DRAFT INTRODUCTION
comparison to current General Plan Introduction
4/26/2018 version

Note: This document compares the proposed Draft Introduction with the current General Plan Introduction. Changes are shown as follows: **bold underline** text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

1 Palos Verdes Peninsula

~~The City of Rancho Palos Verdes s located on the Palos Verdes Peninsula in the southwest tip of Los Angeles County. The City includes 12.3 square miles of land and 7-1/2 miles of coastline. One-third of the total land is vacant, with more than three-fourths of the immediate coastline land vacant. The Peninsula has a unique physiography, formed over millions of years of submerging and lifting from the Pacific Ocean.~~ The residents of the Palos Verdes Peninsula are the beneficiaries of a unique geography, formed from millions of years of volcanic activity, plate tectonics and terracing from changing sea levels. The nine-mile wide Peninsula, once an island, ~~the Peninsula, none miles wide by four miles deep,~~ now rises above the Los Angeles Basin ~~with a highest elevation at~~ to a maximum of 1,480 feet, with uniquely terraced configurations and steep, rocky cliffs jutting upward 50 to 300 feet from the ocean. ~~The forming of the Peninsula has resulted in the unique terrace configurations readily observable today and the steep, rocky cliffs at the ocean's edge which rise from fifty to three hundred feet.~~ Erosion has ~~created~~ contributed to the creation of numerous steep-walled canyons. These physical characteristics give the Peninsula magnificent views of the Los Angeles Basin, the Mountain Ranges of Santa Monica, San Gabriel and Santa Ana, the Pacific Ocean, Catalina Island and the Los Angeles/Long Beach Harbor.

The Peninsula's ~~It's~~ history is equally interesting, from the ~~early peoples~~ Native American Tongva people who migrated to the area, the ~~Gabrielinos (the last Indians in the area), the~~ Spanish explorers and missionaries, cattle ranchers of the Rancho de los Palos Verdes land grant, and to the whalers, ~~take-over by the Americans, the Palos Verdes Project, the developing of cities, and to the present~~ of the late 19th century. The early 20th century brought interest in developing the land for residential use, the Palos Verdes Project and formation of its present-day cities.

With its magnificent views ~~of the Los Angeles Basin and the ocean, and clean air, the~~, beautiful rolling terrain, mild climate, and clean air, the Peninsula is a most desirable place to live. Home construction ~~of homes~~ began in the 1920's and has continued ~~at varying rates~~ to the present. The rate of construction increased dramatically in the 1960's, ~~and intensified in densities~~ substantially increasing the area's density, primarily in the unincorporated areas of the Peninsula now known as the City of Rancho Palos Verdes.

2 History of the City of Rancho Palos Verdes

At the close of the 19th Century, the Palos Verdes Peninsula was inhabited solely by a few cattle ranchers and sheepherders. The Land was mostly covered with nothing more than native vegetation. Then, for a brief period in the early 1900s, the Peninsula enjoyed prosperity not only as a cattle ranch, but also as a rich farming area. Japanese families farmed the most southern slopes, growing fields of beans, peas, and tomatoes, while barley, hay, and grain were grown on the dryer northern slopes. In 1913, Frank A. Vanderlip, president of the National Bank of New York, purchased the 16,000-acre Palos Verdes Peninsula with a vision to develop the "most fashionable and exclusive residential colony" in the nation. Unfortunately, his dream was put on hold after the Stock Market Crash, the Great Depression and the onset of World War II. None of these setbacks, however, reduced the beauty of the Palos Verdes Peninsula or its potential desirability as a residential area.

In July 1953, the Great Lakes Carbon Corporation, which was leasing land on the Peninsula for mining, purchased 7,000 acres of prime undeveloped land from the Vanderlip family. After several unsuccessful mining attempts, the Great Lakes Corporation abandoned its mining operations and hired a group of skilled architects and engineers to create a master plan for development of its vast property. ~~Each of the four cities on the Peninsula incorporated for the same basic reason – control of planning and implementation policies.~~ Palos Verdes Estates had incorporated in 1939, and just prior to the great building boom in the late 1950s and early 1960s, the cities of Rolling Hills and Rolling Hills Estates both incorporated in 1957, ~~and Rancho Palos Verdes in 1973.~~

Fueled by the master plan and the post WW II economic growth in the South Bay area, the remaining unincorporated part of the Peninsula (now the City of Rancho Palos Verdes), which remained under the control of the County of Los Angeles, began to develop rapidly as the County granted more zone changes for higher density construction with little regard for the Peninsula's beauty, openness, or sensitive environment. During the 1960's, the citizens of the ~~entire Peninsula made repeated attempts to influence~~ unincorporated area repeatedly attempted to convince the County ~~planning and zoning in the unincorporated area~~ to restrain from this kind of uncontrolled developed and to institute planning and zoning regulations more consistent with the area's unique qualities. ~~The~~ Homeowners' associations bonded into the Peninsula Advisory Council, and the citizens' group Save Our Coastline, ~~a citizens group~~ was created to ~~concentrate the same attempts on the~~ consolidate efforts to promote proper limitations on the development of the Peninsula's coastal areas. ~~There were repeated failures as~~ The majority of such attempts failed, however, as the County repeatedly ~~granted more and more zone changes for~~ authorized higher ~~densities with little concern for sensitive environment of the area~~ density uses of many pristine areas of the community.

~~Incorporation attempts for a~~ Efforts to incorporate the Peninsula's fourth city (Rancho Palos Verdes) began in 1962 and ~~intensifying~~ intensified in 1969 when the County's new Master Plan for the Peninsula authorized population density far greater than that desired by the local residents. ~~There was much litigation and may setbacks before~~ After many legal battles and several disappointing setbacks, the California Supreme Court ruled unanimously in September 1972, ~~in ruled 7 to 0 in C~~urtis vs. Board of Supervisors, that landowners could not prevent voters from determining their municipal government. After ~~six months delay, an~~ this court decision, the Local Area Formation Commission (LAFCO) permitted a citywide election ~~was set . In that election, held~~ to take place and on August 28, 1973, an

overwhelming majority of 5 to 1 of the residents of the unincorporated portion of the Peninsula voted in favor of incorporation and elected ~~its~~ five City Council members, ~~who first met September 7, 1973. The City was formed. Its goals were clear. The major goal was self-determination. The right to determine land use, which meant lower densities, and preservation of the coastal resources, the canyon and rural resources, and the views.~~ With its incorporation, the City of Rancho Palos Verdes became the youngest of the four cities on the Palos Verdes Peninsula, each of which had incorporated for the same basic reason – to take control of planning and policy implementation over the area in order to preserve its natural beauty, openness, and small community atmosphere.

The City of Rancho Palos Verdes is located at the southwest tip of Los Angeles County (See Figure 1 – Regional Vicinity). It covers 13.5 square miles of land and 7.5 miles of coastline and has a population of 42,448 (2013). ~~Rancho Palos Verdes, a general law city, operates in the~~ Utilizing a council-~~city~~ manager ~~structure. A small staff was hired to provide administrative and planning services, with the other services provided through contract with Los Angeles County. Interim zoning was adopted, and a building moratorium was imposed in large areas of the City~~ form of government, the City's governing body, the City Council, is responsible for establishing policy, passing local ordinances, voting appropriations, and developing an overall vision for the City. The City Council appoints a city manager to oversee the daily operations of the government and implement policies it establishes. The City was also formed as a contract city, contracting for public services such as police and fire protection.

Today, as a result of the foresight of its founders and residents, the City continues to offer magnificent views, open spaces, and clean air and remains as an extremely desirable place to live.

3 What is a general plan and what are its regulatory requirements?

~~An additional step in the process was the presentation of development alternative models. This study included the environmental, social, and fiscal impacts of the models. Response to this study helped to refine some basic assumptions to land use planning and to give the staff direction in drafting of the plan.~~

Like many other parts of the country, major milestones in California's planning law date to the early 1900s, when California's cities began to experience significant development and increases in population. Subsequently, in 1937, California directed all of its cities and counties to adopt a general plan "for the physical development of the county or city" (Gov't Code §65300).

What is a General Plan?

The California Supreme Court has defined the general plan as the "charter to which [zoning] ordinance[s] must conform" (OPR 2017 General Plan Guidelines, page 10). Perhaps a better description comes from California's Governor's Office of Planning and Research 2017 General Plan Guidelines (Guidelines), which state that "the General Plan is a vision about how a community will grow, reflecting community priorities and values while shaping the future." The general plan underlies all land use decisions in a city, and, pursuant to state law, all of the City's subdivisions, capital improvements, development agreements, and other land use actions must be consistent with the city's adopted general

plan and the general plan land use map. Further, according to the Guidelines, the general plan serves to:

- Provide a basis for local government decision – making, including decisions on development approvals and exactions.
- Provide residents with opportunities to participate in the planning and decision-making processes of their communities.
- Inform residents, developers, decisions makers, and other cities and counties of the ground rules that guide development within a particular community.

The city's general plan must meet the following criteria:

- Comprehensiveness - A general plan must cover a local jurisdiction's entire planning area and address the broad range of issues associated with a city's development.
- Geographic Comprehensiveness - A general plan must cover all territory within the city limits, both public and private.
- Regional Context - Cities should coordinate plans regionally when possible and appropriate, in alignment with their sustainable community strategies, to work towards regional goals.
- Issue Comprehensiveness - A general plan should focus on those issues that are relevant to the planning area. The plan must address the jurisdiction's physical development, such as general locations, appropriate mix, timing, and extent of land uses and supporting infrastructure.
- Internal Consistency - Internal consistency requires that no policy conflicts, either textual or diagrammatic, can exist between the components of an otherwise complete and adequate general plan such as internally referenced external documents like a climate action plan or a local energy assurance plan..
- Equal Status Among Elements - All elements of the general plan have equal legal status. The general plan must resolve potential conflicts among its elements through clear language and policy consistency.
- Consistency Between Elements - All elements of a general plan, whether mandatory or optional must be consistent with one another.
- Consistency within Elements - Each element's data, analyses, goals, policies, and implementation programs must be consistent with and complement one another.
- Area Plan Consistency - All principles, goals, objectives, policies, and plan proposals set forth in an area or community plan must be consistent with the overall general plan.
- Text and Diagram Consistency - The general plan's text and accompanying diagrams and maps are integral parts of the plan and must be in agreement.
- Long-Term Perspective - Since the general plan affects the welfare of current and future generations, state law requires that the plan take a long-term perspective. Most jurisdictions select 20 years as the horizon for the general plan. The horizon does not mark an end point but rather provides a general context in which to make shorter-term decisions. Planning is a continuous process; as such, the general plan should be reviewed regularly, regardless of its horizon, and revised as new information becomes available and as community needs and values change.

While the general plan will contain the community's vision for future growth, California law also requires each plan to address the following 7 mandatory elements:

- Land Use Element designates the type, intensity, and general distribution of uses of land.
- Circulation Element identifies the general location and extent of existing and proposed major thoroughfares, transportation routes, and other local public utilities and facilities.
- Housing Element assesses current and projected housing needs for all economic segments of the community.
- Conservation Element addresses the conservation, development, and use of natural resources.
- Open Space Element details plans and measures for the long-range preservation and conservation of open space lands.
- Noise Element identifies and addresses issues related to noise.
- Safety Element establishes policies and programs to protect the community from risks associated with seismic or geologic hazards, floods, and wildfires.

While the general plan will contain the community's vision for future growth, ~~The California Government Code requires cities and counties to adopt~~ California Law also requires each ~~General P~~plan~~s which must include nine~~ to address the following 7 mandatory ele~~ments and may include others. The mandatory elements are: land use, circulation, housing, conservation, open space, seismic safety, scenic highways, and safety~~:

- *Land Use Element* designates the type, intensity, and general distribution of uses of land.
- *Circulation Element* identifies the general location and extent of existing and proposed major thoroughfares, transportation routes, and other local public utilities and facilities.
- *Housing Element* assesses current and projected housing needs for all economic segments of the community.
- *Conservation Element* addresses the conservation, development, and use of natural resources.
- *Open Space Element* details plans and measures for the long-range preservation and conservation of open-space lands.
- *Noise Element* identifies and addresses issues related to noise.
- *Safety Element* establishes policies and programs to protect the community from risks associated with such things as seismic or geologic hazards, floods, and wildfires.

In addition to these mandatory elements, a city may also include optional elements in its general plan. The City's original General Plan, adopted in 1975, included the following three additional optional components/elements—Fiscal, Environmental Justice, and Sensory Environment—and these have been included in this General Plan (note the Sensory Environment element was been incorporated into the new Visual Resources Element).

4 Adoption of the General Plan

~~Special legislation for newly incorporated cities was passed by the State Legislature, extending the deadline for the General Plan to June 30, 1975. A process was outlined to get maximum citizen participation in the development of the Plan, even though the schedule was very tight. One of the first steps was the appointment by the City Council of a Steering Committee to organize a General Plan Goals Committee. The total Committee involved some 200 citizens who worked together in subcommittees. The Committee submitted a report to the Council which was a statement of goals, objectives, and policy recommendations on the various elements of the general plan. Many technical background reports were completed by staff and consultants. Additionally, the City held public hearings during which citizens were invited to speak on the Plan.~~

~~This Plan has been designed to integrate the elements of a general plan with the required environmental impact report. The Plan will thus serve as policy direction for planning and implementation, an analysis of the impacts of the Plan, and a benchmark to assess future environmental impact reports on projects. The Plan includes the technical background information and analysis of an environmental impact report and the policy recommendations of a general plan. It was intended to eliminate the duplication which would be inherent in two separate documents and to provide as complete information as possible.~~

~~The Guidelines for Implementation of the California Environmental Quality Act of 1970, part of the California Administrative Code, allows for the requirements of an Environmental Impact Report on a general plan to be satisfied by the general plan document, providing: (1) all of the points required to be in an EIR are addressed, and (2) the document contains a special section or a cover sheet identifying where the document addresses each of the points. Such a cover sheet is included in the Appendix.~~

~~This General Plan is not organized into the traditional elements, but is integrated into functional relationships, which eliminates the duplication inherent in traditional plans. Consequently, an additional cover sheet is included in the Appendix to indicate where the mandatory elements are covered.~~

~~The Natural Environment Element was prepared by EDAW, Inc., planning consultants. The Fiscal Analysis was partially prepared by David L. Peterson, legal and economic consultant.~~

~~The purpose of the general plan is to provide a general, comprehensive, and long-range guide for community decision-making. As such, it must reflect the community's goals and have the community's support. Widespread participation in the process is essential. It is for this reason that the General Plan Goals Committee was established. In addition, the process was designed to include several points for public input prior to public hearing.~~

The City's first General Plan was adopted on June 26, 1975, less than 2 years after incorporation. Since its adoption, the General Plan has received only minor amendments. Apart from state-mandated Housing Element updates, the last significant update occurred in 1984 to address the Eastview Annexation.

At its January 12, 2002, meeting, the City Council discussed master plan issues and specifically focused on updating the City's General Plan. The City Council acknowledged that portions of the General Plan needed updating and directed staff to take the initial steps to assist the City Council in determining the direction and extent of the needed update. The City Council expressed that a thorough review of the goals and policies was a necessary first step and that this would help to define the direction and extent of future updating work to be conducted by the Council, staff, and the community. Further, as in the effort to adopt the 1975 General Plan, the City Council expressed the importance of including public input, encouraging the use of local talent within the community, and specifically forming a General Plan Update Steering Committee to assist in the update process. The City Council then determined that one person from each of the following commissions, committees, and organizations within the community (but two persons from the Planning Commission) should be represented on the General Plan Update Steering Committee:

- City's Planning Commission
- City's (former) Recreation and Parks Committee
- City's Finance Advisory Committee
- City's Traffic Committee
- City's (former) Equestrian Committee
- City's Disaster Preparedness Committee
- Council of Homeowners' Association
- Council of Homeowners' Association – Eastview Representative
- Peninsula Seniors
- Peninsula Youth Recreation League Council
- Docents – Los Serenos de Point Vicente
- School District
- Chamber of Commerce
- Palos Verdes Peninsula Land Conservancy

The purpose of the Steering Committee was to review all of the goals and policies of the 1975 General Plan and to make recommendations as to the extent to which such goals and policies needed to be maintained, amended, or eliminated, and whether new goals and policies needed to be added.

Beginning on October 30, 2002, the Steering Committee held a total of 22 public meetings, on an average of once a month. Through the Committee's work, the Council learned that, apart from the need for some textual changes to the goals and policies, as well as changes to the factual information within the Plan, for the most part the goals and policies that were created in 1975 still apply today.

Additionally, in order to assist the City's undertaking of its general plan update, a non-City-sponsored "grass-roots" committee of more than 210 residents formed for the purpose of preparing a "Goals Report" that identified various goals for the City. This Goals Report was provided to each member of the Steering Committee, which also considered it in making the Steering Committee's own review and findings in its report to the City Council.

During the preparation of the updated General Plan, the Planning Commission held 70 public meetings and the City Council held 13 prior to the Council's adoption of the General Plan. Additionally, the Finance Advisory Committee, Traffic Safety Commission, and the Emergency Preparedness Committee all provided input on the Fiscal, Circulation, and Safety Elements, respectively, during public meetings. Prior to each meeting on the General Plan, a public notice was published in the *Peninsula News* and delivered through the City's list-serve email subscribers list.

This update to the General Plan represents the contributions and input made by those volunteer members of the community, as well as Staff.

DRAFT DEFINITIONS
comparison to current General Plan Glossary of Terms
4/26/2018 version

Note: This document compares the proposed Draft Definitions with the current Glossary of Terms section of the General Plan. Changes are shown as follows: **bold underline** text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

DEFINITIONS ~~GLOSSARY OF TERMS~~

Active Landslide: An area presently undergoing downslope movement.

Active Recreation: 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.

Activity Area: A given area within the City for which a particular land use is suited and is so designated.

Ambient Noise: The all-encompassing noise associated with a given environment, usually being a composite of sounds from many sources, near and far.

Amenities: An attractive or desirable feature of a place; anything that adds to ones comfort or convenience; pleasant qualities.

Arterial Street: Main channel for the movement of vehicles and is not intended to be a residential street.

Biotic Resources: All plant and animal organisms, both marine and terrestrial.

Buffer Zone: A zone or area which exhibits a dampening effect between two unlike areas; e.g., open space between commercial areas and residential areas.

Buildout: An area which has achieved its maximum development potential has achieved its buildout.

Coastal Setback Line/Bluff Setback: A boundary established in the discussion starting on Page CO-8. Due to possible risks to human life or property, no development will be allowed to proceed without a detailed engineering and geology study which demonstrates site stability and suitability for development.

Collector Street: Conducts traffic between arterials and sometimes links with other collectors.

Cluster Development: A technique of grouping structures in a given area for the purpose of conserving and creating open space, lowering construction and materials costs, conserving energy, and creating a more secure environment.

Community Noise: Combination of steady state noise (distant traffic flow, neighbor's air conditioner) and the intermittent noises (planes flying overhead, local traffic flow, children yelling, etc.).

Decibel: A unit for measuring the relative loudness of sounds detectable by the human ear.

Density: A term used to represent the measurement of how intensely the land is developed (residential) and refers to the number of dwelling units (d.u.) which occupy a given area of land – generally per acre – and may be expressed as d.u./acre.

Dormant Landslide: An area that have experienced downslope movement in the past, but are not currently active.

Dwelling Unit: A place of residence which contains bathing and cooking facilities for a single family.

Ecosystem: An environmental system in which the existence of that system is dependent on the interrelationship of the plant, animal, and bacterial communities within the system.

Environmental Impact Report (EIR): A detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects.

Extreme Slopes: Slopes of 35% or greater.

Fault: A plane or surface in earth materials along which failure has occurred and materials on opposite sides have moved relative to one another in response to the accumulation of stress in the rocks.

Gross Acreage: The total amount of land devoted to a development inclusive of public rights-of-way (streets, sidewalks, etc.), schools, and parks.

High Slope: Slopes between 25% and 35%.

Housing Mix: The relationship of the various types of dwelling units (single family to multi-family) within a given area.

Hydrology: The science that deals with water movements, surface and subsurface distribution, and the cycle involving evaporation, precipitation, and flow to the sea.

Infrastructure: The man-made support systems on which a community depends (e.g., water, sewerage, energy, communication, and transportation systems).

Kelp Bed: Forests that serve as sanctuaries, nurseries, habitats, and food sources for many specifies of marine organisms.

Load Induced: The associated effects on uses and support systems which would be generated through the development of a proposed activity (e.g., population, commercial activity, etc.).

Local Street: Minor networks that have principal function to provide access to adjoining property.

Mitigation: Includes avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or, compensating for the impact by replacing or providing substitute resources or environments.

Multi-family Residence: Two or more dwelling units located in single structure.

National Historic Preservation Act of 1966: Calls for the preservation of sites, places and structures of national historic significance and sets criteria for entries into the National Register of Historic Places.

Natural Environment/Hazard Areas: Areas of extreme and hazardous physical characteristics (active landslide, sea cliff erosion, and/or slopes of 35% or greater) which are to be maintained as open space for the protection of public health, safety, and welfare. The undeveloped portions of these areas are to remain in their natural state, with only very low intensity uses permitted.

Net Acreage: The total amount of land devoted to a development exclusive of public rights-of-way (streets, sidewalks, etc.), schools and parkland.

Noise: Any loud sound.

Noise Contour: A line on passing through points where the same sound intensity level prevails. Contours form bands of varying width emanating from a noise source.

Non-Landslide: An area where no natural landslides have been identified.

Old Landslide: An area determined to have had past movement and/or identified in the California Department of Conservation's landslide-inventory maps that portray the location of prior failure.

Open Space Land: 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) outdoor recreation, or (3) public health and safety.

Overlay Control District: Areas within the City which possess special natural, social, cultural, or urban features which warrant control of development.

Passive Recreation: Passive recreational areas remain 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.

Planned Unit Development (PUD): PUD refers to a development which has been completely planned by an architect, land planner, or developer which affords him arrangement flexibility not previously available. It implements planning for a diversification of dwelling types and aesthetic variety, while assuring that overall density standards will not be violated. Through various options or combinations of options (grid, cluster, etc.) open to the planner, more efficient use of the land can be made. Large common open areas, integrated land use designed to serve the needs of the residents, lower development costs per unit, and housing for a wider range of income levels are some of the amenities associated with Planned Unit Developments. These can all be achieved through a well designed PUD at a lower cost of construction per unit. Many PUD's are able to offer an amenity such as a lake or golf course as a focal point for the development.

Possible Landslide: An area suspected to be a landslide on the basis of topographic evidence.

Quimby Act: This act (also known as the Park and Land Dedication Act of 1965) allows the local government to impose a fee or require dedication of land or both, to be used for park or recreation purposes only, by an applicant requesting approval of a final subdivision map.

Seismic Safety: Safety measures taken to prevent loss of life and/or property due to natural or man made earthquakes and tremors.

Seismic Zone: Areas which have been divided and categorized according to the impacts which would occur as a result of an earthquake or earth tremor.

Sensitive Habitat: Vegetation communities 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, r local policies or regulations.

Single-family Residence: One dwelling unit which is located in a single structure.

Sound Attenuation: To lessen the negative impacts of sound by inhibiting the transmission of sound and/or absorbing the sound.

Sub-community Areas: Smaller divisions within the City based on common geographical features, location, or access by road system. Also referred to as neighborhood areas.

Subdivision Map Act: Gives local governments authority to regulate and control the design and improvement of subdivisions within their jurisdiction.

Topographic Conditions: Existing conditions on the land surface or a given region, including, but not limited to relief, water features (streams, rivers, lakes) and man made features (grading, etc.).

Transfer of Development Rights (Development Transfer): This process can be used when a municipality designates an area for open space and prohibits development therein. The residential development potential is then transferred to another area or areas where development is feasible.

Landowners in the preserved areas will continue to own their land and many sell their rights to further development to other landowners or builders who wish to develop those areas in which development is feasible.

