which treat approximately 510 million gallons per day, 200 mgd of which are available for reuse. The Joint Water Pollution Control Plan (JWPCP) is located in Carson, California. The JWPCP is one of the largest wastewater treatment plants in the world and is the largest of the Districts' wastewater treatment plans. This facility provides both primary and secondary treatment for approximately 300 million gallons of wastewater per day. This plant serves a population of approximately 3.5 million people throughout Los Angeles County, including the City of Rancho Palos Verdes. Prior to discharge, the treated wastewater is disinfected with hypochlorite and sent up to the Pacific Ocean through a network of outfalls. These outfalls extend two miles off the Palos Verdes Peninsula to a depth of 200 feet.

Surface flow runoff accumulates small amounts of petroleum residue, road dust, and nutrients and pesticides associated with urban development which impact upon the marine environment as it flows into the ocean. Increased surface drainage flow also tends to erode canyon walls at higher rates increasing sedimentation and siltation of tide pools, although a certain amount of erosion is necessary to replenish beach sand. Generally, management at the drainage courses by maintaining natural unimpeded or assisted velocities enables percolation and filtration to occur, thus alleviating some of this pollution, as well as replenishing beach sand and irrigating the natural vegetation. The high clay content of the soils in Rancho Palos Verdes, however, does not enable high amounts of percolation to occur but allows runoff to continue preventing the soil from becoming overly saturated and initiating landslides. This precariously balanced system which cleanses and filter pollutants, replenishes beach sand, irrigates natural vegetation, and returns water back to the ocean can easily be upset by changes in drainage pattern and flow characteristics.

There also exists in Rancho Palos Verdes a number of significant wildlife habitats which are directly associated with vegetation communities. As noted earlier, the City established a NCCP/HCP to preserve the biodiversity within the City boundaries while allowing for continued economic development. The purpose of the Preserve is to identify properties where conservation will 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 Preserve. Within the NCCP/HCP is a dedicated Preserve with specified reserve areas. All of these reserve areas are to be managed for the City by the Palos Verdes Peninsula Land Conservancy. These reserve areas along with their corresponding acreage are identified in the Table on the next page.

**Table COS.7 - 1**  
**Reserve Areas within the NCCP/HCP Preserve**  
**(also referred to as Management Units of Preserve)**

Natural Vegetation Community	Acres
Abalone Cove Reserve	109
Agua Amarga Reserve	59.94
Three Sisters Reserve	98.5
Vista Del Norte Reserve	16.7
Portuguese Bend Reserve	416.54
Vicente Bluffs Reserve	75
Forrestal Reserve	154.9
Ocean Trails Reserve	114.7
San Ramon Reserve	94.5
Alta Vicente Reserve	50.54
Filiorum Reserve	190

The areas for Preservation of Natural Resource Map (Figure 13) identify critical natural resources. These are called out on the map as follows:

**Chart COS.7 - 1**  
**Code Designations**

Hydrologic Factors	6
Marine Resource	7
Wildlife Habitats	8
Other Natural Vegetation Areas	9

## **COS.8 Conservation**

The Conservation and Open Space Element (Figure 14) is a composite of those areas requiring considerations of public health and safety, and those areas requiring preservation of natural resources, and is intended to show the manner of their relationships in combination with each other.

The various tones indicated on the plan are Resource Management (RM) Districts. The darkest tone represents those areas requiring the highest degree of management and retention of open space. Lighter tones are less restrictive. Each district is made



up of various factors with associated degrees of capability or suitability for development. On the plan, the numeric code designation identifies each factor. (Note - Staff is working on this graphic and instead of tones, staff anticipates utilizing different colors – changes will occur throughout this section to reflect change in map)

Example: RM 1 2 4 8 refers to a district which must consider (1) bluff setback, (2) extreme slope, (4) active landslide, and (8) wildlife habitat factors.

Any proposed use or development within these districts must respond to specific development criteria established for each factor which are described here.

Wherever a multiple set of numeric code designations have been indicated, the corresponding development criteria would need to be applied and those criteria of a more stringent nature shall have precedence. The darkest tone on the map indicates the area of most natural environmental sensitivity and include any area where factors RM 2, 4, 6, and 7 are combined or individually designated. The total acreage for this district is 1,480 acres. (Note – acre amount will change based upon revisions to map)

Other areas which are designated either individually or in combination with RM 8 are indicated in a middle grey tone. These are areas requiring considerations of preservation of wildlife habitats. The total acreage for this district is 680 acres. (Note – acre amount will change based upon revisions to map)

The lightest tone represents natural resource management districts with designation of RM 1 (Sea Cliff Erosion), RM 3 (High Slope), RM 5 (Old Landslide Area), and RM 9 (Natural Vegetation). Considerations of these general conditions are necessary for any proposed development or use in this district. Within this district, special site conditions may exist enabling development to occur without creating significant adverse impact to these natural factors or endangering public health and safety. Detailed study is necessary to demonstrate that these special site conditions exist and development is suitable before any permit may be granted for any development. The total acreage for this district is 510 acres. (Note – acre amount will change based upon revisions to map) The total acreage of all resource management districts is 2,670 acres (Note – acre amount will change based upon revisions to map) which represents approximately 33 percent of the total acreage of the City.

**RM 1 – Sea Cliff Erosion.** The purpose of managing development within this district is to insure public safety from sea cliff erosion, landslide, and to maintain the physical, biological and scenic resource of particular value to the public within the City's Coastal Zone. Any proposed development within this district requires a detail engineering/geologic study by a registered geologist, soils engineer, and/or a

certified engineering geologist. The studies consider historic cliff erosion; cliff geometry; geologic conditions; landslides; ground and surface water conditions and variations; and other factors affecting slope stability. The studies describe the effects of the proposed development and must prove to the satisfaction of the City Geologist that the proposed development conforms to existing site conditions and presents no significant risk to human life, or adverse environmental impact before approval for any development is granted.