Under the system, a zoning district is established for preservation of open space in which all development is essentially prohibited. The residential development potential of the zoning district before its open space designation is calculated as follows: For each residential dwelling eliminated in a preservation district, a substituted dwelling is added to a developable district of the community. A development right is created for each dwelling eliminated in the preserved district and is distributed to the landowners. To construct dwellings in developable areas, a development right is necessary along with appropriate zoning.

A builder who proposes to construct at a higher density, based on the new capacity or density resulting from the establishment of the preserved area, must also purchase development rights to equal the increased density and at a price arrived at through the bargaining process of the market place. The continued value or marketability of development rights are insured by adequate incentive zoning in the developable areas.

Urban Activity Area: Areas with Residential, Commercial, Institutional, Recreational, Agricultural, and Infrastructure Facility land use designations.

View: Scene or panorama observed from a given vantage point.

Viewing Corridors: Major circulation roads, and trail networks within the City that afford views of the visual resources.

Viewing Points: Locations at private residences and roadway turnouts along vehicular corridors that afford viewing of visual resources.

Viewing Sites: Larger areas which, due to their physical locations on the Peninsula, provide a significant viewing vantage.

Viewing Stations: Places where people can enjoy the visual resources of Rancho Palos Verdes.

Vistas: Confined view, usually directed toward a dominant element or landmark.

Watersheds: Geographical boundaries of an area that are drained by a common river, stream or network of rivers and streams.

Wildland Fire: Uncontrolled, non-structure fire other than prescribed fires that occur in the wildland area.

DRAFT CIRCULATION ELEMENT
comparison to current General Plan Circulation Element
4/26/2018 version

Note: This document compares the proposed Draft Circulation Element with the current Infrastructure Element of the General Plan. Changes are shown as follows: **bold underline** text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

IV Circulation Element

The primary role of the Circulation Element is to plan the transportation system needed to serve proposed development as defined in the Land Use Element of the City of Rancho Palos Verdes (City) General Plan (General Plan). The Circulation Element also has a role in planning for the future with regard to the provision of infrastructure that services the City. The circulation system affects growth patterns, the environment, and the quality of life of the City's residents and workers. The system ranges from sidewalks to roadways to trails, all providing for the safe, efficient, and sometimes recreational movement of people through the City. The location and nature of circulation system components derives from—and in turn, affects—physical settlement patterns, air quality, plant and animal habitats, noise, energy use, safety, visual appearance, social interaction, and economic activity within the community.

The Circulation Element shows the "general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the Land Use Element" (California Government Code Section 65302(b).) While not all-inclusive, the City Circulation Maps illustrate arterials, collectors, and local streets; bus routes; other public transit routes and bikeways; and trails.

The purpose of this Circulation Element is to present a plan to ensure that utilities and transportation, including public transportation services, are constantly available to permit orderly growth and to promote the public health, safety, and welfare. This Element provides a framework within which individual property owners can plan the development of their property and be assured that basic infrastructure and services are available and adequate. This Element provides an area-wide assessment of the different public transit, services, and utilities for a broader understanding of service provision. Further, it is envisioned that transportation improvements (new or retrofitted) will provide opportunities to improve safety, access, and mobility for all travelers and recognize bicycle, pedestrian, and transit modes as integral elements of the transportation system, thereby using complete street concepts to integrate the needs of all users of the roadway system consistent with the California Complete Streets Act of 2008.

1 Goals

1. ~~It shall be a goal of the City to ensure~~ Ensure adequate public utilities and communications~~s~~ services to all residents, while considering environmental, aesthetic and view impacts. ~~maintaining the quality of the environment.~~

2. ~~It shall be a goal of the City to provide~~ Provide and maintain ~~residents with~~ a safe, ~~and~~ efficient and comprehensive system of roads. ~~, trails and paths.~~ and trails, and to coordinate them with other jurisdictions and agencies.

3. ~~It shall be a goal of the City to encourage the increased~~ Facilitate mobility of residents through ~~the development of~~ an adequate public transportation system with consideration of the City's demographics.

4. Work with other jurisdictions and agencies to ensure that there are adequate storm drain, water systems and sewer systems to serve the residents.

5. Where appropriate, utilize complete street concepts to integrate the needs of all users of the roadway system consistent with the California Complete Streets Act of 2008.

~~The existence of urban man in a given area is normally dependent upon the availability of certain natural and man-made support systems. Natural support systems include air, water, etc., and are discussed in the Natural Environment section of this report. Manmade support systems include domestic water, energy, transportation, communications, sanitation, and flood control. These systems are commonly referred to as the "infrastructure." The facilities and networks which make up the infrastructure are generally considered as the foundations on which activity areas are facilitated and maintained and, in some cases, the primary criteria for the further growth of these activity areas.~~

~~The Rancho Palos Verdes infrastructure is similar in composition to most Southern California communities and consists of the following major divisions:~~

- ~~Resource Systems (water and energy)~~
- ~~Disposal/Recovery Systems (sanitation and flood control)~~
- ~~Communication Systems (broadcast and~~ cable)
- ~~Transportation Systems (vehicular and non-vehicular)~~

2 Policies

2.1 Transportation Systems

~~It is the policy of the City to:~~

1. Design public access into residential areas to control non-local traffic.
2. Require any new developments ~~with new streets~~ or redevelopment to provide ~~adequate right-of-way widths for possible~~ streets wide enough to support the City's future traffic needs ~~to provide for traffic patterns necessary to accommodate future growth needs~~ and to address potential impacts to nearby intersections resulting from such developments.
3. Encourage synchronization and coordination of traffic signals along arterials.
4. ~~Prohibit~~ Future residential developments shall provide direct access to roadways other than arterials. ~~from providing direct access (driveways) from individual units to arterials.~~

5. ~~Encourage, together~~ Work with other Peninsula cities and/or regional agencies ~~Southern California Rapid Transit District~~ to improve public transportation on the Peninsula and to provide access to other destinations in the region.
6. ~~Explore the establishment of an independent bus system or contract for service with an independent municipal transportation agency, if RTD service remains unsatisfactory.~~
7. ~~Design path and trail networks to reflect both a local and retaional demand,~~ Implement the Trail Network Plan to meet the recreational needs of the community, while maintaining the unique character of the Peninsula.
8. ~~Require, wherever practical, all path and trail networks to be in separate rights-of-way.~~
9. Coordinate and cooperate with ~~neighboring jurisdictions to develop adjacent cities, the County and other appropriate agencies and organizations in the development of path and trail~~ networks ~~is encouraged.~~
10. Prohibit motorized vehicles from using ~~designated~~ paths and trails, except ~~in the case of~~ for disabled access, emergency or maintenance vehicles.
11. Require that all new developments, where appropriate, establish ~~walkway, bikeway and equestrian systems~~ paths and trails ~~where appropriate.~~
12. ~~Further investigate possible~~ Seek funding ~~sources~~ for acquisition, development and maintenance of ~~paths and~~ trails.
13. ~~Make use, where appropriate, of~~ Implement trails on existing rights-of-way and easements in accordance with the Trails Network Plan. Where applicable, consideration should be given to adding cross-walk push-buttons at proper equestrian height levels where equestrian trails traverse signalized intersections.
14. ~~Provide~~ Include safety measures ~~on~~ such as the separation of uses, fences, signage, etc., in the design and construction of paths and trails ~~particularly on bluffs and ridgelines, and include such measrues as key design factors.~~
15. ~~Encourage the R.T.D. to provide bike racks (or similar) on buses.~~
16. Encourage the ~~establishment of a program designed to educate users and non users of path and trial networks in terms of safety and courtesy~~ safe and courteous use of trails by educating users as appropriate.
17. Ensure public access to the Rancho Palos Verdes shoreline.
18. Explore ~~alternative methods of implementation for the stables proposed in this Plan~~ options to develop a City equestrian park.
19. ~~Insure public access to the Rancho Palos Verdes shoreline.~~
20. ~~Explore alternative methods of implementation for the stables proposed in the Plan.~~
21. Require adequate off-street parking for all existing and future development.
22. ~~Investigate current and future parking characteristics and~~ Develop appropriate ordinances ~~which to~~ regulate ~~overnight~~ street parking, parking on narrow residential streets, and parking of recreational, commercial and/or oversized vehicles, ~~etc.~~
23. ~~Require, wherever possible, pedestrian access in new developments for children.~~ Coordinate and cooperate with school districts, and parent and community groups to provide safe and proximate access to schools.
24. Require detailed analysis for all proposals to convert local public roads into private streets or retain new local roads as private property. Conditions for establishing private streets should include: (a) The road is a truly local road and is not needed as a ~~thoroughfare in the~~

collector or ~~and~~ arterial road ~~network, (b) An assessment district is established which will allow the district to levy taxes or legally enforceable assessments for road maintenance, (c)~~ (b) Provisions are made to guarantee the future ~~proper~~ up-keep of the streets, ~~(d)~~ (c) Dedication of non-vehicular easements may be required.

25. Reflect the elements of the City's Trails Network Plan in appropriate City processes and procedures. For each trail category, the City's action should include:
    a. Category I: (Definition: These trails are defined as existing, dedicated trails, that meet the City's trail standards. Inspect and maintain all existing trails on a regular basis.
    b. Category II: (Definition: These trails are defined as proposed trails and trail segments which cross undeveloped privately owned land that is zoned as being developable). These trails and trail segments should be implemented when the respective parcels of land are developed. Consider these trails, or alternate approaches to provide equivalent access, in all new developments.
    c. Category III: (Definition: These trails are defined as proposed trails and trail segments which are located on existing trail easements, City property, or street rights-of-way and which require implementation or improvements). Require consideration by the Department of Public Works or the Department of Recreation and Parks of these trails or alternate approaches to provide access, prior to bid solicitation for projects.
    d. Category IV: (Definition: These trails are defined as proposed trails and trail segments which cross privately-owned land designated as Open Space or Open Space Hazard, or on land owned by a public utility or public agency). These trails and trail segments involve the acquisition of easements, and may require implementation or improvements. Implement these trails by soliciting voluntary offers to dedicate easements. Where appropriate, the City should seek the dedication of an easement as a mitigation measure for significant property improvements.
    e. Category V: (Definition: These trails are defined as proposed trails which would primarily benefit neighborhood residents, and which cross privately-owned land). Implement these trails only upon initiation by affected property owners or community groups. The City shall provide appropriate support to the property owners offering easements.
26. If City land is sold, any appropriate public access easement, restriction, reservation and/or right of way should be recorded.
27. Descriptions of relevant trails in the Trails Network Plan should be provided to potential applicants when inquiries for development are first made.
28. Design and construct new trails in accordance with the Trails Network Plan and other National, State and local standards, where appropriate.
    a. When constructing paths and trails, require the use of construction techniques that minimize the impact on the environment.
    b. Where appropriate, align trails to maximize access to scenic resources.
    c. Include the bikeways in the Conceptual Bikeways Plan or alternate approaches to provide access, prior to approval of proposals for land development through a subdivision of land application and/or conditional use permit application.
    d. Consideration of the inclusion of bikeways in the Conceptual Bikeways Plan, or alternate approaches to provide access during project design is required in all Department of Public Works or Department of Recreation and Parks projects.

2.2 Infrastructure Systems Policies

~~It is the policy of the City to:~~

29. ~~Explore the possibility of eliminating major or critical~~ Discourage the installation or extension of any infrastructure ~~facilities and networks which serve other parts of the City from landslides~~ component into any area known to be hazardous unless appropriate liability safeguards (such as geological hazard abatement districts) are in place and adequate mitigation measures are incorporated into the design.
30. ~~Prohibit the extension of any component into any area known to be unstable or of major environmental significance~~
31. ~~Consider, at such time that a service or services do not adequately meet the needs of Rancho Palos Verdes, which utilities might better be a function of the City or other public agency.~~
32. ~~Underground all new power lines and communications cables and implement programs to place existing line and cables underground.~~
33. ~~Continue to encourage the establishment of undergrounding assessment districts by homeowners, in areas of existing overhead lines.~~
34. ~~Investigate funding sources to be used in local undergrounding programs for areas of existing overhead lines.~~
35. Allow new development ~~to~~ only ~~occur~~ where adequate infrastructure systems can reasonably be provided.
36. Require adequate landscaping or buffering techniques for all new and existing facilities and networks, in order to reduce the visual impact of infrastructure facilities and networks.

2.3 Resource System Policies

~~It is the policy of the City to:~~

37. ~~Cooperate with California Water Service Company and the Los Angeles County Fire Department to improve~~ Ensure that the ~~water~~ resource companies provides all areas of the City with adequate ~~water~~ service ~~(pressure and flow)~~ including adequate back-up and growth capabilities.
38. Encourage the ~~investigation and~~ use of alternative water and energy ~~generation~~ sources.
39. Promote, practice and encourage workable energy and water conservation techniques.
40. Review any proposed development, major new resource uses, or significant changes to resource system for impacts to the surrounding neighborhood and community.
41. Encourage the use of recycled/reclaimed water in the irrigation of large open space areas including golf courses, open space areas owned by Homeowners Associations, and City Parks and ball fields.
42. Encourage the California Water Service Company to complete a Conservation Plan that provides for the availability of a recycled water system in the City.
43. Underground all new power lines and communications cables and to implement programs to place existing lines and cables underground where feasible.
44. Encourage the establishment of undergrounding assessment districts by homeowners, in areas of existing overhead lines.
45. Investigate funding sources to be used in local undergrounding programs for areas of existing overhead lines.

2.4 Disposal/Recovery System

~~Policies It is the policy of the~~ City to:

46. ~~Take an active interest in~~ Encourage waste ~~management~~ reduction and recycling programs ~~and offer assistance to groups attempting to offer solutions to the problem waste~~.
47. Require all new developments to provide sanitary sewers i~~n all major new developments~~ connected to the County Sanitation District's system.
48. ~~Encourage the retention of all remaining natural watercourses in their natural state.~~
49. ~~Require develops to install necessary flood control devise in order to mitigate downstream flood hazard induced by proposed upstream development~~.
50. ~~Require that all flood control/natural water source interfaces and systems be treated so that erosion will be held to a minimum.~~
51. ~~Encourage the investigation of methods to reduce pollution impacts generated by development runoff.~~
52. ~~Encourage the Sanitation District to upgrade all wastewater discharged from the While Point outfalls to a minimum of secondary treatment.~~
53. Require the ~~installation of~~ connection to the Los Angeles County Sanitation District's sewers in existing development if alternative sewerage systems endanger public health, safety and welfare.

2.5 Flood Control/Storm Drain Systems Policies

~~It is the policy of the City to:~~

54. Encourage the retention of all remaining natural watercourses in their natural state.
55. Require developers to install and develop a mechanism for ongoing maintenance of necessary flood control devices in order to mitigate downstream flood hazard induced by proposed upstream developments.
56. Require that all flood control/natural water source interfaces and systems minimize erosion.
57. Promote compliance with regulations controlling pollution impacts generated by development runoff.
58. Promote compliance with regulations controlling discharge of wastewater into the ocean.

2.6 Communication Systems

~~Policies It is the policy of the~~ City to:

59. Investigate ~~the potential of~~ alternative cable communications systems ~~as a source~~ that take advantage of new technology, which could disseminate information and issues to communities and/or the City as a whole.
60. ~~Encourage~~ Require the underground installation of cable communications ~~network in all new developments~~.
61. It shall be a policy of the City to balance the need to accommodate wireless communications coverage in the community with the need to protect and maintain the quality of the environment for residents. All new proposals to construct wireless communication facilities shall be reviewed using guidelines adopted and kept current by the Planning Commission and where applicable considering CC&R's. Said guidelines shall balance public and private costs and

benefits to the greatest reasonable extent, and encourage co-location of facilities and the use of evolving wireless communication technologies to minimize impacts.

3 Transportation Systems

The transportation component of the City's infrastructure consists of integrated networks and modes which provide for access and the conveyance of people and goods to, from, and within a given area. The varied functions, widespread usage, and conspicuous visibility make this component the most dominant and complex component of the entire infrastructure. Because of functional complexity and diversity of impacts, the transportation component must be looked at differently from the other infrastructure components. For example, other components are discussed primarily from the standpoint of the network, with little mention of distribution mediums, whereas the character of the transportation component requires that equal consideration be given to both networks and their associated modes alike. Furthermore, some of the transportation networks and modes, unlike other infrastructure components, overlap physically as well as functionally.

The transportation infrastructure has been divided into three major elements. Each element is discussed in terms of the individual networks which make up an element and the modes which utilize these networks. The three elements include:

- Vehicular Networks
- Public Transportation
- Pedestrian and Bicycle p~~P~~ath and Trail Networks

It should be noted that, due to the nature of transportation systems, much of the subsequent discussion deals with the Palos Verdes ~~Peninsula~~ as a whole, rather than Rancho Palos Verdes alone.

3.1 Vehicular Networks

City ~~Rancho Palos Verdes~~ residents, like most Southern Californians, rely on the automobile as the principal mode of transportation. ~~This overwhelming dependence on the automobile has created a web of roads which currently covers large areas of the Peninsula and represents the major element in the locomotion system. Furthermore, evidence suggests that, while efforts are currently being made to reduce the dependence on the automobile, little or no charge is expected to occur in respect to the need for vehicular networks in the foreseeable future.~~ The vehicular network is divided into four basic classifications: freeways, arterials, collectors and locals. While terminology may vary for each of the four Peninsula cities, analysis shows that the functional differences rarely vary.

~~Of particular concern in t~~ The development of this Plan ~~has been its~~ have potential effects in the City and on adjacent and outlying communities. It was recognized at the outset of the planning process that the cumulative effect of Rancho Palos Verdes traffic on roads outside this jurisdiction is of mutual interest with ~~in~~ respect to congestion and pollution. Therefore, the proposals and recommendations made herein reflect this concern.

Freeways

~~Currently, there~~ There are no freeways on the Peninsula now and is not likely there ever will be in the future.~~, nor does it appear within the realm of possibility that any will ever exist~~. Peninsula residents, however, have access to and use the extensive freeway network which is ~~so~~ such an important ~~much a~~ part of travel in Southern California. ~~Both the~~ The Harbor Freeway (I-110) and San Diego Freeway (I-405) act as principal links to commuters and to distant points.

~~The State freeway plan proposes three new freeway extensions and/or segments for the South Bay area (Voorhees, pg. 47). They include:~~

- ~~The El Segundo-Norwalk Freeway, extending east/west.~~
- ~~The extension of the Artesia Freeway (east/west).~~
- ~~The Route 107 Freeway, extending north/south from the San Diego Freeway to Pacific Coast Highway.~~

~~The final outcome of the proposals is tenuous at best and therefore were not considered to be of major importance to the development of this Plan.~~

Although no attempt is made here to provide a detailed assessment of the impact of Rancho Palos Verdes' residents to the freeway network, the circulation element will describe how the Rancho Palos Verdes transportation network connects to the freeway system. ~~or the networks' combined impact on the Rancho Palos Verdes environment, it can be stated with a reasonable amount of certainty that each has at least a minor level of impact on the other. For example, the Peninsula residents who use the freeway network contribute some degree to congestion and smog which plagues Southern California. Likewise, the overall use of the Southern California freeway network contributes to air pollution, which in turn affects the air quality of the Peninsula. Both the congestion of freeways and deterioration of air quality can be mitigated through the development and use of an efficient public transportation system, carpooling techniques, and certain economic disincentives (gas tax, mileage surcharge, depletion of fossil fuels).~~

Arterial, Collector, and Local Streets

Of all the infrastructure components, the network of streets and associated components (parking) are the most dominant and complex of all service oriented systems. Rancho Palos Verdes, like all of Southern California, is almost totally dependent upon the system of roads on which our private and service vehicles function.

The most efficient street system is one that offers a variety of streets, each having its own functional characteristics. The classifications of such a street system are based on a functional hierarchy, often defined by little more than width, type of pavement, and traffic volume. The result of developing a street system purely on standardized design criteria would have a severe impact upon the unique and sensitive environments of the Peninsula and would limit the flexibility of design which can reflect the varied character of the cities and neighborhoods. The following are the functional characteristics assigned to the three street classifications:

Arterial – The arterial street is the major street within the Peninsula hierarchy. It is the main channel for the movement of vehicles and is not intended to be a residential street; however, some older arterials do provide direct access to residential units (e.g., Palos Verdes Drive East and West). Arterials are typically characterized by both two-lane and four-lane roadways, typically with a raised or painted median. An arterial carries traffic through the community and collects traffic from collector roads, provides connections with other arterials and may eventually link-up with major highways.

Within the Rancho Palos Verdes City limits, the following streets function as arterials:

- Palos Verdes Drive South;
- Palos Verdes Drive East;
- Palos Verdes Drive West;
- Hawthorne Boulevard
- Miraleste Drive;
- Crest Road;
- Silver Spur Road; and,
- Western Avenue
- Crenshaw Boulevard

Collector – The collector street functions to conduct traffic between arterials and sometimes links with other collectors. It is a primary network within residential areas and can function well in a commercial area.

Within the Rancho Palos Verdes City limits, the following streets function as collectors:

- Indian Peak;
- Ridgegate Drive;
- Granvia Altamira;
- Crest Road;
- Crestridge Road; and
- Montemalaga Drive.

Local – Local streets are minor networks~~, whose basic function is to provide access to dwelling units.~~ that have the principal function to provide access to adjoining property. Local streets can be designed so as to discourage through traffic. ~~The design can reflect the individuality of a neighborhood.~~ They are intended to be low volume and low speed facilities, characterized by two-lane undivided roadways with frequent driveway access. All streets in the City not designated as arterial or collectors are defined as local streets.

Existing Conditions

The character of the existing street system (See Figure 1 – Street System) on the Peninsula is a result of several factors. The first, and perhaps the most important, is geographical location. The fact

that Rancho Palos Verdes is a is located on a peninsula has resulted in a situation that discourages most through traffic, thereby reducing the need for a major highway or freeway. Second, the early road system was designed to fulfill the needs of an area of semi-rural character. Evidence of this design is still found on the Palos Verdes Drives loop. Third, recent (pre-incorporation) development trends encouraged the development of new roads to maximum potential. In addition, the demand for the new roads, which supported new developments, was often satisfied with little regard to the Peninsula's City's existing character, community desires, or impact on neighboring cities.

Traffic impacts are determined by assessing traffic volumes at intersections and roadway segments and assigning a level of service (LOS). Level of service is a method of describing the operating efficiency of a roadway or intersection. Typically, it is described on a scale from A to F, with F being the most congested and A representing free-flow conditions. Currently in the City, intersections and roadways are considered impacted if they exceed LOS D; thus, LOS E and F are unacceptable levels during the morning peak hours and/or the afternoon peak hours. An A detailed analysis of the existing street system within Rancho Palos Verdes was performed on May 31, 2017, and is summarized in this document (Translutions, Inc. 2017). Congestion was measured at 30 of the highest-traffic-level intersections, and the results show that 25 of 30 are operating at acceptable levels. The results indicates indicate that, for the most part, the City is adequately served. There are problem areas where certain intersections and roadway segments are currently operating at LOS E and unacceptable LOS F).

The following four intersections are currently operating at unacceptable levels of service:

- Via Rivera at Hawthorne Boulevard;
- Forrestal Drive - Trump National Drive at Palos Verdes Drive South;
- Palos Verdes Drive East at Palos Verdes Drive South;
- Palos Verdes Drive East at Via Canada; and
- Palos Verdes Drive East at Miraleste Drive.

A total of 36 roadway segments were studied in the traffic supporting the General Plan. Of the 36 roadway segments assessed, 24 were found to be operating at LOS A, one is operating at LOS B, 3 are operating at LOS C, 3 are operating at LOS D. The following 5 roadway segments are currently operating at an unacceptable level of service (LOS E & F):

- Crenshaw Boulevard from the northern City limit to Indian Peak Road;
- Western Avenue from the northern City limit to Delasonde Drive;
- Western Avenue from Delasonde Drive and Trudie Drive; and
- Western Avenue from Trudie Drive to the southern City limits.