**RM 2 – Extreme Slope.** The purpose of this district is to regulate use, development and alteration of land in extreme slope areas so that essential natural characteristics such as land form, vegetation and wildlife communities, scenic qualities and open space can be substantially maintained. The district further considers the risks to public safety from earth slides and slips, erosion, and attendant siltation. Grading requiring cutting into slopes and embankments are potential instigators of landslide and the probability of these occurrences can be high within this district. Developments should consider retaining natural topographic conditions. Practices distorting the topography of hillsides are limited pursuant to the City's Development Code. Non-structural uses such as passive park, trails, agriculture, etc., are permitted along with minor alterations for ancillary accessory structures. Detailed engineering/geologic study may be required for development proposals or use to demonstrate to the satisfaction of the City that the proposed development or use will not significantly alter the existing topography, pose risk to human life or cause adverse environmental impact. Due to the scale of the accompanying maps, some areas of extreme slopes may not have been plotted, just as there may be some isolated areas identified as extreme slope which are not actually 35% or greater. It is intended, however, that all slope areas will be subject to the development criteria cited for the actual slope category.

**RM 3 – High Slope.** High slopes are areas between 25 percent and 35 percent gradient. Although considered similar to extreme slopes, high slopes contain less degrees of slope that enables a greater degree of flexibility. Engineering/geologic studies may be required to define existing soil and geologic stability and other pertinent characteristics necessary to certify stability and suitability of the proposed development. The existing character of the hills should be maintained by retaining, to the greatest extent possible natural skyline at ridges, natural drainage courses, and natural outcrops. Grading should respect natural topography and sharp geometric planes resulting from terracing or padding are to be avoided. Roads and driveways should follow natural topography to the greatest extent possible and provision for siltation and erosion control, and re-vegetation of all cleared and/or graded areas may be required. Increase in natural runoff quantities and velocities over natural terrain should not be permitted and drainage must be accomplished in a manner consistent with other natural systems.



**RM 4 – Active Landslide.** Due to the extremely unstable ground within this District, construction of new permanent structures is generally prohibited unless the area is stabilized by some natural or man-induced forces. The area may be suitable only for certain open space uses such as passive recreational area, agriculture, area of geologic interest, etc.; however, these uses must not create a situation further aggravating the condition. Irrigation or other practices which could trigger further slippage should require regulation. In any event, any proposed use or development requires detailed geologic and soils investigations to determine suitability or feasibility with regard to public health and safety. Existing uses and structures may be continued, transferred, sold, maintained or restored. (See Land Use Plan for further discussion of the existing residential area in the active slide.)

**RM 5 – Old Landslide Area.** These areas have experienced downslope movement in the past, but are not currently active. Some geologically older portions have stabilized while other portions show recent signs of movement which indicates a wide range of stability conditions. It can be assumed, however, that movement in certain areas could be triggered in the future by unusual rainfall, seismic shaking, man's activities (development cut slopes, introduction of ground water) or other causes. Those areas which are stable and potentially developable require detailed engineering/geologic studies for any proposed development to determine stability and development suitability to the satisfaction of the City prior to granting any approvals.

**RM 6 – Hydrologic Factors.** It is in the public interest to maintain the optimum operation of the hydrologic cycle since it constitutes an important resource (water) and interacts with other resources (vegetation, ocean resources). The fact that all watershed systems within Rancho Palos Verdes are either influenced by or influence other jurisdictions requires that full regional cooperation be sought and agreement be developed with regard to the management of these resources. Watershed management should prohibit activities which create excessive silt or other pollutant runoff or increase canyon-wall erosion or potential for landslide. Present drainage courses are generally stable and the characteristics of these courses should remain natural. Any substantial modification to stream flow, channel configuration, or ocean outfalls should be restricted to prevent increased erosion and coastal degradation.

**RM 7 – Marine Resource.** The Marine Resource is probably the most significant natural resource within the City and all necessary effort should be exerted for its maintenance. The establishment of the rock intertidal area as a marine reserve should be sought and strict enforcement be applied to all regulations concerning marine resources. As a general policy, no development within the City should be approved unless adequate measures are provided to meet pollution standards having relationship to marine resource ecosystems. A monitoring program should

further be established to measure the quality of the tide pool ecosystem in order to record any deterioration and establish responsibility. Further action may then be required to regulate those developments and sources adversely impacting marine resources, both within and outside the jurisdiction of the City.

**RM 8 – Wildlife Habitat.** Existing wildlife habitats should remain in natural open space with vegetation and natural drainage patterns maintained to provide water and foraging material in the habitat. Any proposed development within or adjacent to wildlife habitat districts must describe the nature of the impact upon the wildlife habitat and must provide mitigation measures to fully offset the impact.

**RM 9 – Natural Vegetation.** The existing natural vegetation of Rancho Palos Verdes is a major component of the environmental character of the City. The open natural hillsides are visibly apparent and create an atmosphere of a hilly rural community. The wild flowers, low coastal sage scrub, chaparral, and grasslands communities should be retained wherever possible. Any proposed development within this district should seek to re-vegetate with native material wherever clearing of vegetation is required.

**Consideration of Areas Outside of City.** In order for those natural environmental resource management districts to be truly functional, consideration must also be given towards management policies of adjoining resource areas which may impact upon or receive effects from management policies of the City. If these adjoining resource areas are not properly managed or coordinated with the efforts of Rancho Palos Verdes, the overall effect may be negated or severely limited in its usefulness in maintaining natural environmental features of the City. On the Natural Environment Element Plan, selected areas have been shown with a dashed arrow which are outside the City boundary. These areas should be managed in coordination with City efforts on a region-wide management program to insure the preservation of these features as well as development of an overall regional network of open space. These include Agua Amarga Canyon, Malaga Canyon, open space linkages at the crest of the Peninsula connecting open space canyons of Rolling Hills to open space canyons of the Portuguese Bend area, and several canyons at the east end of the City leading into Los Angeles City and County.

## **COS.8.1 Conservation Policies**

This section includes those policies which result from the analysis of data, goals, and recommended relationships between man and his use of the land resource, which have been the subject of this element of the General Plan.

These policies are divided into the two major categories of consideration in the Conservation and Open Space Element, and are supplemented by general policy



recommendations which apply to the entire element in its relationship to other elements such as the Land Use Plan and Element, Safety Element and Fiscal Element.