Future Conditions

The future conditions of the intersection and roadway segments are estimated by taking the existing conditions information described above and adding the traffic projected from future developments. The future traffic growth is anticipated to cause negative impacts. However, planned roadway and intersection improvements can mitigate the impacts on the roadway system to maintain an adequate level of service. Traffic growth will come from expansion of existing houses and businesses, buildout of the remaining 439 vacant developable parcels (436 of which are zoned single-family residential) in the City, as well as visitors from outside the City. The 439 vacant parcels include many vacant parcels in the Portuguese Bend area. Although the Portuguese Bend area is currently under a building moratorium resulting from the landslide

situation, this area contains over half of the City's identified vacant lots. As such, only for purposes of conservatively estimating the maximum potential traffic growth at full buildout of the City, the traffic growth analysis assumes that the Portuguese Bend area may be developed at some time in the future. Additionally, a list was compiled of all pending projects in the City of Rancho Palos Verdes, as well as in the City of Rolling Hills Estates and the City of Los Angeles. These pending projects were included in the traffic growth analysis in order to maximize the potential future conditions resulting from buildout.

The future growth analysis also included planned roadway and intersection improvements. These improvements could include new traffic signals at certain intersections, driveway realignments, new right- and/or left-turn pockets or modifications to existing turn pockets, new medians or modifications to existing medians, etc. Other improvements would come from mitigation measures required by future development projects. In keeping with the goals of the community as expressed in the original General Plan, no new arterials or collectors have been constructed and none have been planned.

There are 50 private streets in the City of Rancho Palos Verdes. The design and maintenance of private streets is not the responsibility of the City; therefore, these streets may or may not meet accepted design standards, and in some cases are not in keeping with customary maintenance standards. The private streets have not been included in the growth analysis, but the traffic resulting from those streets has been included. The overall conclusion of the future growth analysis is that the impacts of traffic growth due to ultimate buildout can be mitigated with planned improvements to maintain adequate functioning of the street system. Other improvements would come from mitigation measures required by future development projects. Incorporating improvements by buildout year 2035 will help mitigate the increase traffic volumes resulting from ultimate buildout.

~~There are problem areas; however, few reflect the capabilities of the street system to handle existing traffic demands. Recent traffic counts (County of Los Angeles) reveal three street segments within the City that are approaching estimated peak hour capacities (see Table 11). They are: Palos Verdes Drive South (w/o Palos Verdes Drive East), Hawthorne Boulevard (w/o Indian Peak Road), and Miraleste Drive (n/o Via Colinita). Palos Verdes Drive South is primarily impacted by heavy weekend traffic, whereas the Hawthorne and Miraleste segments are affected by rush hour traffic on the weekdays. Other problems which exist, and thereby affect traffic flow, are related to the deterioration of certain road segments, inadequate design; and modal conflicts. Examples of these problems include:~~

~~*Deterioration* – The most obvious illustration of road deterioration is found on Palos Verdes Drive South, in the Portuguese Bend slide area. Despite unrelenting maintenance, earth movement has caused the roadway to be distorted, warped, and broken. The adverse road conditions found in this area impede smooth flowing traffic and are viewed as traffic safety hazards. From time to time, other areas of deterioration may occur; however, most are repaired immediately if it is determined that safety or flow is affected.~~

~~*Design* – Inadequate street design includes poorly designed intersections, insufficient width, poor visibility, and inadequate control devices. The intersection of Palos Verdes Drive East and Palos Verdes Drive South/25th Street is an area which typifies this problem. Poor intersection design has resulted in traffic flow and safety problems.~~

~~*Modal conflicts* – One of the most significant problems is that of the conflicts which arise due to various transportation modes (including pedestrians) using the same limited space. The conflicts which most often occur are between motorists – pedestrian, motorist – bicyclists, and pedestrian – bicyclists. Certain areas of the City also experience conflicts between equestrians and motorists (primarily on the East side).~~

~~Visual appearance is also recognized as a problem; however, this factor rarely, if ever, affects traffic flow or safety. Currently several major streets within the City are unattractive and bland asphalt corridors. An example of the sterile quality of many streets is exemplified by certain segments of Hawthorne Boulevard and Crenshaw Boulevard. (Landscaping techniques for streets and other activities will be more thoroughly discussed in a subsequent document: Urban Design.)~~

~~The street system on the Peninsula as a whole functions adequately during normal traffic hours, however some are currently operating at, near, or over estimated peak hour capacity (see Table 11). Palos Verdes Drive North and associated intersections (at Hawthorne Boulevard, Silver Spur Road, Crenshaw Boulevard, Western Avenue, and Palos Verdes Drives West and East) are the most heavily impacted. Palos Verdes Drive North from approximately Silver Spur Road to Palos Verdes Drive East is considered to be a "capacity-deficient arterial" based on a recent transportation study prepared for the South Bay Corridor Study Steering Committee by Voorhees and Associates (pg. 34). The City of Rolling Hills Estates, knowing the existing congestion problems, has proposed that Palos Verdes Drive North be improved to absorb existing and future traffic. Palos Verdes Drive West, within Palos Verdes Estates, is also an area of concern. Between Bluff Cove and Malaga Cove, Palos Verdes Drive West is a winding two-lane road which acts as a major ingress/egress route for Rancho Palos Verdes. There are plans to increase traffic capacity of the triangular intersection at Palos Verdes Drive North, and thereby improve traffic flow; however, these plans do not include the major portion of the two-lane segment.~~
~~Peninsula Center is a sub-regional scale commercial center located in the City of Rolling Hills Estates. Although the Center is in Rolling Hills Estates, portions of four streets which serve as major ingress-egress points are within the jurisdiction of Rancho Palos Verdes. At its present stage of development (approximately 50%), the level of traffic which is generated by the Center is not beyond the estimated capacities of the affected roads. Traffic analyses indicate that Hawthorne Boulevard is the street most heavily impacted by the Center. At full development, however, the Center is expected to generate significant traffic increases which will heavily impact adjacent streets. Similarly, to the southwest of the Center lies a part of Rolling Hills Estates with a different character, but which is also dependent on Rancho Palos Verdes roads for major access. The area is principally residential (existing and proposed), with a scientific research center of approximately 40 acres located at the southern-most limits. The streets immediately adjacent to the area are currently functioning adequately throughout all periods of the day. When present and future traffic generating factors are combined, however, the streets may become impacted.~~

~~Beyond the Peninsula, the area generally referred to as the South Bay (Redondo Beach, Torrance, Lomita, Hermosa Beach, portions of Los Angeles City and County, etc.) has many streets which are currently nearing, equaling, or exceeding traffic capacities. The capacity-deficient arterials which are of major concern to this analysis include: Pacific Coast Highway, Crenshaw Boulevard, Hawthorne Boulevard, Gaffey Street, and Palos Verdes Boulevard (Voorhees, pg. 34). Aware of the serious nature~~

of traffic problems, many South Bay cities have proposed new roads and/or more efficient control devices to alleviate congestion. The street most heavily impacted by Peninsula generated traffic lie almost totally within Torrance and the San Pedro area. The Circulation Element of the Torrance Comprehensive General Plan (August, 1974) calls for the development of new streets and the upgrading of some existing streets. Analysis suggests, however, that while these problems will relieve the internal street system of Torrance, only minor beneficial effects will result on those streets most heavily impacted by Peninsula-generated traffic. Discussions with representatives of Los Angeles City's Community Planning Division (San Pedro) indicate no major street proposals are pending which would significantly change traffic in the San Pedro area.

Based on community goals, analyses of existing traffic data, and a review of related plans and proposals, the following two factors emerged as significant land use and transportation planning criteria (as they specifically pertain to the vehicular networks portion of the Transportation Section):

- Preservation of a unique semi-rural character is desired and can partially be achieved through the development of a flexible system of roads, rather than a standardized system.
- The impact of a greatly increased population could be devastating to traffic flow on specific major streets on the Peninsula and South Bay.

An analysis of such factors as existing land use and circulation, proposed land use, and projected population, coupled with the goals of the community, has resulted in a vehicular network which calls for no new arterials or collectors. Depending upon future development trends and subdivision techniques, additional collectors may be added to the Plan. No rights-of-way acquisition costs are anticipated.

Listed below are the arterial streets. Some segments are outside the jurisdictional boundaries of Rancho Palos Verdes; however, they are of integral importance to the Peninsula network (listed in alphabetical order).

- Crenshaw Boulevard (north/south arterial, from Crest Road northward)
- Crest Road (east/west arterial from Hawthorne Boulevard to Crenshaw Boulevard)
- Hawthorne Boulevard (north/south arterial from Palos Verdes Drive West, northward)
- Highridge Road (north/south arterial from Hawthorne Boulevard to Crest Road)
- Miraleste Drive/9th Street (north/south arterial from Palos Verdes Drive East to Western Avenue)
- Palos Verdes Drive East (north/south arterial from Palos Verdes Drive South to Palos Verdes Drive North)
- Palos Verdes Drive North (east/west arterial from Palos Verdes Drive West to Palos Verdes Drive East)
- Palos Verdes Drive South/25th Street (east/west arterial from Palos Verdes West, eastward)
- Palos Verdes Drive West (north/south arterial from Palos Verdes Drive North to Palos Verdes Drive South)
- Silver Spur Road (north/south arterial from Hawthorne Boulevard to Crenshaw Boulevard)

~~Within the City of Rancho Palos Verdes, the following streets serve as collectors. Some segments are not within the jurisdiction of Rancho Palos Verdes; however they are listed as continuous segments.~~

- ~~Crest Road (east/west collector from Crenshaw Boulevard to Palos Verdes Drive East. A large section of Crest Road is a private, gated road located within the city of Rolling Hills.)~~
- ~~Ridgegate Drive and Granvia Altamira (north/south collector from Highridge Road northward)~~
- ~~Indian Peak Road (north/south commercial collector from Crenshaw Boulevard to Hawthorne Boulevard~~
- ~~Montemalaga Drive (east/west collector from Silver Spur Road westward)~~
- ~~Silver Spur Road (north/south collector from Hawthorne Boulevard to Palo Verdes Drive North)~~

~~Although local streets are not listed, all are recognized by this Plan. Generally speaking most local streets met specifications set by the City and are in good condition.~~

~~Presently there are 49 private streets within the City of Rancho Palos Verdes. The design and maintenance of private streets is not the responsibility of the City, and therefore these streets may or may not meet accepted design standards, and in some cases are not in keeping with customary maintenance standards. Private streets generally result from two actions. The first and most frequently used method of initiating private streets is through the initial development process. Under this method, the streets are developed as part of a subdivision; however, they are not dedicated to the City as public rights-of-way, but rather remain the property of the homeowners. The second method is through a relatively complex conversion technique. Primarily generated by community desire, converting a public street to a private street (and vice versa) is subject to detailed examination and must be approved by the City Council.~~

Effects of Landslides

The Portuguese Bend Landslide impacts the City's circulation system along a 1-mile segment of Palos Verdes Drive South. Constant earth movement has resulted in this segment of Palos Verdes Drive South becoming distorted, warped, and broken, which impacts the smooth flow of traffic through this area of the City. However, the City continuously repairs and maintains this segment to ensure a safe flow of traffic.

The South Shores Landslide, which is in the City of Los Angeles, impacts Palos Verdes Drive South at the City's border. During rainstorms, debris from this landslide washes down the canyon and causes an overflow at the inlet structure adjacent to the street near the City's border, resulting in flooding and subsequent temporary road closures. The City of Rancho Palos Verdes continuously works with the City of Los Angeles to respond quickly to these flood situations so that the flow of traffic is restored in a timely manner.

Farther north of the inlet structure within the South Shores Landslide area is San Ramon Canyon. The erosion of the canyon has accelerated dramatically since the 2005 storm events, which resulted in a federal disaster declaration. Geologists and engineers have concluded that the instability of the area and the erosion of the canyon's streambed and bank have the probability of causing complete roadway failure for both Palos Verdes Drive East and Palos Verdes Drive South. To address the possible roadway failure resulting from the instability in San Ramon Canyon, the City completed its largest and most expensive ($15.5 million) public works project in 2014: a tunneled drainage system that diverts water from San Ramon Canyon to the Ocean.

Table 11 is an analysis of present traffic volumes (Los Angeles County) and projected traffic volumes for selected locations on the Peninsula. The traffic projections were derived through a Rancho Palos Verdes staff analysis which is intended to illustrate the impact of the General Plan proposals on selected streets. The first part consists of existing and projected traffic data at/on a cordon line drawn along Palos Verdes Drive North and Western Avenue. The second part is an analysis of selected streets within Rancho Palos Verdes which were determined to be of major concern to existing and future traffic flow. The capacities are based on the Los Angeles County Road Department standard for service level "C," which is considered suitable for design practice.

On a Peninsula-wide basis, the streets most heavily impacted by the proposals in this Plan are expected to be three streets just inside the cordon line. Based on traffic projections, Palos Verdes Drive East (s/o Palos Verdes Drive North), Palos Verdes Drive West (w/o Palos Verdes Drive North) and Silver Spur Road (s/o Palos Verdes Drive North) may exceed estimated capacity at peak hour. Furthermore, projections indicate that the following locations will approach or equal peak hour capacities: Palos Verdes Drive North (w/o Western Avenue), Miraleste Drive/9th Street (w/o Western Avenue), Palos Verdes Drive North (e/o Palos Verdes Drive East), Palos Verdes Drive North (w/o Hawthorne Boulevard), Silver Spur Road (n/o Montemalaga Drive), and Hawthorne Boulevard (w/o Indian Peak).

As an auxiliary function of the transportation system, the parking of vehicles is essential. Parking can be provided through variations of two basic methods. On-street parking generally includes the use of one or both sides of the street and/or the use of parking bays. Off-street parking includes lots and structures (above and below grade – garages, ports, and ramp structures). An analysis of the various parking techniques reveals that, while on-street parking is normally less expensive and sometimes more convenient, off-street parking is generally more desirable due to lessening of adverse visual impacts, traffic congestion, and safety hazards. The City currently has no major parking problems, although some areas do experience adverse conditions from time to time (e.g., streets adjacent to Rolling Hills High School, at Rancho Palos Verdes Park, and on Palos Verdes Drives West and South). No significant parking problems are anticipated as a result of this Plan; however, as part of the Specific Plan for the coastal area, careful attention should be given to potential problems.

Directly associated with the issue of parking is that of the accommodation of trailers and other special purpose/limited use vehicles (recreational vehicles). The parking of recreational vehicles is a complex issue that grows continuously. Traditionally, recreational vehicles have been parked either on the street or on the property of owners (front yards, side yards, rear yards and driveways). More recently, due to increasing popularity, specific recreational storage and maintenance areas have been established by developers and cities. Currently, within the City, there are no major problems related to recreational vehicle storage, but existing scattered visual clutter and safety impacts (fire hazard and emergency access) multiply with every new recreational vehicle added, and could conceivably generate significant problems.

The impact that the roadway system and associated modes have on the environment is probably only second to the placement of structures on the land. Environmental impacts fall into 2 main categories and are discussed more specifically below, as are possible mitigating measures.

~~Relation to Air Quality~~

~~Air pollution on a local level is almost entirely induced by vehicles using Peninsula streets, and, although various characteristics allow for relatively good air quality, the responsibility to southland neighbors cannot be overlooked. There are various methods which will assist in the reduction of air pollution. One method includes the development of more efficient public transportation network. Another is to avoid the unnecessary installation of traffic lights, and, where they are needed, the development of efficient timing schedules.~~

~~Relation to Noise~~

~~Excessive noise is an adverse impact which is difficult to mitigate except at the source, which, in the case of vehicles, is extremely difficult to accomplish at the local level. There are three techniques which can be implemented at the local level. The first and perhaps the easiest to implement on existing roads is the use of landscaping techniques (e.g., berms and dense foliage). Air space also helps attenuate noise; therefore, development should take place at reasonable setbacks from roadways, particularly arterials. The elimination of frequent and unnecessary stops reduces noise caused by accelerating traffic. (See Noise section.)~~

3.2 Public Transportation

The Los Angeles metropolitan area has one of the most extensive and complex auto-oriented networks within any highly urbanized area in the world. ~~This, however, has very often been accomplished at the expense of certain segments of the population, the environment, and the economy. Needless to say, the Los Angeles metropolitan area's dependence upon the automobile has resulted in a seriously out-of-balance transportation system. The Palos Verdes Peninsula is characteristic of this unbalanced locomotion system and, as studies have indicated, perhaps to a greater degree than other areas. It is interesting to note that plans for the original City of Palos Verdes Estates called for an extensive rail system; however, the idea was later abandoned.~~ Rancho Palos Verdes lies at the periphery of the regional transportation system. Regional public bus transit service is provided to the City of Rancho Palos Verdes by the Los Angeles County Metropolitan Transportation Authority (LACMTA) and the Los Angeles Department of Transportation (LADOT). Both providers provide fixed route transit service lines with numerous bus stops within the City of Rancho Palos Verdes. (See Figure 2 – Public Transit).

Palos Verdes Peninsula Transit Authority provides fixed-route and dial-a-ride services on the Peninsula. The fixed-route service includes nine routes that service the City and the greater Peninsula, offering riders a stable, reliable, and continuous mode of transportation. These routes offer frequent drop-off/pick-up stops at a variety of locations along major arterials, as well as all schools, libraries, and shopping centers. Specific bus lines also offer transportation to bus and train stations located outside of the City. This provides a well-connected and multi-modal transportation system for improved connectivity. The dial-a-ride service goes off the Peninsula for medical purposes. The service goes to all hospitals, medical buildings, and doctors' offices in Torrance, Harbor City, San Pedro, and Redondo Beach.

~~An analysis of existing public transportation activities on the Peninsula verifies previous studies which suggest the inadequacy of service. Currently, the Peninsula is served by very limited bus service (standard and "subscription"), taxi cabs, and the Thumb Taxi. The Southern California Rapid Transit District has one year-round line which runs on a limited schedule from the Marineland and Peninsula~~

~~Center areas to downtown Los Angeles. Also provided by the Rapid Transit District is a service known as the Rapid Transit District "Personalizer" Subscription Service which allows users to buy a guaranteed seat on a bus which runs from the Peninsula Center and adjacent points to the Los Angeles core area.~~

~~Taxi service is available on the Peninsula; however, due to the relatively high expense, few residents rely on this system for daily transportation needs. The Thumb Taxi is a service provided, on a limited schedule, for the transportation needs of Peninsula youth.~~

~~The environmental impacts of existing transportation systems to Rancho Palos Verdes are considered to be insignificant, due to limited service and use of existing networks. If viewed from the perspective of the lack of service, however, the impacts are indeed significant. This is because the majority of potential public transportation users are forced to use the private auto (see Vehicular Networks), the results of which add to existing problems, such as noise, air pollution, and use of a non-renewable natural resource.~~

~~The development of a viable public transportation system is then a mitigating tactic that can be used to reduce impacts posed by the overuse of the private automobile.~~

~~Studies being prepared by various agencies and committees are addressing the need for additional bus service. Southern California Rapid Transit District (SCRTD) is well aware of the service problems existing on the Peninsula, and indications are that plans to alleviate the problem are being developed. On a more localized level, the South Bay Corridor Study Committee of the South Bay Cities Association has prepared the first phase of a study which indicates the essential public transportation needs of Rancho Palos Verdes. The second phase will develop implementation strategies for major problems.~~

Airports and Seaports

The City does not contain any airports or seaports. With the lack of industrial and minimal commercial zones within the City, as such there is no need for these types of transportation uses. These types of transportation uses are commonly seen in larger cities (i.e. Los Angeles and Long Beach) where industrial and manufacturing zones are found.

3.3 Path and Trail Networks

~~As an integral part of the locomotion component of the infrastructure, walkways, bikeways, and equestrian trails make up the classification referred to in this Plan as "Path and Trail Networks." The importance of path and trail networks and their associated modes in the development of a balanced locomotion system cannot be underestimated. Of particular concern in this regard are bikeways and walkways. In addition to satisfying obvious recreation demands, as do equestrian trails, the potential of bikeways and walkways. In addition to satisfying obvious recreation demands, as do equestrian trails, the potential of bikeways and walkways as functioning transportation networks is becoming increasingly evident.~~

~~On a localized level, the importance of path and trail networks is obvious in terms of recreation and transportation capabilities. It should also be remembered, however, that the~~ Path and Trail Networks are an integral part of the circulation component of infrastructure supporting non-motorized forms of

travel. These include pedestrian, bicycle, and equestrian trails, bikeways, and sidewalks. Path and trail networks and their associated modes are important in the development of a balanced circulation system. Bikeways and walkways satisfy recreational demands as well as function as an integral part of the transportation network. The recreational and environmental amenities found on the Peninsula and within the City are also of regional significance; therefore, the various path and trail networks should be designed to reflect both ~~the~~ local and regional demands, while maintaining the unique character of the Peninsula.

On a localized level, the network of paths and trails is important in terms of recreation and transportation. Thus, where feasible and necessary, through improvements in the public rights-of-way, complete street concepts should be utilized to integrate the needs of all users of the roadway system consistent with the California Complete Streets Act of 2008.

Below is a discussion of the types of path and trail networks available in the City, followed by a discussion of past and future planning efforts to improve the City's path and trails network.

~~The City's first General Plan identified broad deficiencies with the An analysis of existing path and trail networks within the City of Rancho Palos Verdes indicates a condition of broad deficiencies in almost all respects. Although a "Bikeways Plan" (adopted March 4, 1974) does exist, no portion of the Plan has of yet been implemented. Urban walkways (sidewalks) exist; however, no effort has been made to identify major transportation or recreation linkages, nor has there been any effort to develop a system of designated non-urban trails oriented toward providing access to the natural environment. No designated public equestrian trails exist in Rancho Palos Verdes.~~

~~The situation with respect to the Peninsula, as a whole, is much the same as with Rancho Palos Verdes. Bikeways are being studied, but little in the way of developing a functioning system has been done. Walkways, both urban and non-urban, are in a similar state. Equestrian trails, on the other hand, have been developed in a somewhat logical manner, and in many cases, are officially designated.~~

~~The result of the state of walkway, bikeway, and equestrian trail networks is not the loss of such systems for transportation or recreation, for people will use whatever is at their command, but rather the confusion and safety problems posed by the competition and conflict between the various locomotion modes, when using a single multi-use network (e.g., streets, for automobiles, bicycles, horses, and pedestrian travel).~~

~~The bikeways, walkways, and equestrian trails Plans which follow are submitted as conceptual Plans. The Plans are designed to act as the first step in a process that will involve the development of more detailed Plans in the near future. The discussion which accompanies the various Plans serves as a framework for continuing planning by providing the scope and potential of each of the associated modes.~~

~~The walkways, bikeways, and equestrian trail alignments should be essentially considered from an "Arterial" or "Collector" standpoint. It should be recognized that the alignments are flexible, and may~~

be subject to rerouting and perhaps even elimination. By the same token, however, it may become evident through time that more should be added.

The proposed path and trail networks, while functioning as transportation systems, also constitute a major addition to existing and proposed recreation facilities by functioning as linear recreation facilities, and by acting as linkages between various types of recreational and educational activity areas.

Because of physical and jurisdictional characteristics found on the Palos Verdes Peninsula, the three proposed networks include some segments which are not within the domain of Rancho Palos Verdes. The intent of showing such alignments is to illustrate the potential for a Peninsula-wide network. The coordination and cooperation of the Peninsula cities, the City of Los Angeles, and the County are essential in the realization of a quality system of path and trails networks. In addition to the coordination of the various agencies in the development of network alignments, coordination of construction standards, design criteria, and signing is also necessary. It should be noted that network segments outside the jurisdictional limits of Rancho Palos Verdes are routes which constitute an integral part of a Peninsula-wide system.

Changing attitudes and demands for the various types of recreation and transportation activities make an accurate appraisal of future demand extremely difficult to derive. An analysis of recent trends indicates an increased demand for recreation and transportation networks.