### *Policies for Consideration of Public Health/Safety and Preservation of Natural Resources:*

It is the policy of the City to:

1. Permit development within the Sea Cliff Erosion Area (RM 1) only if demonstrated, through detailed geologic analysis, that the design and setbacks are adequate to insure public safety and to maintain physical, biologic, and scenic resources. Due to the sensitive nature of RM 1, this area is included as an integral part of the Coastal Specific Plan.
2. Allow only low intensity activities within Resource Management District of extreme slopes (RM 2).
3. Require any development within the Resource Management Districts of high slopes (RM 3) and old landslide area (RM 5) to perform at least one, and preferably two, independent engineering studies concerning the geo-technical, soils, and other stability factors (including seismic considerations) affecting this site.
4. Allow no further development involving any human occupancy within the active landslide area (RM 4). **Note this goal will require revision based upon the Monk's decision.**
5. Require a more detailed definition of the limits and composition of any RMD's when reviewing any development proposal that contains one or more RMD's.
6. Develop and enforce a grading ordinance with detailed controls and performance standards to ensure both engineering standards and the appropriate topographic treatment of slopes based upon recognized site planning and landscape architecture standards.
7. Prohibit activities which create excessive silt, pollutant runoff, increase canyon-wall erosion, or potential for landslide, within Resource Management Districts containing Hydrologic Factors (RM 6).
8. In addition to the Abalone Cove Ecological Reserve, encourage establish of the rocky intertidal areas throughout the remainder of the City's coastline as marine reserves and enforce all regulations concerning marine resources (Resource Management Districts containing Marine Resources RM 7).
9. Encourage developments within or adjacent to wildlife habitats (RM 8) to describe the nature of the impact upon the wildlife habitat and provide mitigation measures to fully offset the impact.

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10. Require developments within Resource Management Districts containing Natural Vegetation (RM 9) to revegetate with appropriate locally native plants wherever reasonably possible whenever clearing of vegetation is required.
11. Stringently regulate irrigation, natural drainage, and other water related considerations in both new development and existing uses affecting existing or potential slide areas.
12. Consider development exceptions in areas otherwise precluding development for health and safety reasons, only if the development can establish beyond a reasonable doubt that it can overcome the conditions otherwise precluding development, and is otherwise compatible with the intent of the General and Specific Plans for the area.
13. Based on current information from State and Federal Agencies, the City should periodically publish a list of toxic chemicals as fertilizers, insecticides, herbicides, which are determined to be damaging to the environment, with particular concern for the marine environment. These lists should be distributed to all applicants for business licenses in the City. Additionally, the City should make efforts (including brochures, pamphlets, local community television, etc.) to continually inform and educate all residents and business operators about the impact of chemicals such as fertilizers, insecticides and herbicides on the environment and to encourage responsible use and disposal of such materials.
14. Maintain the existing natural vegetation of the City in its natural state to the maximum extent possible in all existing and proposed developments, to the extent commensurate with good fire protection policies and encourage the re-establishment of appropriate native plants.
15. Require a master landscape plan for any proposed development demonstrating enhancement and protection of natural vegetation proposed, selection of new complementing vegetation, and enhancement of the environmental factors.

## *Policies Specific to the Natural Communities Conservation Plan*

1. Implement the Rancho Palos Verdes Natural Communities Conservation Plan (NCCP).
2. Review all proposed development for consistency with the Rancho Palos Verdes Natural Communities Conservation Plan (NCCP).

Note - the two policies above were created by the General Plan Update Steering Committee. Additional Goals and Policies will need to be added that are required to be in the General Plan per the NCCP – Staff is working on these.



### *General Policies*

1. Continue to implement the City's Natural Overlay Control District and its performance criteria. **Note - this Policy may conflict with the NCCP which calls for the NOCD to be replaced by NCCP Criteria – Staff is evaluating this change and will work up a proposed revision.**
2. Continue to implement the natural environment policies of the Coastal Specific Plan.
3. Collect baseline data for air and water quality in order to develop standards for evaluation of the impacts of current or proposed development in and adjacent to Rancho Palos Verdes
4. Pursue the acquisition of rights over the offshore tidelands area related to the City's coastline. Develop proposals for grants and recognition as protected areas.
5. Encourage study of and funding to preserve native flora and fauna.

### *Habitat Protection*

1. Work with neighboring jurisdictions to manage contiguous wildlife and habitat areas and recreational amenities such as trails.
2. Encourage the restoration of vegetation throughout the City to indigenous native plant species. Encourage use of locally native plant species in City landscaping.

### *Environmental Protection*

1. Develop balanced programs to provide greater safe public access to the coastline consistent with protecting the environment.
2. Promote programs to encourage volunteer efforts to repair, protect and improve the environment.
3. Make every effort to preserve or restore a state of natural hydrology when projects impact canyons or other natural drainage areas when such efforts do not conflict with public safety.
4. Ensure the maximum preservation of the natural scenic character and topography of the City consistent with reasonable economic uses.

## COS.9 Cultural Resources

### COS.9.1 Paleontological, Historical and Archaeological Resources

**Background.** The history of Rancho Palos Verdes goes back farther than the days of El Rancho de los Palos Verdes. However, there are no written records of man's activities during these times, often erroneously called "pre-history." The only records we have of man and other life forms as they existed during this period is what is uncovered from archaeological sites.

Through careful excavation of archaeological middens (campsites of ancient communities), it can be learned how the previous tenants lived. Analysis of archaeological sites yields insight as to how men of earlier times related to one another, their god, and to nature. Such insight may well be the key to modern man's understanding of himself.

The importance of archaeological sites has slowly received higher esteem and government recognition. In 1966, the Federal Government enacted the National Historic Preservation Act of 1966. This law called for the protection and preservation of sites, structures, and monuments of historical significance, including archaeological sites. Section 106 of the National Historic Preservation Act granted legal status to historic preservation in Federal planning, decision-making, and project execution. Section 106 requires all Federal agencies to take into account the effects of their actions on historic properties, and the Advisory Council on Historic Preservation (ACHP) is the Federal entity created solely to address historic preservation issues through Section 106. In 1971, Executive Order 11593 was issued which called for the "Protection and Enhancement of the Cultural Environment." The National Historic Preservation Amendments of 1992 provided further direction of Section 110, giving Federal agencies direction to identify and consider historic properties in Federal and federally assisted action.

On the state level, under the California Environmental Quality Act, CEQA, archaeological sites are to be considered as resources, and the impacts of the proposed project on that resource must be assessed. If a field investigation reveals a site, building, or structure of significance, it may qualify for inclusion in the National Register of Historic Places. The California State Office of Historic Preservation is responsible for administering federally and state mandated historic preservation programs to further the identification, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer and the State Historic Resources Commission.



**Paleontological Resources.** In addition to archaeological sites, the “prehistory” of the Peninsula is also recorded in the earth in the form of fossils. Paleontology is a branch of geology which deals with the life of past geological periods, as recorded in fossil remains. The two major classes of fossils that occur on the Peninsula are Foraminifer and Mollusks. Both contain species of fauna that are marine in origin.