Transportation networks impose environmental impacts wherever they are located. It is felt that, in the case of path and trail networks, positive effects often outweigh the negative effects. This is due, in part, to the fact that, without such designated trail systems, the result in the urban environment would be excessive conflict and competition for network space, and in the natural environment, the lack of designated trails would allow for unrestrained disruption of delicate eco-systems. Aside from the advantages of having a designed network, there are adverse environmental impacts that must be mitigated. Within the urban environment the adverse impacts are considered minimal, with the possible exception of visual character. Too often, the development of the urban bikeway or walkway is little more than a widening of the roadway. Mitigating techniques which can be used to soften the appearance of the network include:

- Buffering of individual transportation networks with appropriate landscaping
- Varying the texture of network surfaces
- Using meandering alignment patterns where possible

The impacts of trail systems to the natural environment can be severe. The cutting of a trail through the natural environment causes damage which is, in many cases, irreversible. Irreversible is the disruption of an ecosystem through the removal of natural vegetation, altering of wildlife routes, and introduction of foreign elements (litter, horse manure, signs, etc.). Mitigating these impacts is of prime concern to the City of Rancho Palos Verdes and its residents; therefore the following techniques can be used:

- Strict control of use, through ordinance and regulations.
- A thorough education program, designed to instruct Peninsula residents on natural systems.

- The use of appropriate trail engineering techniques to avoid soil erosion, excessive compaction, and degradation.
- Protection of rare or endangered wildlife and vegetation habitats through avoidance.
- Ongoing maintenance programs should be established (possibly using volunteer help from service organizations, e.g., Scouts, riding clubs, nature groups).

Bikeways

While bicycling has, for many years, provided a popular mode of recreation and transportation for limited segments of our population, an unprecedented growth of bicycling has recently occurred and in all segments of our population, and evidence suggests that this growth trend will continue.

Rancho Palos Verdes, like most cities, desires to establish a bikeways network of superior quality. Analysis of the physical and jurisdictional character of the Palos Verdes Peninsula indicates, however, that a quality system can be enhanced through the joint cooperation and coordination of the Peninsula cities and the County. It is with this in mind that the Rancho Palos Verdes bikeways network is proposed as a conceptual Plan and, therefore, is intended to offer only an interim solution, and perhaps act as a model for the development of a Peninsula-wide bikeway network study and subsequent plan.

The benefits of bicycling to cyclists and non-cyclist alike are:

- Bicycling provides a healthy form of exercise to people of varied ages
- Bicycles provide a relatively inexpensive mode of transportation and recreation to the cyclist
- They do not require fuel
- Bicycles require little space for movement and parking
- Bicycles, when used for commuting, contribute to the reduction of traffic congestion and pollution (noise and air) for the whole community

While the benefits derived through the expanded use of bicycles are impressive, the problems, too, for the average bicyclist, are of significant magnitude to warrant consideration:

- Topographic characteristics
- The time and distance factors for a one-day trip are considerably better for automobiles and buses than for bicycles
- Carrying capacities are limited on bicycles
- Speed differences contribute to automobile/bicycle and bicycle/bicycle conflicts
- Right-of-way conflicts exist between pedestrian and cyclist, automobile and cyclist, and equestrian and cyclist
- Lack of proper education for cyclists, motorists, and pedestrians

The conceptual Plan proposed is based on analysis of existing bikeway plans, background material, environmental considerations, and related goals established by the Rancho Palos Verdes General Plan Goals Committee (September 1974).

Simply stated, the proposed bikeways network consists of an integrated dual system (transportation/recreation) which forms concentric loops (approximately), radial branches connecting the primary loops, and several bypasses.

The principal components of the network is the Peninsula loop. The Peninsula loop would serve cyclists from both a recreation and transportation aspect and should be designated as such. The basic configuration of this loop has long been recognized as an ideal transportation and recreation route by cyclists and interested agencies. Although no formal path exists, cyclists currently use the proposed route for circling the Hill. Study shows that the loop is recommended in the County's Preliminary Plan for Bicycle Routes, and portions of the route are included in bikeways studies currently being done by Peninsula cities. The following streets suggested as probable alignments for this major loop. Included also, are brief descriptions of the streets.

- Palos Verdes Drive West – This alignment is a relatively flat segment. It is a divided roadway except for the northern portion, where it is rather narrow.
- Palos Verdes Drive South/25th Street – This alignment extends from Palos Verdes Drive West to Western Avenue. It is, for the most part, a flat road, with the exception of the irregular and bumpy pavement in the slide area. The condition is expected to remain until such time as the slide stabilizes or construction techniques can overcome the constant earth movement in the area.
- Western Avenue – The Western Avenue alignment runs from 25th Street (in Los Angeles) to the intersection of Palos Verdes Drive North. This wide and level roadway offers good bikeway potential. (It should be pointed out that, although Palos Verdes Drive East relates more to the character of the Peninsula than that of Western Avenue, the narrow and curving nature of Palos Verdes Drive East does not make it suitable for most cyclists. Due to the importance of Palos Verdes Drive East as a major transportation route on the East side, additional study should be given to the incorporation of this street into the Bikeways Plan as a radial segment.)
- Palos Verdes Drive North – The Palos Verdes Drive North segment extends from Western Avenue to Palos Verdes Drive West. This alignment, too, is relatively level, and is divided throughout most of Palos Verdes Estates.

Within Rancho Palos Verdes, the potential for developing a system of Peninsula loop by-passes for scenic and coastal bluff access is excellent. The coastal bluff open space area, proposed as part of the specific Plan District provides a linear open space in which a bikeway could easily be placed. The exact by-pass alignment will be determined through further study; however, the following are offered as a conceptual design:

- An excellent by-pass exists for the bluff area between the Rancho Palos Verdes/Palos Verdes Estates boundary and a proposed County park facility at Point Vicente (abandoned Rifle Range).
- A loop by-pass potential exists east of Marineland on a series of streets running through a small residential area. The approximate by-pass alignment would include Seawolf Drive, Beachview Drive, Nantasket Drive, and Sea Cove Drive.
- A third by-pass is proposed for an area southeast of the lower Portuguese Bend Club. The approximate alignment of this by-pass would extend from the edge of the Portuguese Bend

Club along the coastal bluff open space, run parallel to and eventually merge with Paseo del Mar, and then northward to the main Peninsula loop.

The other major component of the bikeway network is what will be referred to as the Hilltop bikeway loop. Situated near the geographical center of the Peninsula, the Hilltop loop takes in portions of Rancho Palos Verdes and Rolling Hills Estates. This loop is concentric to the larger Peninsula loop and would also functions both in a recreational and transportation nature. The loop is designed to provide access to major employment centers (Peninsula Center and Northrop), as well as activity areas such as schools, and existing high density residential nodes. The approximate alignment for the Hilltop loop is described below:

- Hawthorne Boulevard – Hawthorne Boulevard, from Indian Peak Road to Crest Road, represents the major segment of the Hilltop loop. It is a moderately sloping, divided road which is currently used by cyclists.
- Crest Road – This segment extends from Hawthorne Boulevard to Crenshaw Boulevard. As a proposed arterial, any future widening should incorporate a bikeway into the design. The slope is relatively flat, except for the western-most portion, where it is moderate to steep.
- Crenshaw Boulevard – Crenshaw Boulevard is included in the Hilltop bikeway loop almost totally from the transportation viewpoint. Although it is the shortest segment, it is by far the steepest, and therefore is primarily intended for access on and off the Hill and for use by experienced cyclists.
- Indian Peak Road – The Indian Peak alignment is a relatively level segment running from Crenshaw Boulevard to Hawthorne Boulevard. Its primary function is to serve as access to the linear commercial activity area through which it flows.

Directly associated with the Hilltop loop is a network of by-passes, which function as both recreation and transportation routes. They include:

- Highridge Road – The Highridge Road by-pass extends from Hawthorne Boulevard to Crenshaw Boulevard. It is somewhat flat, with a moderate grade near Hawthorne Boulevard. Its relationship to various activity areas makes it an important transportation segment.
- A loop by-pass of excellent scenic and recreational value is proposed to run along the ridgeline south of Crest Road. The precise alignment would be determined upon further study; however, it is recommended that the bikeway run parallel to a proposed footpath. The by-pass would run from the intersection of Crest Road and Crenshaw Boulevard, on Crenshaw extended (south) to a point south of Whitley Collins Drive, where the route would leave the road and parallel the ridgeline at a safe distance. The by-pass would eventually merge with the Crest Road loop segment at a point near the east Northrop entrance.
- A non-continuous scenic by-pass is proposed to extend along Crenshaw Boulevard and its undeveloped right-of-way, from Crest Road to a point approximately one-half mile from the Crest intersection, where it would cul-de-sac. This bikeway segment would also run parallel to a footpath.

The system of radial bikeway segments is designed to link the two loops and provide access to the various activity areas on and off the Peninsula. These bikeway segments are discussed primarily from a transportation point of view, in the realization that most radials are of such a nature that only the most dedicated physical fitness buffs and recreationalists will use them for "pleasure". Furthermore, it should be pointed out that bicyclists using these radials should be made aware of the potential problems that may occur on intermittent portions the bikeway.

- Hawthorne Blvd – While portions of Hawthorne Blvd. are relatively flat (primarily associated with the Hilltop loop), most of the two Hawthorne radial branches are steep enough to be beyond the capabilities of many cyclists. The northern radial not only links the two loops, it provides egress from a transportation link from the Peninsula loop to the Hilltop loop.
- Silver Spur Road – Silver Spur Road also acts as a transportation link between the two loops. The characteristics of the road include steepness and narrowness in some areas.
- Crenshaw Blvd. – From its interaction with Silver Spur Road, Crenshaw Blvd. slopes abruptly to Palos Verdes Drive North. This linkage is primarily transportation oriented, as is the less steep slope toward Torrance. The latter portion, however, provides access to two major recreation facilities, the existing South Coast Botanical Gardens, and the future Regional Park site.
- Palos Verdes Drive East – This street functions as the principal transportation route on the East side. This route would serve several schools, recreation areas and a commercial center (The existing configuration and other trail proposals warrant further study before final commitment is made).

In addition to the quality of the bikeways network itself, the success of the system may, in part, be determined by the availability of support facilities that are associated with cycling. Support facilities generally include bicycle parking facilities and human convenience facilities (restrooms, water fountains, etc.). Bicycle support facilities are most often found at major destination points, such as schools, parks, and commercial locations; however, some of the more popular, yet less structured destination points such as vistas, bikeway forks, and beach accesses may require such facilities. The preparation of the final bikeways plan should include a complete inventory of the availability of support facilities, an analysis of potential locations, and acquisition/implementation techniques.

While no attempt is made here to designate specific designs for each segment of the bikeway network, the following factors might be considered in the establishment of the final design.

- The most efficient, safe, and enjoyable bikeway system completely separates conflicting locomotion modes.
- When designed on the street, bikeways should flow with traffic and should be designated with painted indicators or signs, rather than curbs or other physical devices.
- Parking should not be allowed on bikeways.
- Scenic and recreation routes should be sufficiently far enough away from bluff and canyon hazard areas.
- Whatever the design, a system of standardized signs should be established throughout the Peninsula (It is also suggested that, in coordination with the signs, a schematic bikeways map be included with perhaps a color code to indicate location and degree of difficulty.)

~~Walkways~~ Sidewalks.

While the roadway system focuses on the opportunity for vehicular travel, the walkway (i.e., sidewalk) system enhances and increases opportunities for pedestrian foot travel, such as walking, jogging, and hiking. Unlike trails, which are typically natural paths providing recreational opportunities that meander with the topography through open space areas and provide access to and through natural environments, sidewalks are characterized by their hard concrete or asphalt surfaces and continuous configuration adjacent to roadways.

The City's Public Works Department has an annual sidewalk repair program to ensure ongoing maintenance of the existing sidewalk system. The intent of this program is to correct potentially hazardous portions of existing sidewalks, driveway approaches, and parkways that could pose a problem to pedestrians. The City has established a program to help ensure that the damaged sidewalks are repaired in a timely manner with a minimum burden to the property owner. Further, as problems are identified, modifications will include measures to ensure Americans with Disabilities Act compliance and consistency with applicable laws and design standards.

The Rancho Palos Verdes Coast Vision Plan (Vision Plan; City of Rancho Palos Verdes 2009) also identified the enhancement of pedestrian pathways along roadways within the City's coastal zone either through the development of City standard sidewalks or permeable paving such as decomposed granite, where appropriate (i.e., trails, as discussed previously). In addition, the Vision Plan identified the need to separate pedestrians from the roadway where the right-of-way is most constrained by using attractive barriers or edge/parkway planting. The Vision Plan has been folded into other City documents such as the Parks Master Plan.

The City annually adopts a Capital Improvement Plan, which is a guide for the efficient and effective provision of resources for improving and maintaining public infrastructure and facilities. The Capital Improvement Plan provides for the creation and maintenance of sidewalks along Palos Verdes Drive South and Palos Verdes Drive West, adjacent to the City's coastal zone, encouraging the use of surface material that aligns with the natural setting of the coast.

~~The most basic of all the transportation systems, walkways, usually is the system least often considered in the development of the Circulation Element. Likewise, when discussing locomotion modes, foot travel is often totally ignored. Fortunately, an increased environmental awareness has been paralleled by an increased awareness of the overall desirability of self-locomotion (walking, jogging, and hiking). Although the visible evidence of the growing popularity of walking is not as obvious as bicycling, it is there, particularly with the more specialized derivations of foot travel, such as hiking and jogging.~~

Pedestrian Trails

While sidewalks typically have impervious surfaces and parallel streets and roadways, pedestrian trails are typically identified by their pervious surfaces and typically do not parallel a street or roadway; rather, they typically traverse open space areas to offer a more natural experience and opportunity for recreation. These pedestrian trails also connect their users to natural and scenic points on the Peninsula that can only be reached on foot due to topographic and/or environmental sensitivities that make them inaccessible by motorized vehicles or other means.

Pedestrian trails are an important part of a ~~The importance of a system of walkways in the establishment of a~~ balanced transportation network; however, the primary function of pedestrian trails is to a more recreational need. ~~is critical. Therefore, as with the other path and trail systems, the intent of the walkways discussion is to act as a conceptual guide, to be subsequently followed by a more detailed walkways plan. This is due, in part, to the feeling that:~~

- ~~More detailed investigation of design standards and acquisition techniques must be performed.~~
- ~~Greater coordination with adjacent cities and the County is needed.~~
- ~~Adoption of several pertinent plans, vital to policy and location, must be completed (e.g., California Coastal Zone Conservation Commission Coastal Plan, and specific plans suggested in this document).~~

~~The proposed walkways network is a lengthy, web-like system designed to function in various capacities and serve the varying needs of Peninsula residents and visitors. The walkways network functions as a dual-purpose system, providing linear paths for transportation and recreation. The design and location of an individual segment is determined by the relationship to its environ, the projected use, linkage capabilities, and access capabilities.~~

~~The walkways plan consists of two dominant components: urban trails and non-urban trails. The first and most important to Rancho Palos Verdes residents is the system of urban trails (existing and future sidewalks), which act as primary transportation linkages. Non-urban trails, even though of less importance to the utilitarian needs of residents, provide a vital link to the more natural environs for residents and visitors.~~

~~The most dominant feature of the proposed walkways network is the system of existing and future sidewalks, which are, in most cases, part of urban activity and closely associated with streets. Due to the number of sidewalks within Rancho Palos Verdes, no attempt is made here, nor in graphic form, to identify all such walkways. Rather, only those sidewalks which function as major transportation linkages are identified. While the transportation function of sidewalks is fundamental, activities such as jogging and casual walking play an equally important role. Furthermore, whether right or wrong, sidewalks often function as auxiliary reaction facilities, such as skateboarding and children's play. Urban trails are generally characterized by hard surfaces (concrete or asphalt) and continuous configuration; exceptions may exist, however.~~

~~The other feature of the walkways plan includes a network of designated non-urban trails used principally for recreation purposes. Day hiking and pleasure walking normally make up the functional activities which take place on these trails, although they may sometimes be used for commuting purposes. Seldom associated with the street system, the majority of trails extend from urban/natural interfaces into the natural environment, and back to interface areas. The character of non-urban trails is usually that of a configuration which best suits the topography and a surface of either natural or man-made materials.~~

~~As previously stated, the design of walkways is dependent upon several factors, with the character of surrounding environs and function being of prime consideration. It is with this in mind that the following~~

recommendations are made. (Further, more detailed discussion of walkway treatment will be addressed in a forthcoming community design element.)

- All walkways should be physically separated from other movement systems.
- Wherever possible, urban trails should be designed in a curvilinear configuration and enhanced with landscaping.
- In areas of environmental significance (canyons, bluffs, ridgelines), trails should be maintained as natural (dirt) pathways.
- Trail configuration should reflect natural topography.
- In areas of natural surroundings, the use of any trail landscaping treatment should reflect the natural character of which it is a part.
- The use of textured surfaces on manmade paths should be encouraged.

The development of the walkway alignments proposed is based on study of existing walkways, field analysis of non-urban paths, environmental characteristics, and goals established by the General Plan Goals Committee. Some of the major alignments discussed in this conceptual Plan are outside Rancho Palos Verdes. They are included, however, to illustrate the potential for a continuous and integrated Peninsula walkways system.

Much like the proposed bikeway system, the configuration of the walkway system takes the form of two concentric loops and associated radial connecting branches, which are primarily urban trails, and a system of non-urban trails functioning as scenic/recreation by-passes.

Of major consequence to the locomotion functions of the entire Palos Verdes Peninsula is the walkways loop made up of paths paralleling Palos Verdes Drive West, Palos Verdes Drive South, Palos Verdes Drive East, and Palos Verdes Drive North. Although this loop is specifically designated as an urban trail, the existing and potential character of the loop suggests that it should not be treated in the manner traditionally associated with urban trails, but rather in the softer more natural approach, as can currently be seen along portions of Palos Verdes Drives North and West (in Palos Verdes Estates).

Other urban trails parallel Hawthorne Blvd., Crenshaw Blvd., Crest Road, Highridge Road, Silver Spur Road, Indian Peak Road, Montemalaga Drive, and Miraleste Drive. A major loop if formed near the geographical center of the Peninsula by portions of Hawthorne Blvd., Crest Road, Crenshaw Blvd., and Silver Spur Road. The remaining urban trail routes function as transportation/recreation networks which link to major activity nodes, to the two major loops, and to areas off of the Peninsula. While further study is needed to determine the final design and treatment of all urban trails, Miraleste Drive and Crest Road deserve special and immediate attention – Miraleste Drive, because of its existing unique character, and Crest Road (from Hawthorne Blvd. to Crenshaw Blvd.), because of the exceptional potential to create a locomotion corridor equaling or surpassing the beauty and function of Palos Verdes Drive North (in Palos Verdes Estates). Crest Road within the City of Rolling Hills could provide a vital walkways linkage from the center of the Peninsula to the Miraleste area.

The unique character found in most undeveloped land, as well as some developed areas in Rancho Palos Verdes, allows for the development of a system of designated non-urban trails which few cities

in the South Bay can equal. While the function of the non-urban trails is almost entirely one of providing access to and through passive open space areas, the environments through which the user passes are of two distinct types. The two types include a coastal bluff system and a ridgeline/arroyo system. Both systems begin and end at interface areas, usually associated with an urban trail.

The proposed coastal bluff trail in the City of Rancho Palos Verdes is of such regional significance that much study and care in design will be necessary to ensure that it functions correctly and, at the same time, works within the eco-limits of the fragile coastal environment of which it is a part. It is with this in mind that it is reiterated that more study is necessary before the development of a final walkways plan. The approximate alignment should be within the coastal bluff setback (wherever possible), but at a sufficient distance from the bluff edge to ensure safety for its users. Due to environmental and urban conditions, the coastal bluff trail will sometimes merge with urban trail segments along Palos Verdes Drive West and South; however, this merging is not expected to result in a change to the overall functioning of either. The merging may, in fact, enhance both functions. The trail could have nodes at which varied functions may take place, such as beach access, rest areas (restrooms and limited picnicking), and vistas. The following alignments are recommended as approximate bluff trails:

- From a place near Sandy Point, the trail moves southward along the bluff to a proposed County Park at Point Vicente, where it merges with the Palos Verdes Drive West urban trail. Potential beach access points exist at several locations along this segment.
- Immediately east of Marineland, the bluff trail continues south of the perimeter of a proposed school, along the bluff, through a residential neighborhood, and back to the bluff to Portuguese Point, where it again merges with the Palos Verdes Drive urban trail. Beach access trails exist in about five locations along this bluff segment, two of which are at the County facility at Abalone Cove.
- Although the trail segment from Portuguese Point to just past Schooner Drive is considered an urban trail, the surrounding characteristics create a more rural or natural feeling; therefore, treatment should reflect this. The major beach access occurs at Portuguese Bend Club.
- From a point east of Schooner Drive, the trail continues its bluff alignment to Shoreline Park, where it again merges with an urban trail. Several beach access trails are found along this bluff segment.

Within the City of Rancho Palos Verdes there are certain undeveloped arroyos, slopes, and ridgelines which, due to physical and socio-economic constraints, are not suitable for development. Likewise, there are partially developed areas which, due to similar constraints, are not suitable for further development. These areas make up the principal location of several designated non-urban trails. The term "designated" is used because many existing trails have been established, and while some function well, others are not suitable for use, due to damage to the environment and extreme grade. Further study is necessary on a site specific basis in order for the establishment of quality non-urban trail system. The following areas are suggested as possible trail segments:

- One of the most important and easily implemented non-urban trail segments is the route known as the Crenshaw right-of-way. This trail would extend from a point near the termination

~~of Crenshaw Blvd. to Palos Verdes Drive South. Although the trail runs through the active slide area, it is felt that the area could support an activity such as hiking and nature walks.~~

- ~~Aqua Armaga Canyon offers excellent potential for a trail. Designated in an extreme physical constraint rating, this Canyon provides potential hikers and nature lovers with a natural linkage from Hawthorne Blvd. into Palos Verdes Estates. (Efforts to coordinate with Palos Verdes Estates in the extension of this trail to Lunada Bay should be made.)~~
- ~~Similar to Aqua Armaga Canyon, Malaga Canyon is an area of potential trail development. The development of a trail segment from Highland Park around the ridge, and up Malaga Canyon to Grayslake Road (or Basswood Avenue) should be studied.~~
- ~~In the Miraleste area, several canyons and street right-of-way (proposed Narbonne Avenue) should be investigated for trail potential. The most desirable canyons appear to be Miraleste Canyon, San Pedro Canyon, Averill Canyon, and an unnamed canyon in the southeast portion of Rancho Palos Verdes which just touches Friendship Park. Portions of Miraleste Canyon and San Pedro Canyon lie within the Miraleste Park and Recreation District.~~
- ~~The Ridgeline south of Crest Road (and between Crenshaw Blvd. and Hawthorne Blvd.) also offers a non-urban trail segment with superb vistas and access to two potential non-urban trails, Via Altamira Canyon and an unnamed canyon east of Hawthorne Blvd., both of which extend to the Palos Verdes Drive South urban trail.~~
- ~~Study should also be given to a potential loop trail around the Del Cerro development. The loop would include part of the Crenshaw trail; however, at the point where it begins to curve down the hill, the loop might separate and continue around the residential area (on a private easement), to a point of existing Crenshaw Boulevard.~~

Equestrian Trails.