Because of the degree of research done in this area and their wide distribution through the Peninsula, paleontological resources are not thought to be endangered. However, should a particular site exhibit a high degree of paleontological significance, the preservation, excavation and no action options discussed below relative to archaeological sites would be applicable.

**Archaeological Resources.** Within the incorporated boundaries of Rancho Palos Verdes, several significant archaeological sites are known to exist. In addition to these known sites, there are areas within Rancho Palos Verdes which are “probable” archaeological sites. The area around these sites should also be considered as “archaeologically sensitive.”

The location of these known sites and probable sites are on file with the Community Development Department. To prevent vandalism or “pot hunters” from ruining these sites in their search for arrowheads, pottery or other Indian artifacts, locations of these sites are not indicated in this Plan.

The most prominent of the archaeological phenomena which occurs on the Peninsula is the middens left by the Gabrielino Indians. Indians of the “. . . wider Gabrielino group occupied Los Angeles County south of the Sierra Madre, half of Orange County, and the islands of Santa Catalina and San Clemente.” (Kroeber)

There are locations all along Rancho Palos Verdes’ coastline where the Gabrielinos had established campsites for many years. There are also a few locations where excavation has indicated trade centers where it is speculated that the Indians from the marineland traded with the islanders for otter pelts and other goods. For these reasons, the entire coastal area in Rancho Palos Verdes should be considered as “archaeologically sensitive” and is designated with an Overlay Control District in the Plan.

In addition to the coastal area, areas which should be considered as archaeologically sensitive include the vacant land areas north and east of Narcissa in upper Portuguese Bend.

There are other areas in Rancho Palos Verdes which have archaeological significance. Many of these sites have already been impacted by construction. As a result, those few remaining undisturbed archaeological sites have an increased

significance and added archaeological value in that they become the remaining, but decreasing, vestige of man's history of Peninsula.

**Historical Resources.** Although the land which is now the City of Rancho Palos Verdes is rich in history and past cultures, the objects, sites, and structures of true historic significance are modest in number. The lighthouse at Point Vicente, which has guided sailors since 1924 and was placed on the National Register in 1980; Portuguese Bend, which served as a pick-up point for smuggling operations when the land was ruled by Spanish Viceroy; Villa Francesca (i.e., the Peppertree gatehouse to the Portuguese Bend community) which was placed on the National Register in 1986; the estate of Frank Vanderlip, principal founder and developer of much of the Palos Verdes Peninsula; the Harden Estate (i.e., the Portuguese Point gatehouse); the Portuguese Bend Riding Club and stables, which serves as the hub of a social sector in the area; and the Lloyd Wright-designed Wayfarers Chapel, which was placed on the National Register in 2005. These sites and structures represent the major historical points in Rancho Palos Verdes.

Several other features, such as the Narcissa gatehouse to Portuguese Bend, are also well-known, but they are more special features and points of interest than points of historical significance, given the criteria promulgated in the National Historic Preservation Act of 1966. In recent years, however, mid-20<sup>th</sup> century modern residential architecture has gained favor amongst the public, and the City of Rancho Palos Verdes is home to several examples of this style. In 2009, a group of residents in the City's Seaview neighborhood petitioned the City Council to designate the 190 Paul R. Williams-designed homes in their neighborhood as a historic district. In addition, the City is home to several excellent examples of custom, single-family homes by such well-known mid-century architects as Lloyd Wright, Richard Neutra, Aaron Green, Thornton Abell and Pierre Koenig.

## **COS.9.2 Cultural Resources Options**

Should a pre-construction field investigation reveal a significant archaeological site, three basic options immediately present themselves. The site can be preserved, the site can be excavated, or no action to affect the fate of the site can be taken. The latter is a decision not to make any decision. Traditionally, such a policy of non-decision by the affected governmental unit has added to the rapid depletion of the nation's archaeological resource.

**Preservation.** Preservation of the site can be accomplished through acquisition, development controls, site design, and, to some extent, through zoning. The National Historic Preservation Act of 1966 does provide funds for property acquisition, but only where the project is performed in conjunction with a State plan for historic preservation. The California State Office of Historic Preservation



provides information regarding potential funding for the preservation of historic property.

Development controls and site design are also effective means of preservation. Examples of this technique are The Village Condominium and redevelopment project in Redondo Beach and, locally, what was proposed for site LAN-709 in Rolling Hills Estates, previously discussed. In both of these cases, it was proposed that the midden areas become parks or open space areas. No grading would be done which would disturb the distribution of the artifacts which lie a few feet below the surface. This is important in that the location and context in which the artifacts are found is as important as the artifacts themselves.

This preservation technique would be even more archaeologically desirable if the land became publicly owned. This is because State law prohibits “pot hunting” on publicly owned lands, but does not deal with securing known or probable archaeological sites in private ownership.

Zoning controls can facilitate preservation if the land is zoned open space for the preservation of natural or historic resources. However, because of the legal challenge to zoning ordinances for the preservation of these resources, zoning control by itself is not the most effective technique for archaeological preservation.

**Excavation.** Salvage excavation of a site is the second option open when a site is being considered for development. Traditionally, excavations of an archaeological site have been rushed by the roar of an approaching bulldozer. As a result, the information extracted from the site has had to be highly selective, hence, not always complete. The cost of salvage excavation has almost invariably been from private funding sources. The work has often been performed by college and university students. Proper excavation of a site can take from 24 hours to 24 days, depending on the size and depth of the site. To date, there are no public funding sources for archaeological salvage excavations.

**No Action.** As previously noted, the option to take no action has traditionally led to the loss of the particular archaeological resource. Such decisions have been based on the rationale that archaeological preservation is a civil matter and should be left to civil forces and remedies.

**Vehicles for Identification and Protection of Archaeological Resources.** The California Historical Resources Information System includes the statewide Historical Resources Inventory database maintained by the Office of Historic Preservation and the records maintained and managed, under contract, by eleven independent regional Information Centers. The Information Centers provide archeological and historical resources information, on a fee-for-service basis, to local governments and

individuals with responsibilities under the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA), as well as to the general public. The South Central Coastal Information Center, responsible for information collected in Los Angeles County, is located at California State University, Fullerton.

Once the sites have been identified and the preservation, excavation and/or no action options have been decided, the City can use one of several vehicles to implement its decisions relative to the site. As applicable to the project, the City can make its option decision a condition of approval for granting the subdivision, the conditional use permit, or the variance sought by the project.