Since the time of the earliest settlers, the horse has been a part of life on the Palos Verdes Peninsula. First used primarily for utilitarian purposes, such as basic transportation and aiding in farm activities, the function of the horse is now ~~almost entirely~~ recreational. With the change of functions have come changes in development pressures and public attitudes toward horses. Development pressures have taken significant amounts of land from the rural and semi-rural categories, which can best support equestrian activities, and attitudes now demand that equestrian activities may only take place in certain locations. ~~This section of the path and trail networks Plan offers a guide from which a more detailed equestrian trails plan can be developed. Due to the extensive equestrian trail systems found in adjacent cities, any such detailed planning effort should be coordinated to the fullest extent with those cities, particularly in respect to the logistics required to establish ties with private trails.~~

Within the City ~~Rancho Palos Verdes~~, two general locations now support major concentrations of horses and limited equestrian trails: ~~They are:~~ the ~~East~~ eastern side of the City and the Portuguese Bend area. The ~~proposed~~ equestrian trails in the Conceptual Trails Plan (City of Ranch Palos Verdes 1993) ~~network is designed~~ were identified to provide a designated trail between these two areas, as well as to establish linkages to the extensive trail systems found in adjacent cities ~~Furthermore, the Plan proposes the establishment of two stable facilities within Rancho Palos Verdes.~~

~~The Rancho Palos Verdes equestrian trails network proposed is a web of looping trails in the proposed low density residential and open space areas in the southern and eastern sections of the City.~~

In the area generally known as Portuguese Bend (bounded roughly by Hawthorne Blvd., Crest Road, Palos Verdes Drive South, and the Crenshaw right-of-way), the amount and type of land uses proposed offer excellent potential for a system of equestrian trails and a stable facility. The exact alignment of trails will be determined through specific planning; however, in most cases, the routes could parallel proposed non-urban hiking trails and should make use of existing trails if determined feasible. The following alignments are suggested for this general route:

- The Crenshaw right-of-way, from Palos Verdes Drive South to the point near its termination
- On the ridgeline south of Crest Road
- North/south trails between the ridgeline and Palos Verdes Drive South as physical terrain and other considerations

In addition to the trail system in this area, it is recommended that, due to the semi-rural character expected and assumed popularity of equestrian activities, an additional stable be established. Further study will reveal the necessary implementation techniques to establish such a stable.

The east side of the City, generally bounded by Rolling Hills, Rolling Hills Estates, San Pedro, and Palos Verdes Drive South, currently has an intricate network of trails which traverse public and private property. In addition to the approximate alignments recommended below, study should be undertaken to determine which of these trails should be designated equestrian trails.

- The Narbonne Avenue right-of-way, for its entire length in Rancho Palos Verdes
- Various canyons under public ownership (e.g., Miraleste Parks and Recreation District)
- Palos Verdes Drive East from Palos Verdes Drive South to Rancho Palos Verdes boundary (the establishment of designated equestrian trail along this route has been suggested as a key link; however, due to the obvious traffic hazards involved, extensive study must be completed before final designation.)

The canyon area (Georgeff Canyon) northwest of the Surrey Development is also recommended as a potential riding and/or stable area, as is a site in or adjacent to Friendship Park.

A coastal bluff equestrian trail system is highly encouraged. It could function as a link between Palos Verdes Estates, Portuguese Bend, and the East Side. Further study is indicated, however, due to the right-of-way problems found in the area between the existing fire station at Sea Cove Drive and Point Vicente.

The following design criteria are suggested as basic concepts:

- Trails should be off-road wherever possible
- Trails should be constructed on loose dirt and appropriate mulch materials (natural) to minimize dust
- Coordinated graphics denoting direction, use, warnings, etc.
- Trails should be fenced (e.g., split rails or similar)

- ~~The regulations and use policies should be generated by cities, appropriate agencies, and equestrian clubs.~~
- ~~Whenever possible, trails should be continuous and provide access to stable and other riding facilities.~~

Trails Network Plan

The City's first General Plan identified broad deficiencies in the City's path and trail networks. A Bikeways Plan was adopted on March 4, 1974, that identified major transportation and recreation linkages. The City developed a comprehensive Trails Network Plan in 1984 to address pedestrian, bicycle, and equestrian trails. The Trails Network Plan uses policies established in the City's General Plan and Local Coastal Plan, with a major theme of a network that functions as a transportation system, linear recreation facility, and linkage between recreational, commercial, and educational activity areas. It is important to note that the purpose of the document was to serve as an advisory tool and guide for implementing and funding City and regional trails. Subsequently, the City adopted the Conceptual Bikeways Plan in 1990 (last revised on October 15, 1996) and adopted the Conceptual Trails Plan in 1990 (last revised on September 7, 1993). The Conceptual Trails Plan and the information contained in it, combined with the Conceptual Bikeways Plan, became known as the first section of the Trails Network Plan. Although the Conceptual Trails Plan was last updated in 1993, it has been augmented by additional documents. Thus, the current Trails Network Plan consists of the following documents:

- Conceptual Trails Plan (City of Rancho Palos Verdes 1993);
- Conceptual Bikeways Plan (City of Rancho Palos Verdes 1996);
- Preserve Trails Plan (City of Rancho Palos Verdes 2008); and
- Coast Vision Plan (City of Rancho Palos Verdes 2009).

An update to the Trails Network Plan is underway and will combine these documents into one comprehensive plan.

Conceptual Trails Plan

The purpose of the Conceptual Trails Plan was to identify trail opportunities within the community so that new trails could be integrated into the City's existing public trails network. The acquisition and development of new public trails would be achieved through new development proposals, public works projects, and voluntary efforts. However, it is important to note that the plan is conceptual, and that inclusion of any segment in the Conceptual Trails Plan does not legally grant the use of the trail by the public or in any way guarantee the segment's eventual implementation.

In August 2004, the City Council approved the Draft Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) subarea plan for final review and approval by the Wildlife Agencies. The City Council-approved NCCP/HCP subarea plan requires the City and the Palos Verdes Peninsula Land Conservancy develop a Public Use Master Plan (PUMP) document that identifies how public use of the Palos Verdes Nature Preserve (Preserve) should be managed. Specifically, the PUMP addresses issues such as public access, trailhead locations, parking, trail uses, fencing, signs, and other recreational related topics that may arise. As part of the PUMP preparation process, a Preserve Trails Plan (PTP) was adopted by the City Council in April 2008 that identifies the permitted trail routes and the permitted trail uses (pedestrian, equestrian, and bicycle) in the Preserve. The adoption of the Preserve Trails Plan augments the Conceptual Trails Plan, and future Trails Network Plan.

The Conceptual Trails Plan was further augmented with the 2009 adoption of the Coast Vision Plan. The Vision Plan includes components to establish a continuous coastal access trail linkage through the City's coastal zone, implementing the Conceptual Trails Plan, and layering amenities for trail users along the way in order to provide access and connectivity for uses of the coastline by people on foot and on bicycles. The Vision Plan has been or will be incorporated into other City documents, such as the Parks Master Plan and future update to the Trails Network Plan.

In summary, the former-Vision Plan, the PUMP's Preserve Trails Plan, and the NCCP/HCP subarea plan establish a continuous coastal access trail linkage through the City's coastal zone and through the City's preserve properties. As such, the remaining portions not covered by these documents continue to be addressed through the Conceptual Trails Plan, and will continue to be used as a guide to identify and provide additional trail linkages throughout the City when the Trails Network Plan is updated.

Conceptual Bikeways Plan

The Conceptual Bikeways Plan identifies bikeway opportunities in the community to facilitate the acquisition and development of new bikeways through development proposals, public works projects, and voluntary efforts. This plan was developed for the purpose of furthering the goals and policies of the Circulation Element.

The bicycle is increasing in popularity as a mode of transportation for commuter travel as well as for recreation. For many years, roadways have been built exclusively to meet the needs of the motorized vehicle, resulting in street geometrics, lane widths, and intersections that have not been designed for bicyclists' concerns. Bicycle safety is jeopardized due to bicycle/automobile and bicycle/pedestrian confrontations on the street, and the lack of space given over to bicycle movement. Conflicts between bicycles, cars and trucks, and pedestrians at intersections and on sidewalks result in the need to separate these three modes wherever possible to provide a safer and more efficient operational environment for each.

For many years, bicycling has provided a popular form of recreation and transportation for limited segments of the population. Significant growth of the bicycling population has occurred over the past 10 years. Bikeways within the City are generally used for recreational purposes. A limited number of bicycle commuter trips occur in the City due to the ratio of jobs to population. As is the case for many cities throughout the nation, the number of bicycle commuter trips is expected to grow with the growth in population. However, the number of bicycle commuter trips will likely remain insignificant in the City, except for the commercial corridor on Western Avenue. The land use, topography, and demographic makeup of the Peninsula are not conducive to extensive bicycle commuting activities.

Usage of the bikeways in the City increases significantly during early evening hours, during the summer months, and on weekends and holidays due to the picturesque nature of the Peninsula and the views to be enjoyed while using the various bikeways. Several of the bikeways can be categorized as semi-regional in nature because riders from beyond the Peninsula either ride or drive here expressly to ride along the bikeways and streets.

The Conceptual Bikeways Plan calls for considering the implementation or improvement of all non-existing and existing but substandard bikeways contained in the plan in the course of scheduled street improvements, consistent with the goals and policies of the Circulation Element.

With the adoption and implementation of the Vision Plan, the PUMP and its Preserve Trails Plan, and the Conceptual Trails Plan, there is a need to update the Conceptual Bikeways Plan as part of the Trails Network

Plan update. The update must analyze and identify opportunities to provide connections and linkages from the bikeway network to the multi-use trails identified in the former-Vision Plan and the PUMP.

Future Planning Efforts

As mentioned above, the Trails Network Plan consists of a combination of a variety of individual documents. However, the Conceptual Trails Plan and the Conceptual Bikeways Plan portions of the City's current Trails Network Plan have not been updated since the early- to mid- 1990s. In recent years, the City Council has reviewed and approved trails plans for subareas of the City, which have included the Palos Verdes Nature Preserve, the coastal zone, and adjoining areas, but there has been no comprehensive, City-wide update to the Trails Network Plan. As such, a comprehensive update and consolidation of the City's Conceptual Trails Plan, 1996 Conceptual Bikeways Plan, Vision Plan, and Preserve Trails Plan into a single comprehensive Trails Network Plan document launched in 2014 and is anticipated to be developed in 2018.

Infrastructure Systems

- ~~It shall be a goals of the City to ensure adequate public utilities and communications services to all residents, while maintaining the quality of the environment.~~
- ~~It shall be a goal of the City to provide residents with a safe and efficient system of roads, trails and paths.~~
- ~~It shall be a goal of the City to encourage the increased mobility of residents through the development of an adequate public transportation system.~~

~~The existence of urban man in a given area is normally dependent upon the availability of certain natural and man-made support systems. Natural support systems include air, water, etc., and are discussed in the Natural Environment section of this report. Man-made support systems include domestic water, energy, transportation, communications, sanitation, and flood control. These systems are commonly referred to as the "infrastructure". The facilities and networks which make up the infrastructure are generally considered as the foundations on which activity areas are facilitated and maintained and, in some cases, the primary criteria for the further growth of these activity areas.~~

~~The Rancho Palos Verdes infrastructure is similar in composition to most Southern California communities and consists of the following major divisions:~~

- ~~Resource Systems (water and energy)~~
- ~~Disposal/Recovery Systems (sanitation and flood control)~~
- ~~Communication Systems (broadcast and cable)~~
- ~~Transportation Systems (vehicular and non-vehicular)~~

~~By way of summarizing the existing condition of Rancho Palos Verdes, in respect to the functions rendered by the infrastructure, it can be said that the city is being adequately served. Various infrastructure functions, however, are not without significant problems and deficiencies.~~

~~To better understand the status of the existing and future infrastructural condition, it is important to point out three very significant factors. First, the environmental characteristics of the Palos Verdes peninsula are such that it is a very desirable location to live, work, and visit, hence, an influx of people needing varied support services. Second, as an unincorporated part of the County until 1973, the area had few residential development restrictions; therefore, higher populations were projected. Finally, if~~

~~the previous factors are coupled with the rationale of the infrastructure-related companies and agencies, whose philosophy has justly been to supply services by planning ahead (generally using population projections), the result is installation of maximum facilities, based on extent and location of growth.~~

The existing infrastructure meet the current needs of the City. Various infrastructure functions, however, are not without problems and deficiencies. The deficiencies currently found in infrastructure functions are rarely of a common nature, therefore they are discussed on an individual basis throughout the Infrastructure section.

~~Some of the problems, however, are common to many or all infrastructure systems.~~ The Portuguese Bend slide area was found to be the major problem area~~, not only from the standpoint of human safety, but from that of~~ regarding infrastructure function~~, as well~~. All infrastructure networks, to some degree ~~or another,~~ utilize the slide area for right-of-way. Because the earth is constantly moving in that area, all networks are above ground and most have had to incorporate special devices to allow for movement, for example, "slip span" in cables, and "swing joints" in water lines. Additionally, in early 2000, a new combination above/below-ground sewer system was completed for the Portuguese Bend area in order to minimize water percolation resulting from the septic systems that were common in the area. ~~The various networks in the slide area are constantly being monitored and maintained and, although it is quite costly, the affected companies and agencies have tentatively indicated that to eliminate the networks in favor of realignment or readjustment is economically feasible at this time. Most infrastructure related companies and agencies agree that further study of this problem is warranted.~~

~~The precise extent to which the infrastructure adversely affects the Rancho Palos Verdes environment is relatively difficult to appraise, particularly in the various activity areas. This is due, in part, to the fact that within an activity area, adverse impacts can result from the combined effects of one or more of the activity's components. The presence of an isolated infrastructure corridor through the natural environment enables a more accurate appraisal. The most obvious adverse impacts of the combined infrastructure include:~~

1. ~~Disruption of ecosystem~~
2. ~~Depletion of natural resources~~
3. ~~Sensory pollution (primarily visual and auditory)~~
4. ~~Potential safety hazards~~
5. ~~Potential growth inducement~~
6. ~~Fiscal impact~~

~~Of the aforementioned impacts, only the disruption of an ecosystem is considered to be of a totally irreversible nature, for the locating of a network in the natural environment often establishes a corridor which acts as an edge or barrier for animal and plant communities. Impact factors 2 through 6 however, may be eliminated or reduced to acceptable levels through mitigating tactics.~~
~~For example:~~

- ~~The depletion of natural resources (water, fossil fuels) may be reduced by practicing conservation, using alternative, renewable, or recycled resources, and through the use of more efficient development techniques.~~
- ~~Sensory pollution and safety hazards can be effectively reduced and controlled by man-made measures, such as under-grounding and/or landscaping of utilities, and through the development of less offensive devices which produce effects.~~
- ~~The impact of growth (and its secondary effects) induced by the infrastructure can be mitigated through the development of strict land use controls, such as establishing low residential densities and by limiting commercial and industrial activities.~~
- ~~The fiscal impacts related to the infrastructure are primarily generated by the services provided and through the construction and maintenance of the various systems. Although the service costs of utilities are relatively stable (as regulated by the Public Utilities Commission) users can effectively reduce cost through conservation and use of other mitigating techniques often associated with depletion of natural resources (see above). The cost of streets and flood control, which is initially borne by the City, can be reduced through land use controls, construction techniques and on-going maintenance programs.~~

The demands on the infrastructure system continue to grow and change over time. Communications infrastructure did not include mobile phone networks 20 years ago or broadband Internet services 5 years ago. The City is just now building a fiber-optic communications infrastructure to increase the available bandwidth by several orders of magnitude. The infrastructure system capacity will need to accommodate both increased resource usage due to technological advancements, as well as increased usage associated with buildout and population growth. The infrastructure system is constantly being maintained, modified, repaired, upgraded, and/or extended by the appropriate provider to meet demand. The ultimate buildout and population increase will not create a significant adverse impact on the infrastructure system because the population increase resulting from buildout will not be substantial. Further, requirements for new development to include best management practices and water- and energy-efficient components work to maintain and enhance the infrastructure system.

~~The~~ Notwithstanding, the following sections discuss in greater depth each of the infrastructure systems and the agencies and companies responsible for them. In addition, more specific information as to impacts, problems and deficiencies is also indicated.

4.1 Resource Systems

Water

One of the most vital components in the infrastructure is the water distribution system. ~~Unlike other infrastructure components such as flood control systems, which are primarily for convenience, water is a necessity of the most basic human settlement. In Rancho Palos Verdes, as in other developed areas,~~ ~~w~~ Water is used for varied purposes, which can be grouped into four basic categories:

- Safety requirements (fire)
- Human consumption (drinking, food preparation)
- Ground maintenance (landscaping)
- Urban activities (sewage ~~medium~~)

The water needs of the City of Rancho Palos Verdes and the remainder of the Palos Verdes Peninsula are currently served by the California Water Service Company (~~CWSC~~ Cal Water). Operating within the regulation and standards of the State Utilities Commission, the ~~The~~ sole function of ~~CWSC~~ Cal Water is to provide and operate a range of regulated and non-regulated water and wastewater utility services to residents of the City, other companies, municipalities, and agencies. ~~supply the area with sufficient fire safety requirements and adequate amounts of potable drinking water at a pressure consistent with accepted standards. The CWSC is a private company which operates within the regulations and standards of the Public Utilities Commission.~~ Cal Water purchases surface water that is imported by the Metropolitan Water District of Southern California from the Colorado River and the State Water Project in northern California, which is then used to serve the entire Peninsula, including the City of Rancho Palos Verdes through the Palos Verdes water system.

The Palos Verdes water system includes 350 miles of pipeline, 18 storage tanks, and 31 booster pumps spanning an area of approximately 26 square miles and ranging in elevation from sea level to 1,465 feet sea level. Due to the range of elevation, the water system is also comprised of 109 pressure zones and hundreds of pressure reducing valves, which carry water from tanks in the upper elevations of the system to lower zones. Cal Water proactively maintains and upgrades its facilities to ensure a reliable, high-quality supply of water. ~~Currently the CWSC purchases all its water from the West Basin Water Association (a distributor for Metropolitan Water District), which supplies the Peninsula with water imported from Northern California via the California Water Project.~~

~~The water distribution system, as with other infrastructure components, consists of resource facilities (reservoirs and tanks) and networks (distribution lines, valves, hydrants, and pumping stations). This component of the Rancho Palos Verdes infrastructure is designed as an integrated grid system, that is, a system which combines resource facilities and network in a basically closed, interconnecting configuration. Integrated grid networks have numerous advantages over linear or radical networks, but the primary advantages include:~~

- ~~They are well suited to diverse topography~~
- ~~They provide a more uniform flow over a broad area~~
- ~~They allow greater distribution of water in times of maintenance or emergency~~

~~Water is distributed through the networks primarily by gravity; however, booster stations, pump stations, and regulation valves are incorporated in the network to guarantee adequate water pressure. The design of the water network is based on fire flow requirements and domestic supply requirements. Water mains generally range in size from as large as 33 inches to as small as 6 inches (with some exceptions).~~

~~At the present time, the water needs of Rancho Palos Verdes are being adequately served by CWSC. Discussions with representatives of CWSC indicate that the main trunk system, which delivers water to Metropolitan Water District's Palos Verdes Reservoir, is capable of serving a population well over that which is projected for the Peninsula. An increase of population, primarily in the undeveloped areas, will create storage problems to existing CWSC resource facilities. With population increases in mind, CWSC~~

~~is currently studying the possibility of expanding capacities of existing facilities, as well as acquiring an additional storage facility in the southeast portion of the City (Nollenberger, interview).~~

~~The water distribution system, while adequate to serve existing needs of the City, does possess some areas of deficiencies and problems. The deficiencies related primarily to isolated cases of inadequate water pressure on the east side and in the extreme north (near Via Campesina). The Portuguese Bend area presents water problems which are of major concern. Because of the constant hazard of being damaged from earth movement, water mains are considerably smaller than the norm (in some cases, only 2 or 3 inches), and all lines are above ground. Small water lines in this area present a problem, primarily to fire fighting capabilities. County Fire Department standards require an average water flow of approximately 2,500 g.p.m. to provide adequate protection. Upper Portuguese Bend is far below this standard; therefore, it is acknowledged as being as area of particular concern to fire fighters. (See Safety section).~~

The Palos Verdes water system distributes water through two distinct water distribution systems. These systems are commonly referred to as the "D-500 System" and the "Ridge System." The D-500 System serves the lower-elevation areas of the Peninsula, about 13% of the total demand, and the Ridge System serves the upper-elevation areas, comprising the remaining 87% of demand. The average daily demand and maximum daily demand of the Ridge and D-500 Systems combined is 12,500 gallons per minute (gpm) and 20,600 gpm, respectively. All of the supply to the Palos Verdes system is delivered through four connections located at the northeastern edge of the Peninsula.

Cal Water is planning the construction of additional transmission pipelines, storage, and boosting facilities in its Palos Verdes District under two proposed projects, collectively known as the Palos Verdes Peninsula Water Reliability Project. This effort will increase storage capacity, enhance reliability, improve fire protection, increase operational flexibility and efficiency, improve access to facilities, and reduce the risk of loss and damage in the event of an emergency. The pipelines associated with the Palos Verdes Peninsula Water Reliability Project have already been realigned to address public concerns associated with traffic impacts. This project is pending the support of the public and approval of the Peninsula cities and California Public Utilities Commission, with construction anticipated in 2018.

~~The impact of the existing water distribution system on the Rancho Palos Verdes environment is relatively small, primarily because facilities and networks are integrated or assimilated in the existing structure. The impact of future water distribution systems is not expected to cause significant adverse impacts. Future water systems will be associated with the development of proposed activity areas (residential, commercial, etc.) and therefore must be evaluated not as an isolated system, but rather as a cumulative effect generated by development as a whole. The most obvious impact would be the visual effect created by a new storage facility. Related mitigating measure would include undergrounding of tanks and/or implementing landscaping techniques (buffering vegetation and berms). The impact of expanding the capacity existing water storage facilities, if needed, is not expected to cause significant environmental impacts but may actually be beneficial to man and natural systems. This can be accomplished in two basic methods. First, the fiscal impact on customers is reduced, in that new property is generally not required and the cost of expanding an existing system is considered to be less than construction of a new facility. Second, the impact on the natural environment will be~~

~~minimized since raw land that might ordinarily be required will be allowed (it is assumed) to remain in its existing state.~~

Additionally, Cal Water released a draft conservation master plan to expand existing conservation programs and develop new programs in the Palos Verdes District to comply with the recently adopted state policy (Senate Bill No. 7) that requires a statewide 20% reduction in per capita urban water use by 2020. Conservation will not only aid in meeting increased demand, but will also help the Palos Verdes District reduce its purchases of imported water, resulting in decreased costs. Cal Water is planning to regularly review the new conservation master plan; make adjustments as appropriate; and implement, monitor, and update activities to ensure goal achievement.

Further, in an effort to continue conserving water, in 2010 the City adopted an ordinance in accordance with the Water Conservation in Landscaping Act. The purpose of the ordinance is to achieve the following:

- Promote the values and benefits of landscaping while recognizing the need to invest water and other resources as efficiently as possible.
- Establish a structure for planning, designing, installing, maintaining, and managing water-efficient landscapes in new residential or commercial development projects and when landscape areas are altered by more than 50% in total area.
- Promote water management practices and water waste prevention for existing landscapes.
- Use water efficiently by setting a maximum applied water allowance as an upper limit for water use and reducing water use to the lowest practical amount.

Energy

Energy systems provide the power necessary to operate and maintain our way of life. Rancho Palos Verdes, like most of Southern California, relies on a dual energy system. Electricity and natural gas are the two primary sources of energy for ~~of~~ the average Rancho Palos Verdes customer. Many of the functions of natural gas and electricity are interchangeable. That is, natural gas or electricity can both be used for cooking appliances, house heating, etc. Natural gas and electricity systems are individually summarized in subsequent paragraphs of this discussion.

Natural Gas

Southern California Gas Company (SCG~~C~~) is a regulated subsidiary of Sempra Energy that furnishes natural gas to the Palos Verdes Peninsula. Although part of the larger Gas Company system, Rancho Palos Verdes is included within two SCG~~C~~ distribution sections, which function principally as sub-administrative districts and are responsible for all lines and service systems which feed from transmission lines to the point of delivery.