By following these procedures, it is hoped that all significant archaeological, paleontological and historic resources in Rancho Palos Verdes can be preserved and protected. Relative to archaeological resources, where insurmountable circumstances arise whereby some technique of preservation cannot be implemented, the City can require salvage excavation of the site so that the maximum obtainable knowledge is extracted from the site before the archaeological resource is irrevocably damaged.

## **COS.9.3 Cultural Resources Policies**

It shall be the policy of the City to:

1. Seek funding for the identification, acquisition, preservation, and/or maintenance of historic places and archaeological, paleontological or geological sites.
2. Encourage the identification and protection of archaeologically sensitive areas and sites – making such information available only to those that need to know.
3. Require all projects, that are subject to the California Environmental Quality Act, for new construction, subdivisions, conditional use permits, and variances that occur in archaeologically sensitive areas to have a special archaeological component in their Negative Declaration, Mitigated Negative Declaration or Environmental Impact Report.
4. Forward Environmental Impact Reports to the University of California at Los Angeles, the Society for California Archaeology's (SCA) clearinghouse for this area, and to California State College at Dominguez Hills.
5. Preserve locations of archeological and paleontological significance on site where possible. Allow salvage excavation of the site where some technique of preservation cannot be implemented.



6. ~~Actively press for Point Vicente Lighthouse to be included in the National Register of Historic Places.~~ Attempt to acquire property as an extension of Point Vicente Park. Consider supporting the addition of other appropriate historic sites in the City to the State and National Historic Register.
7. Require that any artifacts or material of interest be offered to the Point Vicente Interpretive Center for inclusion in its collection. The Center should work with regional entities to share items of particular significance.

## COS.10 Open Spaces

This portion of the Element inventories the variety of Open Space and Recreational resource opportunities within the City.

### COS.10.1 Open Space Resources

According to the State's General Plan Guidelines, Open Space Land is defined as *"Any parcel or area of land or water that is essentially unimproved and devoted to an open-space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety"*. One of the founding principles for incorporation of the City of Rancho Palos Verdes was to maintain its rural character, of which a large component to maintaining that character is the expanse of open lands that the City has to offer. Consistent with the State's definition, to one extent or another, the open space lands within the City serve a variety of purposes, including 1) serving as an aesthetic means to provide an open feel to the City, 2) serving to preserve natural resources, 3) serving to create outdoor recreational opportunities, and 3) serving to protect the public's health and safety.

Open Space resources are either privately or publicly owned and serve residents and visitors in different ways. For example:

#### **Private Open Space Areas**

To serve aesthetic means as well as preserving natural resources and protecting the public's health and safety, many of the existing residential subdivisions developed within the City as Residential Planned Developments include open space areas that are subdivided parcels dedicated to be preserved as open space, and are privately owned - typically by the subdivision's Homeowner's Associations. These open space areas often include trails and vista points that were required as part of the subdivision and maintained through dedicated public access easements. It is also worthy to note that some open space areas within existing subdivisions serve as recreational opportunities. Within Rancho

Palos Verdes, various types of private facilities (tennis courts, equestrian centers, beach clubs, etc.) are available to individuals who either pay a fee for their use or are members of the club operating the facility.

Additionally, there are many individual parcels in the City that are privately owned and due their topographic and/or geologic nature, the parcel may not be able to be developed. As a result, a portion or the entirety of these parcels often have a land use designation of “Hazard Areas”, which prohibit development. These parcels also serve to preserve the aesthetic open space feel while protecting the public’s health and safety.

Furthermore, some of the larger non-residential projects such as the Terranea Hotel Resort and the Trump National Golf Club have private dedicated open space lots within the project that serve to provide as mitigation for the project’s impacts to habitat and wildlife species. These open space areas often include trails and vista points that were required as part of the subdivision and maintained through dedicated public access easements

Finally, it is worth noting that the City is home to 8 elementary schools, 3 middle schools, 1 high school, and Marymount College. While these campuses have buildings on them, they also have fairly extensive open space areas used recreationally by the students that attend the facilities as well as members of the community.

## **Public Open Space Areas**

Publicly owned Open Space within Rancho Palos Verdes is plentiful and is provided for by various levels of government. While the City has a large number of parks, each with its own qualities and attributes, in recent years the City has worked extensively towards the purchase of large open space areas throughout the City to create a habitat preserve as identified by the City’s Natural Communities Conservation Plan (NCCP). These public open space areas serve residents and visitors by providing that open feel to the City, preserving natural resources, and creating outdoor recreational opportunities.

## **COS.10.2 Recreational Resources**

Recreational resource areas include sites which have been set aside or are proposed for either active or passive use. These sites are structured to various degrees to allow specific site activities to take place. While many of these resource areas provide specific path and trail networks, systems which involve linear right-of-way for the purpose of transportation or recreation, these path and trail networks are addressed in more detail within the Infrastructure section.



Recreation sites are developed into either active or passive facilities. Active recreational facilities are highly structured and designed with specific activity areas, such as recreational buildings, tennis courts, baseball fields, children's play apparatus, etc. On the other hand, passive recreational facilities are mostly unstructured in order to allow natural ecosystems to function with the least amount of human disturbance. Passive sites are usually used for nature studies, hiking trails, limited picnicking areas, etc.

The following groups recreational facilities into active recreational areas and passive recreational areas. This grouping was utilized in order to most accurately reflect the intensity and type of site use provided by an individual facility. A further breakdown within active/passive groundings organizes recreational facilities under the level of government which controls and operates the facility.

### **COS.10.3 Active Recreational Areas**

Active recreational facilities that are publicly owned supply \_\_\_ acres of structured recreational areas; \_\_\_ acres are developed and 165 acres of that is a golf course. The total acreage figure does not include a significant amount of recreational areas supplied by Palos Verdes Peninsula Unified School District facilities.

#### ***City of Rancho Palos Verdes Facilities***

**Hesse Park.** This 28.32 acre park, with its well-manicured parkland and active community center, is one of the most popular in the City. Among the features available for public enjoyment in the upper park area are baseball and soccer fields, numerous picnic areas with barbecues, playground equipment suitable for toddlers to adolescents, and a well-used ¼ mile walking path. Most of the privatized recreation classes are offered at this facility and many Peninsula Senior activities are held here. Additionally, three rooms in the community center are available for rental for meetings and private parties.