~~Because of the lack of industry and major commercial centers, the residential customer is the prime recipient of natural gas in Rancho Palos Verdes.~~

~~Like all other resource-related infrastructure components, the~~ The natural gas distribution system consists of resource facilities and networks. ~~Unlike the others, however, no resource facilities exist in Rancho Palos Verdes.~~ Resource facilities include natural gas processing and transmission facilities ~~were considered to be the as resource facilities, and all~~ that are located outside the Palos Verdes Peninsula area. Natural gas networks, on the other hand, ~~are~~ consist of the physical

infrastructure in place within the City that is used to deliver natural gas to the residents of the City; ~~quite similar to other networks in configuration and,~~ in many cases the natural gas network~~, actually~~ parallels water and electric networks. The gas network is made up of distribution lines (supply, headers, and mains), regulating stations, isolation valves, and extremity gauges.

Discussions with representatives of SCG indicate that, while all gas lines are potentially dangerous if broken or severely damaged. The distribution network in the Portuguese Bend slide area is of critical concern. Most lines are above ground to facilitate the constant inspection and periodic maintenance. Otherwise, no areas of significant deficiencies were found within the city.

~~SCGC~~ Southern California Gas Company utilizes an integrated grid system for much the same reasons that the California Water Service Company area does—uniform flow and efficient service capabilities during maintenance or emergency. Natural gas is pumped, under high pressure, from the resource facility through transmission lines (none in Rancho Palos Verdes) to the distribution network which supplies Rancho Palos Verdes customers.

The facilities which supply and distribute natural gas to City ~~Rancho Palos Verdes~~ customers ~~appear to be satisfactory~~ meeting the present demand. ~~Past projections of major population gains while under County rule prompted SCGC to design and install distribution equipment at maximum standards; therefore, the demand which is expected to be generated by this Plan should be adequately met by the Gas Company.~~ Further expansion of the natural gas infrastructure will be wholly determined by future growth patterns; however, future growth would come from buildout of the remaining vacant developable parcels in the City. Because the infrastructure is already in place, buildout would not present a significant impact to the natural gas network. The impact from growth is further reduced by rebates, incentives, and training programs offered by SoCalGas to help residents save energy and money in existing homes and in new construction. Rebates are offered for energy-efficient appliances or upgrades, such as Energy Star-rated natural gas storage water heaters and tankless water heaters; low-flow showerheads; and installation of attic and wall insulation. There are also low-cost/no-cost methods to lower gas bills and conserve energy by cleaning and adjusting equipment, performing routine maintenance, repairing leaky or disconnected ducts, caulking cracks, proper setting of thermostats, closing curtains during colder times to retain heat, and turning off unnecessary lights. ~~(Parker, interview). The primary concern to natural gas users is not the adequacy of service facilities, but rather a diminishing supply of natural gas and the economic realities associated with it. As gas reserves are reduced, the cost of locating and processing new sources increases, thereby increasing the cost to gas customers. Furthermore, the diminishing gas supplies was seen to be one limiting factor, among many, that called for concern by the City in the development of this Plan.~~

~~Discussions with representatives of SCGC indicate that, while all gas lines are potentially dangerous if broken or severely damaged, the distribution network in the Portuguese Bend slide area is of critical concern. It is for this reason that most distribution lines in the Portuguese Bend area furnish the relatively low pressure of 8 p.s.i. at meter (normal pressure is approximately 30 p.s.i. at meter). In addition, most lines are above ground to facilitate the constant inspection and periodic maintenance. SCGC has integrated a regulation station into the slide area network in order to have sufficient control of a potentially critical situation. No areas of significant deficiencies were found within the city.~~

~~The current impact of the natural gas infrastructure on the Rancho Palos Verdes environment is considered to be small. This is due primarily to the fact that the network is associated with the existing city structure. The environmental impact of future systems is expected to remain relatively small. As with most other utilities, future gas systems will be a part of future activity area development and will therefore be evaluated as total units. However, the cost of providing a diminishing resource of uncertain quantities is a fiscal impact that is continuously increasing. This is borne out by recent rate increases (January and April 1975) charged to gas customers. While the cost of natural gas will inevitably increase, there are two basic mitigating tactics that can be employed. The first is an individual effort by all customers to conserve gas through such actions as, the installation of insulation in homes and businesses and lowering of thermostats. The second is the development of alternative gas sources, such as methane. The Los Angeles County Sanitation District is currently involved in considerable research and development of methane. Methane is a flammable gaseous hydrocarbon which is formed by decomposition of recyclable matter, and is principally found in landfills and sewage treatment plants. Methane gases which are generated at County sewage treatment plants are currently begin used as power sources by the sewage treatment plants themselves and by some industry on a limited basis. In addition, efforts are currently under way (in coordination with a private company) to process methane generated by the Palos Verdes landfill and sell the refined gas to SCGC for distribution into the natural gas network. (Edward, interview). It should be remembered that the impacts and mitigating measures stated above are only temporary at best and further research is needed to determine the impact and associated mitigating measures related to the ultimate depletion of natural gas.~~ Solar hot water heating decreases or eliminates the use of natural gas, which can be one of the largest residential uses of natural gas. Electrical heat pumps, when installed as part of a new HVAC system, may further replace natural gas.

Although the methods described above help conserve energy and costs, further research is needed to prevent the ultimate depletion of natural gas. As such, SCG invests over $7 million each year on research, development and demonstration of new and emerging clean, energy-efficient technologies.

Electricity. Electric power is the other half of the dual energy system currently used in this general area. Southern California Edison Company (SCE) supplies all electrical power to Rancho Palos Verdes and the remainder of the Palos Verdes Peninsula. As with other resource infrastructure agencies, SCE is required to operate with the regulations and standards of the California Public Utilities Commission.

The electric infrastructure is made up of resource facilities and a distribution network. Rancho Palos Verdes is currently served by three resource facilities ~~(66/16 K.V. substations)~~, two of which are located within the City of Rancho Palos Verdes. The power distribution network consists of major source lines ~~(66 K.V.)~~ which run from power generating resource facilities to local substations and the lesser transmission lines, which in turn deliver power to customers in a usable state. The electrical power distribution infrastructure in Rancho Palos Verdes is designed as an integrated grid system, principally for ease of maintenance and uniform current flow; however, these factors are not as acute as that of the water infrastructure.

At the present time, the electrical power needs of Rancho Palos Verdes are being adequately met by SCE. ~~Discussions with SCE representatives tentatively indicate that based on the Land Use Plan at least~~

~~one new substation (66 K.V.) may be required in the southeast portion of the city, presumably near Forrestal Dr and P.V. Drive South (Avera, interview). The alignment of future power transmission lines (66 K.V.) is not known at this time.~~ The only problem area associated with the electrical component of the urban infrastructure exists in the Portuguese Bend slide area~~. No major supply lines (66 K.V.) exist in the slide area; however, several lesser distribution lines are present and~~ since they may be ~~are~~ susceptible to damage from earth movements. Otherwise, n~~N~~o significant electrical deficiencies exist in the city.

Although the impact of the electrical infrastructure on the Rancho Palos Verdes environment is considered to be small, overhead transmission lines, transformers, and associated poles do pose significant adverse visual qualities and potential safety hazards. Overhead wires and associated hardware have caused brush fires and are vulnerable to damage caused by natural conditions, such as high winds, lightning, and tree growth, and man-caused conditions such as automobile accidents, thereby creating power outages and, in some cases, safety hazards if severed or broken. In addition, overhead wires are an unsightly vestige of a necessary infrastructure component, and cause considerable disturbance to views. Efforts to minimize the above impacts are being undertaken by SCE through the undergrounding of most new distribution networks, when economically and physically feasible. Additionally, the City's Development Code requires all utility lines installed to serve new construction and significant remodels to be placed underground from an existing power pole or other point of connection. ~~Technological~~ Limitations do exist in respect to undergrounding utility lines ~~high voltage lines (66 K.V.+)~~; however, the ~~majority of~~ distribution lines can and are being undergrounded. ~~Furthermore, adverse visual impacts of resource facilities (substations) can be reduced by screening with berms and landscaping. In the future, the continuing depletion of contemporary energy sources (i.e. – fossil fuels) will create impacts of substantial proportions unless alternate energy sources can be employed. Nuclear power is the energy source most often referred to as an "alternative" (even though it is currently in use). Other sources, such as solar, wind, tidal, and geothermal are also being studied to determine the respective potentials on a broad scale. Conservation of energy is recognized as an interim mitigating measure which can be used to effectively delay the depletion of fossil fuels.~~

SCE is the nation's largest purchaser of renewable energy from wind, solar, biomass, geothermal, and small hydrogen suppliers. Renewable energy from these sources makes up approximately 17% of the power delivered to SCE's customers. SCE has begun construction of the nation's largest wind transmission project, and when completed, this project will be capable of delivering additional electricity from wind energy facilities and other renewable energy companies. SCE has sufficient contracts in place to meet 20% or more of its customers' energy need with renewable energy, when delivered. In addition, SCE is investing in grid technologies to enable the delivery of more renewable energy into the electricity supply, to provide customers more power to control their energy use and costs, and to help prevent large-scale power outages. The process of developing the smart grid will likely take more than 20 years, with key milestones along the way. Continuous research and resulting advances in technology will help conserve more energy and prevent depletion of a valuable resource. If the annual growth rate remains similar to the previous years, SCE will be able to meet this projected demand because it is continuously upgrading and researching methods to preserve and provide more energy to meet the future needs of the City.

The City also provides expedited ministerial approval for solar panels, which is a growing part of the electrical infrastructure. Increased use of solar panels decreases the dependence on SCE, especially during the summer.

4.2 Disposal/Recovery Systems

Sanitation

The sanitation component of the ~~urban~~ infrastructure is divided into two basic groups. These are sewer~~age recovery~~ systems and the solid waste ~~refuse collection~~ systems. Each sanitation component is comprised of a system of networks which function as collecting agents and recovery facilities which store, treat, and dispose of waste.

~~Sewerage~~ Sewer Systems

The City owns the sewage collection system; however, maintenance of the system is a joint effort between the City and the County. With regards to the Abalone Cove sewer system, this is the only system that is currently owned, operated and maintained by the City of Rancho Palos Verdes.

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 Plant (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 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.

The County Sanitation Districts of Los Angeles County ~~(Districts)~~ have prepared a facilities plan to meet the wastewater management needs of the Districts' Joint Outfall system (JOS). The plan, known as the JOS 2010 Master Facilities Plan (2010 Plan), addresses the need to upgrade the level of treatment of all JOS flows to full secondary treatment pursuant to a Consent Decree negotiated between the Districts, the United States, the State of California, and other parties. The 2010 Plan also addresses the need to expand wastewater treatment plants to accommodate projected growth in the JOS service area through 2010 and to provide for bio solids management and water reuse opportunities.

Citywide sewer system: The County collects a fee from property owners in the City for the maintenance and repair of the sewer system. With the exception of Abalone Cove, since incorporation, the County has maintained the sewer system in the City. The maintenance and repair responsibilities for the Abalone Cove area are borne by the City. Maintenance and repair activities that the County Department of Public Works, Consolidated Sewer Maintenance District, performs include video inspections, line cleaning, repairing structurally deficient segments of pipe, unplugging blockages, and cleaning up after overflows. The County also performs visual inspections on each manhole in the City at least once per year. This work is funded with an annual contribution from each parcel connected to the City's sewer system. Although the City owns the sewer collection system, the County Department of Public Works is

responsible for the continuing operations of sewer collection system and for identifying and correcting pipeline capacity-related problems found in the system.

Within the City of Rancho Palos Verdes, there are approximately a total of 790,000 linear feet of wastewater conveyance pipelines, 17 primary lift stations, 44 grinder pumps (all part of the Abalone Cove sewer system), and approximately 3,707 manholes. The gravity pipe ranges in size from 8 inches in diameter to 15 inches in diameter.

The collection system also consists of privately owned laterals that extend from individual private properties to the City owned collection system located in the street, right of way or easements. Private property owners, with the exception of the Abalone Cove landslide area, are responsible for the operations and maintenance of their individual service laterals.

Abalone Cove sewer system: The Abalone Cove Sewer System is currently owned, operated, and maintained by the City. Because the City is responsible for all aspects of operating and maintaining this system, the County collects a fee from property owners, then reimburses a part of the fee to the City.

The Abalone Cove Sewer System consists of 44 grinder pumps, with 14 of them each serving one parcel, and three duplex grinder pumps serving two or more residences. The three duplex grinder pumps are located on Abalone Cove Shoreline Park, off West Pomegranate Drive, and off Vanderlip Road. The system was installed in 2001 to replace septic systems in the landslide area. There are 130 manholes, one diversion structure, approximately 19,000 linear feet of gravity pipeline, 19,615 linear feet of low-pressure pipe, and 2,505 linear feet of force main. The low-pressure sewer pipelines in the Abalone Cove area range from 1.25 inches to 4 inches in diameter.

Existing Conditions: The majority of the system (over 73%) is now more than 40 years old and made of vitrified clay pipe (VCP). The average design life for VCP is generally accepted as 50 years. This leaves the remaining design service life for most of the system at less than 10 years. The lateral pipes are made of metal and are almost at capacity. As a result, there will most likely be an increasing trend in pipe structural failures with time.

Sewer System Master Plan: The City conducted a citywide sewer inspection in 2003 that led to the preparation of an updated Sewer Master Plan, which included a capacity analysis, maintenance schedules, and capital improvement plans. The Sewer Master Plan was updated in 2004 to comply with the Regional Water Quality Control Board requirements. The information contained in that update was used to develop the City's Sewer System Management Plan, which was adopted by City Council action on July 21, 2009. The capacity analysis that was performed on the system revealed eight (8) pipe segments throughout the City that require additional capacity to minimize the likelihood of sanitary sewer overflows.

The Abalone Cove system is relatively new, but as the system continues to age, additional maintenance work will be needed. Funding for maintenance of the Abalone Cove Sewer System is currently from a user fee in addition to a City subsidy. The full operational costs associated with the system will be further evaluated.

The collection system has been thoroughly re-evaluated through a combination of physical inspection, data analysis and computer modeling. Three primary needs have been identified, which are related to (I) Physical condition of the system (2) Special considerations for the Abalone Cove Sewer System and (3) Hydraulic Capacity Projects.

The physical inspections revealed continued problems with the old, cracked pipes and root intrusion. These problems are currently being addressed through systematic rehabilitation by the County; however it was recommended that the City encourage the County to expedite their activities knowing the physical condition of the entire system. This project anticipates the City performing half of the remaining inspection and cleaning of the system through specialty contractors.

The Abalone Cove area is in need of special attention to assure its improved funding and operations. As currently operated, there is uncertainty regarding the funding, planning, operations and maintenance of the system. A special study was performed by Harris and Associates to identify the primary concerns and to address these issues through updating the separate Abalone Cove Sewer System element of the City's Sewer System Management Plan. The update will include the funding levels necessary for sustainability and the assignment of operational responsibility to the most equitable party.

The Hydraulic Capacity Analysis as performed through hydraulic modeling revealed few areas in need of immediate attention. The areas flagged should be carefully watched and any improvements coordinated with other public works activities.

Ultimately, since the City of Rancho Palos Verdes has little developable land left, the future flow predictions will not increase significantly compared to the current flow. According to the US Census data, the City's population increased by approximately 1.9% between 2000 (41,643) and 2013 (42,448), resulting in a population figure that is similar to the City's population in 1990 (41,659). According to the Department of Finance, the City's population is predicted to increase to 44,893 in 2030, representing an increase of approximately 5.5% over the next 20 years. The population increase of 5.5% is considered minimal that will result in a negligible increase in demand for such service.

~~In Rancho Palos Verdes, the sewerage system is maintained and operated by three agencies: the County Engineer, County Sanitation District #5 and the South Bay Sanitation District. The County Engineer is responsible for the collection of sewage from its source of origin through a network of sewerage lines. The Sanitation Districts, in turn, are responsible for operating and maintaining the network of sewerage trunk lines, treatment facilities, and the method of disposal. Although these two agencies are separate entities which provide different types and levels of service, all projects and schedules are jointly coordinated to ensure maximum efficiency. To facilitate understanding of the sewerage system, all networks operated by the County Engineer will be considered as primary collection networks, while all networks and facilities operated by the Sanitation District will be referred to as secondary collection networks and recovery/disposal facilities.~~

~~The configuration of the primary network is largely dependent upon the topography of the area being served; however, most of the Rancho Palos Verdes sewerage network takes on a multi-linear structure~~

with sundry branches serving local streets. The secondary network, however, is strictly a linear system, with no branches or forks except at the numerous intersections with the primary network. Ideally, sewage is collected via a gravity flow system; however, because of the diversity of topography in Rancho Palos Verdes, several pumps have been placed at strategic locations to aid in the collection process. Recovery/disposal facilities, otherwise known as sewerage treatment plants, are normally close to the point of disposal. In the case of the Sanitation Districts the treatment plant is located well outside the boundaries of Rancho Palos Verdes. The sewage treatment process is quite complex, and a detailed discussion is beyond the scope of this report. The following is a cursory description of the process: After collection, the sewage is routed through a series of steps which separate the various constituents into solid and liquid states, which, in turn, are processed for disposal.

Currently, the treatment plant gives all sewage a minimum of "primary" treatment before disposal or use. After treatment, some of the by-products generated by solids become usable. For example, as by-products methane can and is being used as a power source, and processed sludge (solids) is being used as fertilizer. Liquid wastes, after being treated, are discharged through an ocean outfall at Whites Point, near the southernmost boundary of Rancho Palos Verdes.

At the present time, both primary and secondary sewerage networks which serve parts of Rancho Palos Verdes are adequate. Sanitation Districts representatives state that based on the densities set forth in the Land Use Plan, the trunk line and treatment plant are capable of maintaining adequate service to Rancho Palos Verdes customers. It is further stated that the existing pump station in Portuguese Bend slide area will have to be replaced and/or enlarged in order to meet any increased demand and that new pumps will be required for all new activity areas below the trunk line. (Christensen, interview).

As with other infrastructure components, the major problem area lies within the Portuguese Bend slide area. All sewerage lines which cross the area are above grade, unsightly, and subject to potential breakage. A break in the sewerage network would mean the spilling of raw sewage, because there are no shut-off valves in the sewerage system. The absence of shut-off valves is not peculiar to Rancho Palos Verdes, but rather common to the entire system. The linear configuration of the network does not allow for the use of shut-off valves because the shutting off of a portion of the system would mean the backing up and possible overflow of sewage "upstream." In the case of the slide area, however, if a severe break occurred in the trunk line, the pumping station could be turned off, thereby acting as a shut-off valve. Representatives of the Sanitation District indicate that this would only be done in a case of extreme emergency (Christensen, interview).

Another problem area lies not within the boundaries of the City, but rather off the Rancho Palos Verdes coastline. Currently, there are three waste water outfalls which are immediate concern to the coastal environment of Rancho Palos Verdes. Los Angeles County Sanitation District jointly operates two waste discharge outfalls off the Palos Verdes coastline at Whites Point. Approximately 356 MGD (million gallons per day) of primary treated waste water is currently being discharged. The adverse impacts of pollutants discharged into the marine environment are significant enough to warrant action, such as the passage of Federal law that requires all waste water have secondary treatment by 1977. Discussions with representatives of the Sanitation District indicates that efforts are now underway to improve the treatment of water discharged from the White Point outfalls (Christensen, interview), however, there

~~appears to be some doubt as to whether or not the Federal standards will be met by 1977, or that the standards will ever be met (California Coastal Zone Conservation Commission, Coastal Zone Plan Element: Marine Environment, Final Draft, pg. 111-4). Marineland of the Pacific, which is located in Rancho Palos Verdes, also operates a waste water outfall. This private outfall is actually part of the display tanks' salt water replenishment system and acts to discharge "used" ocean water. The ocean water being discharged does contain some chemical wastes, added to maintain an attractive display system. The chemicals include chlorine and copper sulfates (algacide), which are regulated and monitored by the Los Angeles Regional Water Quality Control Board to ensure that water quality is maintained.~~

~~When viewed from the standpoint of being part of a much larger activity, the impact of the existing Rancho Palos Verdes sewerage system is relatively small, with the most obvious impact being the adverse visual quality of the exposed trunk line in the Portuguese Bend slide area. This impact could be reduced through a landscaping program or totally mitigated by eliminating the trunk line from the area. A less obvious, yet environmentally important impact is the city's contribution to the pollution which occurs in the ocean due to the pollutants discharged fro the sewage outfalls. The current amount of sewage generated by the city is less than 1% of the total discharged by the Sanitation District. While any pollution of the marine environment is of concern, the primary concern is the overall quantity and condition of sewage that is discharged. The most practical mitigating measure, at this time, is implementation of a minimum of "secondary" treatment of all sewage discharged into the ocean.~~

~~Based on the Land Use Plan, the impact of the future sewerage system is not expected to change dramatically, one way or the other. The area which is designated as a "specific plan" zone on the Plan may generate additional fiscal and energy consumption requirements from the expected use of pumps to push sewage to the trunk line. A more thorough analysis of the impacts and mitigating measures will be an integral part of the development of that specific plan.~~

~~As an alternative method of disposing of sewage, septic tanks generally have and will continue to be effective, particularly in rural areas. Septic tanks are found in two general areas. Portuguese Bend has the largest concentration of septic tanks, while the remainder are scattered in various eastern sections of the City. Given adequate maintenance, satisfactory soil and geologic conditions, and low residential densities, septic tanks rarely cause major problems to the general public. Landslide areas, however, are of special concern. Evidence suggests that ground water intrusion from various sources may act as a "lubricant" and may be a contributing factor to landslides.~~

Solid Waste

The collection of refuse in Rancho Palos Verdes is a service which is carried out by two ~~several~~ private companies. The City is divided into two service areas, where one company services the Portuguese Bend and the Coastal zone areas, and another company services the remainder of the City. ~~Each company provides refuse collection services for specific areas in the City.~~ This component of the infrastructure is unlike others, in that the companies charged with the collection of solid wastes acts only as the mediums~~s~~, while the actual refuse collection network is the system of streets and highways, and the County landfill acts as the disposal facility. Simply stated, the refuse collection system involves

the collection of solid wastes from customers and the delivery of wastes to the landfill, where it is disposed of.

Disposal of solid waste occurred at the Palos Verdes Land Fill, which operated under permit by the Sanitation Districts as a sanitary landfill from May 1957 through December 1980. Disposal to this site has since ceased, and solid waste disposal now occurs at various landfills throughout Southern California, which meet the needs of the City. ~~Study of the refuse collection infrastructure suggests that the service companies are effectively meeting the present demand, as is the landfill here on the Peninsula.~~ Since the City's incorporation, due to increased environmental awareness and State laws that have mandated reductions in the amount of solid waste being diverted to landfills, recycling programs have been implemented. To facilitate recycling, residents are provided with containers for recyclable items (glass, aluminum, paper, etc.), for green/yard waste, and for all other refuse material. The City also helps to promote and encourage recycling by its residents with a monetary award through the "Recyclers of the Month" Program.

With an environmental consciousness among its residents coupled with State mandates requiring reductions in the amount of refuse that is diverted to landfills, the limited potential ~~The~~ future population ~~increases~~ increase in Rancho Palos Verdes should pose no problems in relation to the collecting of refuse~~; however, the landfill will meet its projected capacity by about 1980. Therefore, alternative sites (existing and proposed) will be needed for refuse disposal.~~

~~The impacts of refuse collection on the Rancho Palos Verdes environment are considered to be minimal, primarily since collection activities are limited to existing developed areas, and then only occasionally for short durations of time.~~

~~The increased environmental awareness of the general public has generated much study into the various methods of waste disposal. This interest has resulted in the growing demand for the development of waste recycling programs. In Rancho Palos Verdes, the Federal Government, in coordination with the American Association of University Women and a private refuse collection company, has established a pilot program for the separate collection of newspapers, in addition to that of common refuse. The program is designed so that customers in a given area may set aside newspapers for collection and eventual recycling. Furthermore, a coordinator of the program suggests that based on the acceptance and feasibility of the service, a city-wide program could be implemented which might include glass, aluminum, and other recyclables. (De Christofaro, interview).~~

Flood Control and Storm Drain Systems

The flood control infrastructure is a system of channels and drains which guide and control the flow of surface water, in selected locations, which result from natural or man-caused factors. ~~In Rancho Palos Verdes, the flood control infrastructure is the responsibility of two contracting agencies: the Los Angeles County Flood Control District and the Los Angeles County Road Department.~~

The City of Rancho Palos Verdes is within the Los Angeles Flood Control District. The Flood Control District was established to provide flood protection, water conservation, recreation and aesthetic enhancement within its boundaries and is the responsibility of the County of Los Angeles Department of Public Works. The Watershed Management Division is the planning and policy arm of the Flood

Control District. The Public Works Flood Maintenance and Water Resources Divisions, respectively, oversee its maintenance and operational efforts.