The lower park site (approximately 18 acres) offers a sand volleyball court, picnic areas (no barbecues permitted), leisurely walking paths, and comfortable locations for enjoying panoramic views of Catalina Island north to Malibu. In 2009 the City Council took action to initiate improvements to the lower portion of Hesse Park for the purpose of improving accessibility to all user groups and enhancing the aesthetic condition of the Park.

**Ladera Linda Community Center.** This former elementary school site's amenities include a parking lot, restrooms, paddle tennis courts, tot lot, playground and basketball court. Ladera Linda is also the home of the Discovery Room which features live and static exhibits of local flora, fauna and historic information. Staff

and volunteers provide educational programs on-site for a large variety of school, youth and other groups as well as conduct docent-led hikes in the adjacent Forrestral Property. This 11.21 acre location also has a multipurpose room and classroom available for rental for meetings and private parties. There are excellent views of the cliff face, hillsides, coastline and ocean.

**Point Vicente Interpretive Center.** This site is approximately 27.4 acres. The main attraction of the site is the Interpretive Center, which opened in 1984. The Center offers educational and recreational opportunities along with dramatic coastline vistas. Its location provides spectacular opportunities to view the annual migration of the Pacific Gray Whale from December through April. The beautiful bluff-top park includes paths and trails, picnic areas and picnic benches. The coastal bluffs are part of the City's NCCP Preserve. In addition, this is the site of the City's annual "Whale of a Day" community event. In 2005 a significant expansion was completed to the Interpretive Center building and surrounding grounds. The expansion provided for an expanded visitors center and a large meeting room that is made available for rental for meetings and private parties.

Another significant expansion opportunity for the Interpretive Center is under way. The Annenberg Foundation is underwriting and managing a project to implement the site improvements identified in the Rancho Palos Verdes Vision Plan for Lower Point Vicente. The vision for the site is to create an area that connects the community to the ocean and the land, providing education, enhancing interpretative facilities and outdoor educational features, creating an educational center and connecting the site to the trails at the Vicente Bluffs Reserve and beyond.

The goals of the proposed project are to: 1) create model learning destination and educational programs that preserve the beauty and uniqueness of Point Vicente and complement the mission and work of the Point Vicente Interpretive Center, and 2) provide interior and exterior spaces that celebrate the bond between humans and nature, offer a model animal adoption program and open the center to the community for educational, civic and recreational use.

The proposal, based on a comprehensive study of the community done in concert with the development of the City's Coast Vision Plan, includes using architecture, art and exhibits to inform the public about Palos Verdes geology, history, marine ecology, terrestrial animals and habitats; creating a hands-on education center and outdoor exhibits that dovetail with the mission of the Point Vicente Interpretive Center; offering behavior modification and socialization programs, workshops and counseling related to domestic animals; providing programs, volunteer opportunities and educational curricula for students and teachers; providing additional passive recreational amenities on the site by preserving and extending



open space; expanded picnic facilities and additional paths and trails; and habitat restoration and native planting. The site improvements being considered include:

- A Center that would focus on providing education, services, and volunteer opportunities to learn about animals, science, behavior and care.
- An outdoor exhibit area that would include a reconstructed Tongva Village and an archaeological dig
- Expanded picnic areas and restroom facilities
- Grassland and habitat restoration, and improved watershed management
- Enhanced pedestrian pathways and trails

**Upper Point Vicente Park/Civic Center.** Formerly a Nike Missile Base, this primarily passive park site surrounds the City's City Hall buildings, a telecommunications site, Palos Verdes on the Net computer center and multimedia studio, and the City's maintenance yard. The entire site is 73.3 acres and surrounds a small parcel that is still owned by the U.S. government. This site has been included in the active park sites as there is a sand volleyball court and tennis court at the site. Additionally, the park provides a large open grassy area. The remainder of the site is largely undeveloped and generally slopes down towards Palos Verdes Drive. This undeveloped portion is part of the City's NCCP Preserve and includes public trails. There are spectacular views of the ocean and this is the site of the City's annual July 4th Independence Day Celebration.

In 2004 the City Council identified the development of a new Civic Center as one of its tactical goals. Along these lines, the City's Coast Vision Plan identified the site as suitable for a new City Hall, Community Center, and Cultural Center along with a Village Green, additional parking spaces and trail heads. Since then the City has been moving forward in this direction. In 2009, the City Council initiated the creation of a Civic Center Master Plan.

**Robert E. Ryan Park.** The City's first park was transferred from the County at the time of the City's incorporation in 1973. This 11.61 acre park features a community building with a small activity room and patio which are available for rent, a tot lot, playground, picnic areas with barbecues, grassy fields, and a baseball diamond. Views from this park are superior, and the mature trees add to the atmosphere.

**Eastview Park.** Improvements on this 9.9 acre site include a children's playground, picnic facilities, jogging path, permanent restroom, landscaping, and an off-street parking lot.

**Coast Vision Plan.** The Coast Vision Plan is not a specific recreational facility but represents a planning document that ties many facilities together and as such should be noted. Specifically, the Coast Vision Plan represents over two years of planning, including an extensive public outreach effort, to create an informational planning document for the City's coastal areas (including five key sites not included in the City's Palos Verdes Nature Preserve), with public access, interpretive materials, recreational amenities, and other facilities to improve the experience of the coast and open space for residents of and visitors to the Peninsula. The Plan established a vision, goals, concept designs and design guidance that seek to cohesively link key open space properties and public lands along the coast, including the NCCP properties located within the Palos Verdes Nature Preserve.

## *City of Los Angeles and Los Angeles County Facilities*

**Deane Dana Friendship Community Regional Park.** This park is a 123 acre natural area park located partially (97 acres) in the City and partially in the City of Los Angeles. The park offers dramatic panoramic views of Catalina island, Los Angeles, and Long Beach Harbors, Los Angeles to the north, and the San Bernardino Mountain ranges. Several hiking trails are on the property as well as restored native habitat areas. The site also includes a 4,000 square foot nature center, with indoor and outdoor classrooms. A picnic area, barbecues and playground overlook are also within the park boundaries.

**Los Verdes golf Course.** Los Verdes Golf Course is a fully developed 165 acre site which is operated by the County. This facility contains an 18 hole, par 72 course with associated facilities (clubhouse, banquet facilities, coffee shop, lounge, pro shop, two comfort stations, locker and shower rooms, and parking for 300 cars).

## *Palos Verdes Peninsula Unified School District Facilities*

The Palos Verdes Peninsula Unified School District Facilities is one of the largest suppliers of public active recreational facilities within the City. The School District provides these facilities for many age levels in the form of open play areas, paved court areas, gymnasiums, etc. Tennis courts are available on a first-come, first-served basis. All other activities, such as organized soccer, baseball and football, must be arranged in advance. It would be a cumbersome task to describe each facility on every school site; therefore, this section only points out that site facilities are designed for the age groups which use the school. It can be assumed that intermediate and high school sites contain facilities which fulfill the needs of young adults and adults, while elementary schools provide recreational activities designed for the young. It is to the City's advantage for the School District to maintain an open school grounds policy, in order to help fulfill active recreational demands of the community.



### **COS.10.4 Passive Recreational Areas**

Passive recreational activities comprise the largest amount of recreational lands (\_\_\_ acres) within the City. This is a reflection of the strong desire to maintain an atmosphere which is compatible with the character of the Peninsula. Most of the areas lie along the coastal region.

#### *City of Rancho Palos Verdes Facilities*

**Abalone Cove.** Abalone Cove Shoreline Park features two beaches (Abalone Cove and Sacred Cove), tidepools, bluff top viewing areas and trails crisscrossing the area. The 80.04 acre park contains a State Ecological Preserve and taking of protected animals and marine life is prohibited. There is direct access to a parking lot off Palos Verdes Drive South. Access to Abalone Cove Beach is by a long trail from the parking lot. To access Sacred Cove, users must walk along Palos Verdes Drive South to one of two trails between Portuguese and Inspiration Points. Lifeguards are on duty at Abalone Cove Beach during summer hours and weekends only. The views of the ocean and Catalina Island are spectacular. Barbecues, fires, and dogs are prohibited at this site.

**Clovercliff Park.** This peaceful .17 acre vest pocket park has a path, is landscaped, and seating is available on the large rocks. There is a distant ocean view.

**Del Cerro Park.** This 4.49 acre park features panoramic views of canyons, agriculture, coastal headlands, ocean and offshore islands from this site, and a flat grassy play area. It is landscaped and has a safety fence just below the bluff to restrict access to the canyon below without blocking the views. There is a parking lot, but no restrooms.

**Don C. Wallace Radio Ranch Museum.** The 32,000 square foot property was originally intended as a radio museum with funds for the improvement of the museum to be raised by the Wallace Radio Ranch Museum Foundation. When the required funds were not raised the property became a neighborhood park maintained by the Wallace Ranch Homeowners Association.

**Founders Park.** Founders Park was formally accepted by the City on January 17, 2006 and named in honor of the City's founders who led the effort to incorporate the City of Rancho Palos Verdes more than 30 years ago. This 5.5-acre parcel is located adjacent to the Trump National Clubhouse and offers patrons an attractive sight with breath-taking ocean views, picnic tables, a gazebo, nearby restrooms, coastal access and adjacent walking and biking trails.

**Frank A. Vanderlip, Sr. Park.** Improvements on this quiet little .48 acre site include benches, a safety fence at the cliff edge, and landscaping. Unobstructed views of the ocean, headlands and islands are the main attraction at this park.

**Grandview Park.** A 17 acre park purchased from the Palos Verdes Peninsula Unified School District. There are excellent views of the golf course, greenbelt, inland towards Los Angeles, the coastline, and ocean.

In 2009, along with Hesse Park, the City Council took action to initiate a remodel to Grandview Park for the purpose of improving accessibility to all user groups and enhancing the aesthetic condition of the Park.

**Martingale Trailhead Park.** This 1.2 acre trailhead provides access to a trails system serving the cities of Rancho Palos Verdes, Rolling Hills and Rolling Hills Estates. Both hikers and equestrians utilize this park. Improvements include landscaping, a tri-level drinking fountain which serves horses, humans and small animals, a mounting block, and a seating rock.

**Point Vicente Fishing Access.** The City acquired this property from Los Angeles County through a grant deed in May 2004. This 10.5 acres site features a paved parking lot, a restroom building, an improved trail to the shoreline, and incredible Catalina and ocean views. A majority of the Park is part of the City's NCCP Preserve. Improvements to the site, including an expansion of the parking lot and trails that lead to the Terranea Resort were completed as part of the Terranea Resort project in 2009.

## *Additional Public Open Space and Nature Preserve Properties Owned by the City*

**Barkentine Reserve.** This property owned by the City was purchased from the Palos Verdes Portuguese Bend Land, LLC in August, 2001. The cost of the property was \$3,887,154 and was funded by Proposition A, County Park Bonds. The property is approximately 98.5 acres in size. The Barkentine Reserve Preserve is located on the western side of the Portuguese Bend Nature Preserve. The property contains outstanding habitat and heavily used by hikers and equestrians. It also contains habitat corridors deemed essential for maintaining stable populations of California Gnatcatchers and Cactus Wren.

**Forrestal Reserve.** The property owned by the City was acquired from the Diamond Brothers Three Partnership in December, 1996. The total cost of the property was funded through two revenue sources: Los Angeles County Regional Park and Open Space District at \$4,300,000, and the California Wildlife Conservation Board at



\$3,400,000. The property is 154.9 acres in size. There are some trails that exist on the property as well as a paved road and significant drainage structures remaining from a proposed subdivision. The City and the Palos Verdes Peninsula Land Conservancy have entered into an agreement for the operation and maintenance of the property.

**Agua Amarga Canyon.** This property owned by the City is 38.94 acres of undevelopable canyon with some of the finest habitat on the Peninsula.

**Portuguese Bend.** This property owned by the City is 423.9 acres and includes a portion of the active landslide. The site contains outstanding habitat and heavily used by hikers and equestrians.

**Upper Filiorum.** This property owned by the City is 190 acres that mostly is located within the City's landslide moratorium area. The site contains outstanding habitat and heavily used by hikers and equestrians.

**Del Cerro Buffer.** This property owned by the City is 17.44 acres and consists of the slopes immediately adjacent to Del Cerro Park.

**Oceanfront Estates Open Space.** Approximately 70.5 acres were acquired through dedication as a condition of the development of the 79 lot Ocean Front Estates subdivision. The dedications were made under the Quimby Act. Included in the dedication, at the top of the bluff and extending the full length of the ocean frontage of the development are approximately 47 acres of open space served by a trail system and a public parking lot. An additional 24 acres of restored native habitat is also included in the project.