In 1998, a Master Plan of Drainage was developed and subsequently updated in 2004 (2004 Master Plan; County of Los Angeles 2004). In 2015, the City updated the Master Plan of Drainage acknowledging and taking into account the modifications and/or additions to the storm drain system that have occurred since publication of the 2004 Master Plan.. The updated Master Plan covers estimates to correct the deficiencies found in a citywide study of various pipes that make up the system. A 10-year spending program has been developed in order to address deficiencies in the storm drain system.

~~Unlike other components of the Rancho Palos Verdes physical infrastructure, the flood control component is not a continuous system of networks which have a common origin, but rather an intermittent series of individual networks which empty into the natural environment. The area at which a man-made flood control system comes into contact with the natural system, such as ocean or canyon, is referred to as an interface, and is of special concern in an area like Rancho Palos Verdes.~~

~~The basic purpose of flood control facilities is to protect people and their possessions from the sometimes hazardous results of periodic flooding. The topographic characteristics and location of Rancho Palos Verdes preclude the possibility of the type of flooding experienced in some of the lower, flat areas in Southern California; however, the potential for flash flooding in the numerous arroyos does pose definite problems. (See Safety section of the Urban Environment Element.)~~

~~The flood control facilities which currently exist in and around Rancho Palos Verdes appear to be functioning in a satisfactory manner. There are however, areas of significant deficiencies. The area of the most immediate concern is Altamira Canyon. This canyon bisects the existing Portuguese Bend residential development, runs under Palos Verdes Drive South, and continues on to Abalone Cove. Numerous complaints of "boulders", mud, and sundry debris being washed down the canyon during rain storms have been recorded, and indications are that this canyon deserves a high priority of concern by the FCD. The other major problem area is located where San Pedro Canyon crosses Miraleste Drive. Reports of flood hazard on the street require that this location also be given special attention by FCD. The location and density of future development, as projected by this Plan, will no doubt require that flood control techniques be implemented at these and other water courses. Both the Flood Control District and the Road Department have plans for additional flood control networks in Rancho Palos Verdes, however, the funding of such projects is based on a flexible priority system and therefore no construction dates can be assigned.~~

The impacts of existing and future flood control networks are basically related to pollution and erosion at flood control/natural system interfaces ~~and~~ in addition to visual quality. ~~Pollution and excessive erosion are two major problems at flood control/natural system interfaces.~~ Pollutants which can enter the natural environment include: petroleum products, fertilizers, pesticides, and other chemicals. These pollutants are generally washed from impervious surfaces such as streets and driveways, through gutters, drains, and flood control channels into natural systems, and eventually into the ocean, thereby causing damage to the ecosystem. Unfortunately, little can be done to alleviate this problem. Strict enforcement of litter and pollution regulations is the best control method, at this time. Excessive erosion

at the interface, on the other hand, can and should be controlled. This condition is caused when water which is being carried in a concrete channel is allowed to gain an unnatural velocity, meets the comparatively soft and irregular conditions of the natural system, thereby creating excessive erosion. The techniques used to slow the water are relatively inexpensive and easily installed. One of the most fundamental methods includes digging a small horizontal ditch fairly close to the upper edge of the property to drain into a natural watercourse, onto street pavement, to a well vegetated area or ~~the~~ creating~~on of~~ a water resistance system, such as protruding rocks or buffers located immediately before the interface areas. Distributing straw or wood chips to soil helps increase the organic content and is effective in holding the soil in place. Additional temporary flood protection on hillsides or slopes can be gained by using inexpensive plastic sheeting that should be overlapped like shingles and securely tied or weighted down so that the majority of the water does not reach the soil. Shrubs may be planted through plastic sheeting and perennial grasses can be used for unstable soil areas. ~~Adverse visual quality can be mitigated through the implementation of landscaping programs designed to hide or soften the channels. Adverse visual and environmental impacts can be reduced by retention of natural water courses. In these cases, some alternative flood control techniques, such as intermittent wooden (e.g. – railroad ties) or rock check dams of limited scale could be employed.~~

The flood control/storm drain system is not a continuous system of networks that have a common origin; rather, it is a system composed of a discontinuous series of individual networks. Most of the City drainage facilities were constructed by the County Department of Public Works prior to incorporation of the City. There are a number of facilities still owned and maintained by the County Department of Public Works. In 1998, the City completed a comprehensive Master Plan of Drainage, which was later updated in 2015.

Additionally, the City's largest project to date - San Ramon Canyon Storm Drain Project, which involves the construction of significant drainage restoration work to stabilize Palos Verdes Drive East and Palos Verdes Drive South was completed in 2014.

The fiscal impact of future flood control networks will be borne by the City. Methods that could be used to minimize cost include:

- Retention of natural water courses, where practical
- Planning for low densities in flood water generating areas as well as flood water impacted areas
- Coordination between communities and agencies which impact each other

4.4 Communication Systems

The communication~~s~~ component of the City infrastructure system is a multifaceted and highly complex system of resource facilities and networks which aid in the support of our economy and life style. Once considered no more than luxuries or convenience items, communication~~s~~ systems have developed into a very necessary function of our society. Communication systems disseminate news and information, relay personal and business messages, provide audio and visual entertainment, and ~~perhaps the most important function, provide a is~~ are a crucial tool to ~~means of~~ transmitt~~ing~~ and receive~~ing~~ emergency messages.

~~Understandably, a study of this type cannot discuss all communications systems that are currently being used. Therefore, a selective analysis of the sundry communications systems was undertaken and those which require direct contact with the physical environment and/or significantly affect the communicative capabilities of the general public were selected for discussion.~~

~~For the purposes of this study, the selected~~ The following communication~~s~~ systems were divided into two basic categories. The first category includes systems in which the transmission network is an element of the physical infrastructure, for example telephone and cable systems. The second is the broadcast communications category, which consists of those systems which primarily use the air-waves to transmit signals. This category includes, radio, broadcast television, and microwave systems.

Cable Transmission Systems

Telephone/Wireless Telecommunication.

The telephone is ~~common to most residences and places of business in Rancho Palos Verdes and in that respect is~~ the most accessible and widely used communication system available to the general public. The City of Rancho Palos Verde is served by ~~two telephone companies~~ Verizon and AT&T for their landlines. ~~General Telephone Company serves all but the easternmost portion of the City (Miraleste area), which is served by Pacific Telephone Company.~~ However, individuals can contract their cell phones and laptops with any company of their choice and are not limited to Verizon and AT&T. Cellular companies are always improving the wireless communication in the City through the construction of cell towers. Both Verizon and AT&T ~~Pacific Telephone and General Telephone~~ are private utilities, and as such, must operate and set rates in accordance with the standards and regulations of the Public Utility Commission. Verizon services most areas of the City while AT&T services the easterly portion of the City that was annexed in 1983. With the advancement of wireless telecommunication technology, carriers continue to update existing facilities and telecommunication antennas are installed primarily in the public right-of-way, and in some cases on private property.

The telephone system in Rancho Palos Verdes basically consists of a network of transceivers (telephones), transmission lines, and switching centers. The configuration of the telephone communications network is defined as a modified linear system, that is, a major line to which all branches are directly attached. Verizon has one switching center within the City (5841 Crest Road), which allows contacts to and from other telephone companies. Both Verizon and AT&T currently have the standard copper lines and the newer fiber optics (FIOS – Verizon or U-Verse – AT&T) line available to customers. Unlike the classic copper lines that only service landline telephones, FIOS/U-Verse allows a single strand of fiber to support high speed internet, video, and telephone. ~~The telephone companies own four sites in Rancho Palos Verdes; however, only one functions as a switching enter. The switching station is owned by General Telephone and is located on Crest Road, near Highridge Road. One of the remaining sites is also owned by General Telephone and holds a radio transmitter. The other sites are owned by Pacific Telephone. Neither function as switching centers, but rather as radio transmission facilities. In addition to these sites, utility easements are dispersed throughout the area.~~

~~An analysis of the present telephone communications system indicates that all developed areas of the City are adequately served. Furthermore, representatives of both telephone companies point out that service will remain adequate, based on Land Use Plan. (Lewis, Interview – Smith, Interview.) General~~

~~Telephone, which serves the largest portion of the City, has plans to increase the capacity of the existing switching center through the installation of automatic equipment (Lewis, interview).~~

~~State law mandates that all cities must develop and implement a single emergency services telephone number system by the end of 1982. Commonly referred to as the "911 System," the purpose of the system is to provide a statewide emergency number (911) which will shorten the time in the emergency response cycle. Rancho Palos Verdes has agreed to participate with Los Angeles County in the joint development of computerized 911 system. This computerized system would allow for automatic routing of emergency calls to the proper agency. (See Safety section of Urban Environment Element.)~~

The environmental impacts which result from the telephone networks are analogous to those experienced with the electric power infrastructure. Because the systems most often utilize corresponding spaces, the impacts are one and the same. As discussed previously, the key impacts are related to the use of overhead wires, which are visually unattractive and can be a safety hazard. Both Verizon and AT&T indicated that there are no future plans to underground the existing utility lines due to high costs. ~~General Telephone and Pacific Telephone are both acutely aware of the problems posed by overhead wires and have related their willingness to cooperate wherever possible by undergrounding transmission lines.~~ The fiscal impact of conventional telephone communication (maintenance, installation, and service costs) is absorbed by the customer, and rates increases will be subject to the Public Utilities Commission. ~~The City and County are jointly responsible for costs generated by the planning, installation, and maintenance of the 911 system. Since the 911 system is in the preliminary planning stages, no fiscal assessment has been determined. State funding has been applied for; however a representative of the County's Communication Department states that no funding has yet been appropriated (Hansen, interview).~~

Cable Television

Cable television is a system of providing television to consumers via radio frequency signals transmitted through fixed optical fibers or coaxial cables located on the subscriber's property. A majority of the cable television companies are also offering high-speed internet, digital telephone, and similar non-television services. In Rancho Palos Verdes, cable television is supplied by Verizon, AT&T, and Cox Communications. All three companies use fiber optic lines to provide instant access to numerous television channels, high-speed internet, and digital telephone to customers. There is also satellite TV provided by companies such as DirectTV and DishNetwork who can also provide similar access to television channels. The only difference is that with satellite TV, a satellite dish will need to be installed. The City cannot restrict the installation, maintenance or use of antennas used to receive video programming per the Federal Communications Commission's Over-the-Air Reception Devices rule. The rule applies to video antennas including direct-to-home satellite dishes that are less than one meter in diameter, TV antennas, and wireless cable antennas.

~~Cable television is a system of transmission facilities and distribution lines which furnish subscribers with audio-visual signals to replace broadcast television. In Rancho Palos Verdes, cable television is supplied by Palos Verdes Cable Television, which operates under the terms of a franchise with the City. A portion of the City is currently supplied with cable television by Dimensions Cable (parent company T.M. Cablevision).~~

~~Currently, the fundamental basis for subscribing to cable television is due to poor reception of broadcast television, generally caused by geographical location (i.e., the lower elevations of the south and southeast). To this date, most development has coincidentally occurred in locations which receive broadcast television reasonably well; therefore, the need for cable television has been small. This limited success is the reason that this discussion is not related to current usage so much, but rather from the standpoint of cable television as a potentially important media device in the future.~~

~~The future of audio/visual communications in our daily lives can only be guessed, but all indications are that the need will continue to grow. All new cable television networks are being installed with two-way audio capabilities. That is, all transmission lines have the ability to transmit as well as receive audio signals in the form of voice or digital data transmission. Furthermore, the potential for two-way video is being studied and may someday also become reality.~~

~~As an alternative source of communications, cable television offers numerous advantages, of which the following are the most important:~~

- ~~The ability to isolate a particular area for service~~
- ~~The potential for two-way audio/visual communication~~
- ~~No need for antennas~~

~~The primary disadvantages of cable television relate to the reliance on the cable for transmission of the signal. The disadvantages include:~~

- ~~The cable is subject to possible damage~~
- ~~Overhead cables create adverse visual quality~~

~~The impact of cable television on Rancho Palos Verdes is currently very small. Due to the cooperation and coordination with telephone companies and electric company, the future impacts are expected to be identical to those incurred by the respective utilities (see "Electric" and "Telephone" sections of the infrastructure).~~

Broadcast Communications

Broadcast communications are those systems which have no wires or transmission lines ~~infrastructural network to transmit signals~~, but rather transmit signals through the air-waves. Of the three primary broadcast systems, radio and television are by far the most popular, while microwave remains a more specialized communications medium.

Radio and television communication systems are operated by privately owned companies which supply "free" audio and audio/visual communication to those persons with appropriate receivers. These broadcast systems are used primarily for the dissemination of news~~, and~~ information, and ~~for~~ entertainment. ~~The use of radio and particularly television for educational purposes is growing.~~ No ~~resource facilities (~~transmission facilities~~)~~ exist in Rancho Palos Verdes.

The County of Los Angeles currently owns and operates a microwave station near the intersection of Highridge and Crestridge Roads. The facility is a broadcast communication system designed to relay signals to and from the Rancho Palos Verdes area. The prime users of the facility are the County Fire and Sheriff Departments and other County agencies. ~~Immediately adjacent to the County facility is the site of a proposed Southern California Edison (SCE) microwave facility to be completed in August 1975. The SCE facility will be primarily used to relay operational and administrative transmissions. (SCE - Draft E.I.R.)~~ The impact of broadcast systems in Rancho Palos Verdes is considered to be relatively small and related primarily to the adverse visual qualities of the microwave antennas, which ~~and the widespread use of television antennas~~. ~~Microwave facilities~~ can be mitigated through the use of landscaping techniques. ~~Television antennas can be mitigated through elimination.~~

5 Military Airports and Ports

There are currently no airports or ports in the City designated for military purposes. However, the United States Coast Guard is located next to the Point Vicente Interpretive Center. The U.S. Coast Guard often utilize the coastal cliffs, Point Vicente Interpretative Center, and City Hall to conduct training exercises.

DRAFT CONSERVATION & OPEN SPACE ELEMENT

comparison to current General Plan Natural Environment Element and the Cultural Resources section of the Socio/Cultural Element (4/26/2018 version)

Note: This document compares the proposed Draft Conservation & Open Space Element with the current General Plan Natural Environment and Cultural Resources section of the Socio/Cultural Elements. Changes are shown as follows: bold underline text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

~~Natural Environment~~ V Conservation & Open Space Element

The State of California requires both a Conservation Element and an Open Space Element to be included in every local government general plan. As many of the goals and policies of the City of Rancho Palos Verdes and the requirements of the State are related, these two elements have been joined into one element for this General Plan.

Open space is one of the prominent features that defines the character of Rancho Palos Verdes, and plays a large role in the City's residents' quality of life, and non-residents seek to visit. Conserving open space provides opportunities for public outdoor recreation, viewshed protection, and conservation of natural and biological resources, which 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 nature preserve. The City seeks to create a system that integrates parks, trails, natural habitats, and cultural resources into a series of networks for residents and visitors.

1 Goals

The goals of the Conservation and Open Space Element are as follows:

1. ~~It is the goal of the City of Rancho Palos Verdes to~~ 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 environment and be accomplished in such a manner as to maximize the protection of it.

2. ~~The City shall strive T~~to protect and preserve all significant archaeological, paleontological, and historical resources within the City.

~~This section discusses the natural physical environment of the City of Rancho Palos Verdes and represents an extension of the continuing planning process which initially inventoried the natural resources. It provides parameters and policies to deal with the environmental management of the community.~~

~~The approach that has been taken is to develop a plan which illustrates and describes all facets of environmental relationships and avoids the situation of conflicts and complexity inherent in traditional, function-by-function planning methods which deal with separate elements. For this reason, this study deals with the natural resources of Rancho Palos Verdes and related considerations, and is not the customary open space and conservation element of the typical general plan, but is a single unit handling the entire spectrum of the natural physical environment pertinent to the General Plan. The approach parallels that taken with the urban factors and social factors portions of the General Plan which also deals with generic, logically interacting groups of "traditional" plan elements, rather than individual elements.~~

The basis for this ~~proposed Natural Environment Element~~ is ~~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~~ that must exist among them. This Element provides a discussion of ~~The format which follows discusses~~ each of these ecological and environmental units as ~~they apply~~ it applies to ~~Rancho Palos Verdes~~ individually to Rancho Palos Verdes, ~~as detailed factors,~~ then in appropriate classification combinations, ~~and finally as an overall Natural Environment Element which, in concert with the urban and social factors components, form the General Plan~~. Each of these combinations is classified into two categories: (1) preservation of natural resources and open space, and (2) public health and safety. These two categories are combined to develop the Conservation and Open Space Element, which becomes a guide for the City's natural environmental resource management policies.

This Element also focuses on cultural resources (paleontological, historical, and archeological resources) and their conservation. Finally, this Element includes an inventory of existing open spaces within the City that are beneficial to the City's residents and the residents of the entire region.

2 Policies

This section includes those policies that result from the analysis of data, goals, and recommended relationships between people and their use of the land resource, which have been the subject of this element of the General Plan.~~It is the policy of the City to:~~

2.1 Conservation ~~Policies~~

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

1. Permit development within the Sea Cliff Erosion Area (Resource Management, 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 following established geological industry standards.
4. ~~Allow no further development involving any human occupancy within the active landslide area (RM 4).~~

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~~ Resource Management District.
6. ~~Develop, as part of any specific area planning study, a more detailed definition of the limits and composition of any RMD's related to Health and Safety, with particular reference to the active/old landslide areas, the sea cliff erosion setback, and critical extreme slope areas.~~
7. 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.
8. 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).
9. In addition to the State-designated Abalone Cove Ecological Reserve, ~~Encourage establishment of~~ establish the rocky intertidal areas throughout the remainder of the City's coastline as ~~a~~ marine reserves and ~~strict e~~nforce~~ment be applied to~~ all regulations concerning marine resources (Resource Management District~~s containing Marine Resources~~ RM 7).
10. 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.
11. ~~Encourage~~ Require developments within Resource Management Districts containing Natural Vegetation (RM 9) to revegetate with appropriate locally native ~~material~~ plants wherever reasonably possible whenever clearing of vegetation is required.
12. Stringently regulate irrigation, natural drainage, and other water related considerations in both new development and existing uses affecting existing or potential slide areas.
13. ~~Provide incentives to enable unique and innovative~~ Consider development exceptions in areas otherwise precluding development for health and safety reasons, only if the development can establish ~~its engineering feasibility~~ 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.
14. ~~Provide a listing~~ Based on current information from State and Federal Agencies, the City should periodically publish a list of toxic chemicals such as fertilizers, insecticides, and herbicides, which are determined to be damaging to the environment, with particular concern for the marine environment~~, at current use levels within the City (based on water sampling, etc)~~. These lists should be distributed to all ~~potential major users in the City, with use criteria or prohibition clearly indicated~~ 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.
15. A Pest Management Plan should be encouraged to be included into the Landscape Plan so as to avoid usage of toxic chemicals by proper plant selection, irrigation methods, establishing intervention thresholds, monitoring and identification of pests and using prevention measures before resorting to control by using chemicals.
16. 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, especially fire retardant natives such as saltbrush near fuel modification setback areas
17. Require a master landscape plan, with an Integrated Pest Management Plan, for any proposed development ~~showing the retention/~~demonstrating enhancement and protection of natural vegetation proposed, selection of new complementing vegetation, and ~~all efforts involving retention~~enhancement~~/protection~~ of ~~hydrologic factors, vegetation, and wildlife~~ the environmental factors.

18. ~~Require all projects with any natural resource management district factors falling within their project boundaries to deal with these areas in detail in an Environmental Impact Report.~~

~~Policies Specific to the~~ Natural Communities Conservation Plan (NCCP)/Habitat Conservation Plan (HCP)

16. Implement the Rancho Palos Verdes NCCP/HCP.

General ~~Policies~~

17. Continue to implement the City's Natural Overlay Control District and its performance criteria.
18. Continue to implement the natural environment policies of the Coastal Specific Plan.
19. ~~Develop a resource management ordinance to accompany the zoning ordinance, grading ordinance, and any other regulatory vehicles.~~
20. ~~Develop a specific set of planning and design criteria for natural environment considerations with new development, and in upgrading existing areas for use by architects, planners, engineers, and others in a handbook/checklist form.~~
21. ~~Develop and integrate a specific review process covering the natural environment aspects of any proposed development with the normal review processes associated with proposed development.~~
22. ~~Consider in more detail natural environment factors in subsequent specific area studies as an integral part of these studies.~~
23. ~~Consider the establishment of~~ Collect baseline data for air ~~quality~~ and water quality in order to develop standards for ~~future enforcement of regulations specific~~ evaluation of the impacts of current or proposed development in and adjacent to Rancho Palos Verdes
24. ~~Consider~~ 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.
25. 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

26. Develop balanced programs to provide greater safe public access to the coastline consistent with protecting the environment.
27. Promote programs to encourage volunteer efforts to repair, protect and improve the environment.
28. 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.
29. Ensure the maximum preservation of the natural scenic character and topography of the City consistent with reasonable economic uses.

2.2 Cultural Resources ~~Policies~~

30. ~~Monitor the State's activities for developments which could provide funds for~~ Seek funding for the identification, acquisition, preservation, and/or maintenance of historic places and archaeological, paleontological or geological sites.
31. Encourage the identification and protection of archaeologically sensitive areas and sites – making such information available only to those individuals qualified under guidelines set forth by the Office of Historic Preservation.

32. 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.
33. Forward Environmental Impact Reports to the University of California at Los Angeles, the Society for California Archaeology's (SCA) California State University, Fullerton, SCCIC's clearinghouse for this area, and to California State College at Dominguez Hills.
34. 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.
35. Actively press for Point Vicente Lighthouse to be included in the National Register of Historic Places. Attempt to acquire the Point Vicente Lighthouse property as an extension of Point Vicente Park.
36. Consider supporting the addition of appropriate historic sites in the City to the State and National Historic Register.
37. Require that any artifacts or material of interest that are uncovered as a result of a project requiring City permits be offered to the Point Vicente Interpretive Center for inclusion in its collection as permitted by law. The Center should work with regional entities to share items of particular significance.

2.3 Open Space and Recreational Resources Policies

38. Provide access to all public recreational land.
39. Promote and/or continue to sponsor recreation programs within the City considering the diversity of needs.
40. Encourage local, public, non-profit recreational and cultural activities which provide outlets for citizens on a non-discriminatory basis.
41. Establish ordinances to require builders and developers to provide lands and/or funds for acquisition and development of land for recreational use. These land and/or funds shall be based on a standard of providing 4 acres of local park land per 1000 population.
42. Seek County, State, and Federal and private or sharing funds to acquire, improve and maintain recreational lands.
43. Work through the State and Federal government in support of legislation resulting in City governmental acquisition of coastal land.
44. Encourage land holders to contribute lands and/or easements to the City for conservation and/or recreational use and encourage the City to accept such contributions.
45. Encourage local citizen groups to participate in the planning, development, and maintenance of recreation facilities to the extent possible.
46. Engage in further study of recreational activities on a neighborhood level following the General Plan.
47. Investigate the interim use of vacant school sites for recreational use.
48. Encourage institutions to provide public use of its institutional recreational facilities, where possible.
49. Encourage building additional parks and playing fields, where appropriate, for multiple uses by various recreational groups.