**Open Space at Trump National Golf Club.** The Trump National Golf Club site includes many park and open space lots to be granted to the City. While the 5.5 acre Founders Park has been dedicated and accepted by the City, the various open space lots have not yet been accepted. The proposed dedication of open space includes approximately 78.8 acres of open space much of which has been restored to native vegetation. In addition there are two park sites (not including Founders Park) that total 12.2 acres which have not yet been accepted. The property will be dedicated to the City as mitigation for the development of the projects golf course and home sites. The Open Spaces have walking and biking trails along the bluff as well as access to the ocean. There are two public parking lots and public restrooms as well as picnic benches in the parks.

**Palos Verdes Drive East Switchbacks.** This property was received in satisfaction of the conditions of the Quimby Act in conjunction with the development of the Seacliff

# City of Rancho Palos Verdes General Plan

**Hills Tract.** It surrounds the switchback roadway of Palos Verdes Drive East as that roadway heads north from Palos Verdes Drive South. The property is 94.5 acres in size. There are no improvements to the property

**Shoreline Park.** The property was acquired from the County of Los Angeles by quitclaim deed in November 1997. The size of the property is 52.8 acres. The property is a re-vegetation site for the mitigation of the Trump National Golf Club project that is adjacent. Approximately 41 acres are being restored with native vegetation as part of that mitigation. There is a system of trails and a few tables and benches near the bluff edge.

**Coastal Redevelopment Agency Property.** The City's Redevelopment Agency acquired this 45.1 acre property from Transamerica Development Company in 1987 in conjunction with the recordation of a Parcel Map. In 1990 the City granted a Conditional Use Permit and a Coastal Permit to the South Bay Archery Club to use a portion of the property on a temporary basis as an outdoor roving archery range. The Archery Club has made minimal improvements (targets, warning signage, benches, small shade structures) to the property. It should be noted that this property is located within the most active portion of the Portuguese Bend Landslide and experiences nearly constant land movement. As a result the property is not suitable for permanent structures.

**Cherry Hill Lots.** The six Cherry Hill lots were purchased when the City moved Palos Verdes Drive South back into its original easement in 1988. The cost of the six lots was \$154,800. The lots are owned by the RDA. The six lots total approximately 1.96 acres in area. In 2001 the City acquired a seventh lot through a tax sale. The cost of the lot was \$2,977.84. The lots are unimproved however at least one lot has dewatering facilities on a portion of the property.

**Crestridge Property.** A 19.72-acre parcel was purchased by the City's Redevelopment Agency for approximately \$702,000 in March, 2000 in the hopes of developing Senior Affordable Housing to meet the City's affordable housing needs. The purchase amount came from the Redevelopment Agency's Housing Set-Aside Fund. In 2009, the City and Agency approved Parcel Map that subdivided the parcel into two parcels: Parcel #1 - a 2.92 acre parcel to accommodate the development of a 34-unit senior affordable housing project ("Mirandela"); and Parcel #2 - a 16.8 acre parcel which was granted to the City as Open Space in the NCCP Preserve. The 16.8 acre parcel is essentially unimproved with the exception of dirt trails, and contains native habitat.

**McKay Property.** The McKay property was donated to the City by a family that owned it in 1994. The property is 2.05 acres in size and is currently zoned



Commercial Professional. The property is mostly a steep hillside and has no practical use except visual open space.

### *Palos Verdes Peninsula Land Conservancy*

**Lunada Canyon.** This property owned by the Palos Verdes Peninsula Land Conservancy is 20 acres.

### *Miraleste Recreation and Park District*

**Open Space.** The Miraleste Recreation and Park District contains 32 acres of canyon area, used as a sanctuary for native wildlife. The area is on the east side of the Peninsula and includes hiking trails.

### *Other Open Space Lands that may be Dedicated to the NCCP Preserve*

The following 161.5 acres of publicly and privately owned properties have been identified and targeted for possible future dedication to the NCCP Preserve but are not considered essential to the proposed Preserve design. Adding the properties to the Preserve will require approval from the underlying fee owner, the recordation of acceptable conservation easements and available funding for active management by the PVPLC.. Since they are considered Open Space, they are listed here in this inventory.

**Coast Guard Upper Point Vicente Property.** 3.9 acres located at Upper Point Vicente

**Coast Guard Lighthouse Property.** 19.1 acres currently housing the Lighthouse and other structures at Lower Point Vicente.

**Long Point Parcel.** Although not required to do so by any conditions of approval, it is anticipated that the developer of the Terranea Resort Hotel Project will dedicate the bluff areas of the property to the Preserve. The possible Preserve area has been calculated as 10.0 acres.

**Coast Guard Lighthouse Property.** 19.1 acres currently housing the Lighthouse and other structures at Lower Point Vicente.

**Trump National Golf Club.** In addition to the other open space that will be deeded to the City, Trump National HCP is required to maintain two open space lots under private ownership. One is the 5.3-acre Forrestal Draw (Canyon) parcel and the other is the 4.4-acre Upper La Rotunda Canyon parcel. Since these two lots are to remain privately owned they cannot be formally dedicated to the Preserve without the

property owner's consent. It is anticipated that the property owner may wish to dedicate the habitat portions of these lots to the Preserve.

**Point View.** 40.0 acres of dedicated open space will be a condition of approval for any development project subsequently approved for the Lower Filiorum property, also known as Point View.

**7 Identified Homeowner Associations.** The City has identified seven local HOAs that own open space that could add habitat value to the Preserve. The City has targeted 76.1 acres for dedication to the Preserve of the 140.9 total acres of open space owned by the seven identified HOAs.

**Lands Adjacent to Agua Amarga Canyon.** There are two privately owned open space properties that abut the eastern end of City owned Agua Amarga Canyon property that could add habitat value to the Preserve. One is a 5.2-acre property referred to as Windport Canyon and the other is the .6-acre property at the northwest corner of Crest Road and Hawthorne Blvd.

## COS.11 Open Space Policies

It is the policy of the City to:

1. Provide appropriate access to public land.
2. Promote and/or sponsor recreation programs within the City.
3. Encourage local, public, non-profit recreational and cultural activities.
4. Seek County, State, Federal and private funds to acquire recreational lands.
5. Encourage land holders to contribute lands and/or easements to the City for recreational use.
6. Work through the State and Federal government in support of legislation resulting in City acquisition of land.
7. Encourage local groups to participate in the planning, development, and maintenance of recreation facilities.
8. Encourage institutions to provide public use of recreation facilities.
9. Encourage the building of playing fields for multiple uses by various recreational groups.