COS.4 3 Basic Ecological and Environmental Units

This section discusses the basic ecological and environmental units that deal with natural factors affecting the City. It is these factors and the relationships between them that serve as the basis within which the environmental resource management policies are developed. This discussion of 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 "~~G~~geotechnical ~~f~~Factors" ~~includes~~ consists of topographic conditions, geologic hazards, and mineral resources. Hydrology covers the natural and ~~man-made~~ built water drainage patterns within the City and the factors affecting them, as well as their influence on the other natural environment factors. ~~Each of the above units has been classified according to capabilities and suitabilities into categories of Preservation of Natural Resources, or Public Health and Safety.~~

~~The two categories have then been combined to develop the Natural Environment Element which becomes a guide for the natural environmental resource management policies.~~

~~It is stressed that this approach to the balanced treatment of environmental considerations with land uses in the planning process reflects several unique characteristics of the Rancho Palos Verdes community which must be addressed in this component of the General Plan:~~

- ~~The large amounts of undeveloped open space which exists in the community at the time of preparation of the plan.~~
- ~~The unusual topography, orientation, vegetation, and other factors which characterize the Rancho Palos Verdes portion of the Palos Verdes Peninsula.~~
- ~~Careful planning and management of a natural environmental resource must be comprehensive and anticipatory in order to preclude irreversible and irretrievable commitments of this resource made on a piecemeal and expedient basis at future dates.~~
- ~~The fact that this open space has a demonstrable, recognized, extraordinary value and significance as a regional asset as well as a local amenity, requires that a stewardship function be exercised by the City in the planning and future management of this resource above and beyond that normally exercised by a typical community dealing with its own park, open space, and recreational needs.~~
- ~~The community has, through numerous expressions of goals, ideals and other aspirations and intentions, suggested a policy in which the maintenance of balance between urbanization and retention of natural "open space type" amenities would be essential in the planning of the community.~~

~~Further it should be recognized that, while this stage of analysis and documentation of the planning effort extends considerably beyond the level of detail accomplished in the initial natural resource inventory effort, it constitutes that level of detail appropriate to the General Plan process. As such, it is not intended, nor should it be used, for detailed area analysis or specific project feasibility, which can only be established in more detailed studies as an extension of the General Plan and its implementation. The data utilized in this analysis have been derived from a wide variety of secondary sources, coupled with field confirmation in selected raeas, which has been synthesized to the degree necessary for the General Plan process. More detailed information on specific subjects or locations can be found in the data sources listed in the data source references in this section and in the bibliography.~~

~~C.1 Climate~~

~~Rancho Palos Verdes enjoys a climate and air quality considered as being among the ideal climates of the world. Its average maximum and minimum temperatures range approximately between 67° and 50° 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 inches 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- foot 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 nights 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.

Zone 2 – Upper West Face of the Hill. This zone is above the 500- 700-foot 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.

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 combined with soil and plant nutrients have created a setting enabling a wide variety of both native and man-introduced plant species to 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.

Air Quality

Air quality monitoring and control is primarily the responsibility of the State Air Resources Board, the Los Angeles County Air Pollution Control District and the Federal Environmental Protection Agency. The main area of concern of these agencies is control of emission sources, and they do not deal in any direct way in land use planning. The EPA, however, is in the process of developing guidelines for approval of complex sources of air pollution such as shopping centers, sports stadiums, and others requiring vehicular transportation, which would indirectly affect land use planning considerations. Air quality data specific to Rancho Palos Verdes are not

~~currently available, since the nearest air quality monitoring station is in Long Beach (Station 72, Los Angeles County, APCD).~~

~~Air quality readings at station 72, on occasion, have dropped below current air quality standards of the State Air Resources Board (L.A. Co., APCD) and air quality within the City can be assured to be better to or at least equal to the readings at Station 72. A periodic sampling and testing program would be necessary in order to determine actual levels of air quality within the City and establish baseline data to assess any deterioration of this quality. This may become necessary as the E.P.A. institutes its program of regulating complex sources of emissions and the need to quantitatively assess impacts to air quality from any proposed development becomes more apparent.~~

~~The ocean is the primary air recharge area for the region and this continuing daily flow of clean ocean air over the peninsula provides the high level of air quality which is prevalent in Rancho Palos Verdes. Inland cities within the region also depend on this ocean air flow for their clean air. The strength, direction, frequency, and degradation of the quality of this air as it passes inland are factors in the air pollution levels experienced by inland areas. The cities on the Palos Verdes Peninsula tend to have lesser impact than other coastal cities in creating poor air quality in the inland areas due to their low urban activity/traffic activity levels. The general air flow pattern for the region, as described by APCD and other sources, indicates that the peninsula splits the sea breeze in such a fashion that the majority of the air which reaches inland areas crosses other coastal plain cities. This is not to indicate that air pollution generated on the peninsula does not reach the inland areas, but rather that the impact is estimated to be less in comparison to other coastal cities. Further development creating additional sources of air pollution on the peninsula would further degrade inland air quality. Conversely, under Santa Ana wind conditions, the cumulative air pollution phenomena generated within the inland Los Angeles Basin cities impact the peninsula heavily (although infrequently). This occurs seasonally in fall and winter, and lasts a relatively short time.~~

~~C.~~4 3.1 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 distanced). 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.~~ Development on the Palos Verdes Peninsula has taken advantage of natural plateaus, but, in some areas, steep slopes have created difficulties for access, utility service, and site improvements, resulting in constrained urban development. Within the City, 40% to 50% of all land area falls into the category of steep slopes (inclines of approximately 25% and greater), and the remainder is less than 25% in steepness (Figure 1, Slope Gradients). Slope is usually expressed by a percentage 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 and generally the first lands to be developed. This pattern of development is apparent in most areas of urban development. Land with average slopes of 10% or less are considered to be flat to rolling, and are most easily 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 begins to increase substantially. Development within these ~~this~~ areas is often associated with extensive adverse environmental impacts, and 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

greater than ~~above~~ 35% are considered ~~as~~ extreme slopes, 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).~~

Rancho Palos Verdes is a hillside community with slopes ranging from 5% to more than 35%, and development across the hillsides is limited. As a result, the community is developed with larger properties that offer more open space. In addition, topography and geologic conditions (see below) have created opportunities to preserve open spaces for visual and/or public recreational resources.

3.2 Geologic Conditions & ~~-~~Geotechnical Factors

~~The Palos Verdes Peninsula is a rugged area that is underlain chiefly by folded sedimentary rocks of the Miocene Monterey Formation. Weak layers exist within these bedded rocks, and many massive ground failures (landslides) have taken place on the Peninsula during Holocene and late Pleistocene geologic time. 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). Only one of the very large landslides, the Portuguese Bend Landslide, is now active; others, however range from masses that may well be on the verge of renewed failure to some very old 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 would be possible within certain of the old landslide areas, detailed geologic investigations would be necessary to demonstrate the required degree of stability. Appropriate geologic investigations should also precede development of any "non-landslide" area of the City, as new ground failure could well be triggered by man's activities in some areas.~~

Geologic Conditions: The Palos Verdes Peninsula bedrock is composed of a metamorphic core blanketed by sequences of younger sedimentary rock. ~~is underlain by a sequence of middle Miocene and younger bedded sedimentary rocks that are draped anticlinally over a core of Mesozoic schist "basement rocks".~~ The structure is ~~locally~~ complicated by smaller-scale folding, and ~~both the~~ schist (rocks that split into layers) 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 F~~f~~ault on the northeast and the San Pedro fault offshore on the southwest (~~See Figure 6~~ see figure below). A series of 13 staircase marine terraces ~~benches has been developed across the rocks of the Peninsula~~ developed surrounding the Palos Verdes Peninsula during late Pleistocene and Holocene geologic times (the last few hundred thousand years). The ~~and both~~ 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 (although ~~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 stabil~~ity are the marine strata~~ of 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 (fossilized remains of diatoms, a type of hard-shelled algae), and the Malaga Mudstone (from oldest to youngest). Altamira Shale consists largely of thin-bedded sedimentary ~~shaley~~ 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. ~~Consequently it is this member which is the chief causal factor in terms of slope stability and the main failure surface of most landslides located within a narrow stratigraphic interval centered about the lowermost tuff bed (the Portuguese Tuff).~~ Thick layers of volcanic ash deposited millions of years ago were compressed over time into bentonite. In the presence of water, bentonite becomes very slippery and has been a major contributing factor for landslides in Rancho Palos Verdes.

Rancho Palos Verdes is located in a seismically active area and is near several of the active and potentially actives 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. The hard rock substrata of the Peninsula Hills helps this area to be seismically safer than surrounding areas that have more soft sandy soils, subjecting them to ground acceleration due to liquefaction. Therefore, seismic influences are not a major factor in determining land use overall in Rancho Palos Verdes. However, it is still possible that renewed movement on some existing landslide areas could be triggered by strong seismic shaking; this would only occur if these areas are in a meta-stable condition before the earthquake.

Geotechnical Factors/Landslides. Landslides are influenced by rock type, the structure of the rock, the quantity of available water, and topographical conditions. Landslides occurred on the Peninsula during the Holocene Epoch and the Pleistocene Epoch, approximately 11,000 and up to 1.6 million years ago, respectively, along a fault that had a history of movement. 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 1973).

The Portuguese Bend landslide complex 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 landslide began in 1956 as a result of grading operations. Stability of portions of the landslide area has been in debate for many years, and other landslides, such as the South Shores landslide system, have been at equilibrium for some time. However, development activities, heavy rain, and erosion may change the existing conditions and lead to renewed failure of certain landslides that appear stable.

~~Most of the landslides that have occurred in the past are the result of the following factors: presence of weak, clayey interbed and a combination of fairly steep slopes and a downslope dip of the bedding (roughly parallel to the land surface). In many instances, the bedding at the base of the incipient slide was probably exposed by a local steepening of the topography such as sea cliff or canyon wall. Other factors which may have led to the formation of landslides include the introduction of water into the subsurface (consequently weakening the clay beds) and seismic shaking (some slides may have first formed during earthquakes). The works of man have also resulted in the formation of new slides and the reactivation of old ones because of such activities as development of cut slopes in critical areas, loading of upslope areas by placement of fill, introduction of water into the ground from septic tanks, lawn watering, etc. The removal of material at the base of a slope by sea cliff erosion is also a factor in triggering new slides or reactivating existing ones.~~

~~Seismic shaking is a hazard throughout the State, including Rancho Palos Verdes, however, it is not likely that the intensity and type of shaking generated by earthquakes will vary significantly from one place to another in the City and consequently not 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. There are no known active faults within the City, and rupture of the ground surface as the result of tectonic fault movement is not a planning consideration.~~

The following ~~The~~ four categories of slope stability~~, shown on Figure 7,~~ have been ~~developed from the landslide mapping 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." The significance of the slope stability categories in terms of land use planning are described here (Interpretations by Earth Sciences Associates).~~ mapped, shown in Figure 2, Slope Stability: Active Landslide, Old Landslide, Possible Landslide, and Non-Landslide Areas. The four categories of slope stability were developed from the landslide mapping developed as a portion of the Geotechnical and Public Safety Report for Cities of Rancho Palos Verdes, Rolling Hills Estates, and Rolling Hills (Envicom Corporation 1975). Old Landslide Areas are presently in a metastable condition and could change to Active Landslide Areas with minor changes in the natural or human-caused environment, although some 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 below (interpretations by Kling Consulting Group 2015).

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

- Old Landslide Areas. Areas~~, as~~ determined by investigative techniques by a geologist to have had ~~inspection, that has experienced massive downslope movement in the~~ past movement and/or identified in the California Department of Conservation's landslide inventory maps that portray the location of prior failure. ~~but is not now moving. Movement may be triggered again in the future by unusual rainfall, seismic shaking, man's activities (development of cut slopes, introduction of ground water), or other causes. A wide range of present stability exists within this category, ranging from areas such as the South Shore Canyon slide that exhibits fresh sign of recent movement (and may well be subject to renewed movement in the foreseeable future) to areas of very old landsliding at higher elevations that are known to have last moved more than 250,000 years ago (and are probably relatively stable at present, since much of the landslide mass has been removed by erosion).Most of these areas would not be suitable for residential development without conclusive demonstration, through detailed engineering geologic studies, that they are stable enough to accommodate both the activities of site preparation and long term human habitation.~~ Landslide inventory maps show existing landslides and reveal the extent of past movement. These landslides have experienced downslope movement in the past but are no longer moving. 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. Areas ~~that is~~ suspected to be a landslide on the basis of topographic evidence, indicating less confidence in the landslide's existence. 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 ~~in which~~ where no natural landslides have been identified ~~recognized~~. 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 ~~of even low cut slopes where beds dipping out of the slope are daylighted~~. 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.~~ Although there is less chance of slope stability problem in this area, geologic and soil engineering investigations will still be required for any proposed development.

~~There is a wide range of slope stability within three of the four categories mapped—Non-Landslide Areas; Possible Landslide Areas; and old Landslide Areas. For instance, some existing 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; other existing landslide areas (mainly the older ones) are now in a very stable condition and could be suitable for residential development (subject to detailed geologic investigations). This range of conditions indicates that each proposed development or other activity (irrigation of agricultural uses on a recent landslide area, for example), in all areas of the City should be clearly documented on an individual basis, with determinations of project physical feasibility made on case-by-case basis.~~

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 areas of the City, as new ground failure could well be triggered by human activities.

~~Sea Cliff Hazard Retreat~~Coastal Setback Zone. The Palos Verdes Peninsula continues to exist as a jagged peninsular formation because the basaltic 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 1975 General Plan indicated that the California Coastal Zone Conservation Commission (Preliminary Coastal Plan) has 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 1975 General Plan, the City embarked on preparation of the City's Coastal Specific Plan, or Local Coastal Program (LCP). The LCP was originally certified by the California Coastal Commission with suggested modifications on January 22, 1980. The California Coastal Commission certified the resubmitted LCP on April 27, 1983, and the City assumed permit-issuing authority on August 1, 1983. ~~The accompanying diagram illustrates this proposal, and the areas which would be affected within Rancho Palos Verdes are shown on the accompanying map. (Figure 9).~~

~~This zone has been described in this manner due to the fact that a soil mass, according to its composition, stabilizes at various angles of repose. Some structurally stable soils may have relative steep angles of repose, whereas other more unstable soils have very low angles of repose. In order to ensure that all varying conditions of sea cliff erosion hazard are taken into account, the lowest angle of repose of any soil has been used to describe this zone.~~

~~Within this zone, detailed engineering/geologic studies will be required with any proposed development to demonstrate site stability and suitability of development. No significant risks to human life caused by proposed development shall be acceptable.~~

~~The dimensions of the development setback from the sea cliff edge in any given area should take into account the local geologic conditions and be judged on an individual basis.~~

~~Due to the considerable amount of coastline within Rancho Palos Verdes that is of a sea cliff nature and the known landslide potentials resulting from geologic composition, it is important that this ore a more refined procedure be integrated within the Specific Plan for the coastal region.~~

As part of that LCP, a Coastal Setback Line was established by the City in 1978, which 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 and to regulate development within these areas. As development proposals come forth, variances to the Coastal Setback Line have been permitted to allow development within the Coastal Setback Line areas, provided further geological studies warrant such variances. 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 (Kling Consulting Group 2015).

The geologic study identified the following three significant geologic hazards within the City's coastal zone: coastal erosion, landslides, and erosion along intermittent stream channels. The combination of these geologic factors can impose significant restrictions on land-use patterns within the City's coastal zone. These geologic constraints are variable; some regions of the coastal zone are virtually free of geologic problems, and 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 geologic study established a classification system based on the suitability for existing and anticipated land uses (Kling Consulting Group 2015). The category system, which was incorporated into the Coastal Specific Plan, has been historically used to determine land uses based on criteria that define 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 (Figure 3, Coastal Setback Zone):

- 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 established and includes 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.

3.3 Mineral Resources

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

~~According to Woodring, t~~The Palos Verdes Hills (two-thirds of which are within 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 million ~~25,000,000~~ years, and the ~~period~~ Jurassic, which dates back 180 million ~~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 human~~man~~-like apes appeared. The Jurassic period is that time in geologic history when the Sierra Nevada ~~Mountains~~ uplifted, and primitive birds appeared. Startigraphy, 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 ~~water,~~ 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 oil or gas. However, the area of Westmont Plaza on the east side of the City is underlain by large petroleum deposits that extend to Long Beach, Wilmington, and San Pedro (Woodring et al. 1946). ~~is in the igneous rock class. Igneous rock is formed through volcanic action, making for a very hard rock which generally is not known to house deposits of gas or oil.~~

Resources Extracted Via Drilling. The first oil well was drilled by the Newton Development Company adjacent to what is now the Terranea Resort at Long Point ~~Marineland~~. This well reached a depth of 4,500 feet. The stratigraphy of the well consisted of Miocene to 1,560 feet, turning into volcanic and finally hitting schist as 3,906 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, t~~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, ~~just west~~ in the vicinity of what is now known as Trump National Golf Club, ~~the undedicated portion of Paseo Del Mar~~ 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, nothing was found in ~~none of~~ these wells ~~showed any indication of oil or gas~~ (Lande pers. comm. 1975).

~~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~~ that has not at one time or another been commercially extracted is ~~the asphalt~~ basalt which ~~Woodring says~~ reportedly exists at the main branches of Aqua Armaga Canyon.

Basalt is a light weight volcanic rock~~, which~~ that is used as a component in concrete~~,~~ and oil well cement, and locally as a dressing for secondary roads. The three recorded basalt quarries were just north of Forrestal Drive within the now Forrestal Reserve, a subarea of the Palos Verdes Nature Preserve, and just south of the Flying Triangle in Rolling Hills. These quarries were operated for nearly ~~ten~~ 10 years, closing their operation in 1958. The operation was run by Livingston and Graham, Inc., ~~a representative of which recently stated that these~~ and allegedly these quarries produced only basalt and not the decomposed granite, which appears on some early editions of the U.S. Geological Survey maps.

To the south of Westmont Plaza in the Eastview area at 29000 Western Avenue is the site of the old Hilltop Quarry. Calcium carbonate was mined at the quarry in the early 1900s. In 1946, the quarry was filled. Currently, no mineral resources are being extracted from the Eastview area.

There is some evidence that ~~some sort of~~ mining operations may have occurred in the Via Colinita area of Rancho Palos Verdes, probably basalt. In the early 1970's, the Los Angeles ~~The~~ County Building and Safety Department received ~~has~~ reported problems ~~with~~ of some settling of homes in the area, which may have resulted ~~result~~ from mining operations. ~~that took place.~~ Unlike oil and gas wells, mining and quarrying operations did not ~~have to file for~~ require permits ~~with~~ from the ~~S~~state, making ~~documented support of these suspicions~~ confirmation of these mining operations 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 later became the Palos Verdes Landfill, which was subsequently closed in the 1980's. ~~is not the Los Angeles County Landfill~~. The ground at the site ~~began~~ became unstable ~~to give out~~ in 1953~~;~~ so the operation was moved to the Crestridge site in 1954, where it operated for almost ~~a~~ 1 year. The Palos Verdes Landfill is now the site of the South Coast Botanic Garden in unincorporated Los Angeles County and the Ernie Howlett Park in the City of Rolling Hills Estates.

~~According to Grefco, the operation was halted because the land's real estate value exceeded its worth as a diatomite quarry. Diatomaceous earth is valued between $1 to $2 per ton in the ground.~~

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, filters such as for swimming pools, and manufacturers of antibiotics. The material is also used as a filler in paper and plastics. ~~In all, d~~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~~ and commercial real estate, it is highly unlikely that landowners would wish to ~~utilize~~ use the land for mining or quarrying operations. Given the community's goal of maintaining a rural atmosphere, conflicts ~~which~~ that might otherwise arise relative to desired land uses are not likely to occur.

Forestry. The City's predominant land uses are Residential and Open Space. The City maintains over 1,400 acres of open space, known as the Palos Verdes Nature Preserve, that have mature trees and lush vegetation.

3.4 Hydrology

Water systems are integral to ~~the total basic ecosystem affecting directly or indirectly~~ all natural processes. Within the City, all surface waters originates from precipitation falling directly on the land, and it is rare to find ~~there are no major~~ continuing stream~~way~~ systems. This is a result of the P~~p~~eninsula's being a single hill formation creating a drainage pattern ~~which~~ that is dispersed via ~~in~~ a number of small watershed systems. There are no major watershed systems that ~~which~~ are totally confined within the boundaries of the City~~; thus a~~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~~ Figure 6, Hydrology). 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 of that flow originating 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~~ flows to ~~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 around the City is currently taking place due to erosion because they are already essentially in bedrock. ~~Erosion, h~~However, Lower San Ramon Canyon is experiencing scour, which is the lowering of the canyon bottom due to erosion (Kling Consulting Group 2015). The City continues to make efforts to mitigate this issue. 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 f~~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 Ppeninsula 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 that 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. Substantial contributors to this situation are indiscriminate use of fertilizer and insecticide upon lawns, gardens, and farmland and poor practices of grading without proper erosion control (C.C.Z.C.C., The Marine Environment). Prescribed use of organic biodegradable insecticides and fertilizers with erosion preventative measures to lessen excessive runoff and allow a greater ground absorption could alleviate the situation.

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.

Surface flow runoff accumulates small amounts of petroleum residue, road dust, nutrients, and pesticides associated with urban development as it flows to the ocean, impacting the marine environment. Increased surface drainage 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 velocities enables percolation and filtration to occur, thus alleviating some of the pollution before it reaches the ocean. 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 balanced system filters pollutants, replenishes beach sand, irrigates natural vegetation, and returns water back to the ocean, but can easily be upset by changes in drainage pattern and flow characteristics.
Excessive silt-ridden erosion and runoff laden with insecticide and fertilizer from agricultural and urban land uses can have detrimental effects on marine organisms. 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 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. The NPDES process requires developers to incorporate Low-Impact Development (LID) standards to minimize the amount of runoff and exposure of water to pollutants such as trash, nutrients, oil and grease, copper, zinc, lead, cadmium, and bacteria. Developers must implement best management practices to mitigate potential pollutants. Applicable projects are not issued grading, demolition, or building permits unless approval

of a NPDES plan is obtained. The City also has a landscape ordinance intended to save water and reduce the amount of runoff into the ocean. Furthermore, pest management plans integrated into landscape plans minimize harmful chemicals.

~~There currently exists~~ A~~a~~ number of existing channels and storm drains ~~which~~ have been ~~both~~ privately and publicly developed within the City. ~~These~~ Most have been designed to standards of the LA County Flood Control District and have been deeded to the Flood Control District. ~~Other proposed storm drains have been placed on a low priority and have not been funded for construction.~~ 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 to adequately maintain facilities. The Storm Drain User Fee 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 the 2009 Project of the Year in the "Facilities" category by the Southern California Chapter of the American Public Works Association. This project was one of the highest-priority planning goals for the City Council for the Water Quality and Flood Protection Program. The McCarrell Canyon project was paid for with General Fund reserves and the Storm Drain User Fee. It will likely be necessary to seek and secure other funding sources to continue water quality and storm drain programs because the user fee expired in June 2016. As urban development continues, ~~occurs in these areas, the~~ private developers may be required to ~~con~~struct the proper storm drain ~~facilities~~ facilities ~~in accordance with the standards of LA County Flood Control District~~. to accommodate the impacts of their development projects.

3.5 Biotic Resources

~~Vegetation and Wildlife Habitat.~~ ~~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.~~

The vegetation communities found in Rancho Palos Verdes are coastal sage scrub, southern cactus scrub, coastal bluff scrub, saltbush scrub, and some riparian woodland. Since the Peninsula was once an island, many of the plant types are closer to Catalina Island flora than to the chaparral found in the Santa Monica Mountains.

The urban development, ranching, and farming that ~~which~~ has occurred on the Peninsula has degraded and/or eliminated ~~most~~ many of the natural areas that ~~which~~ are considered significant natural plant and habitat communities and that support wildlife. In addition to on-site clearing, native plant communities can be lost due to the fuel modification setback required by fire officials.

~~There are four types of vegetation communities which remain and have been identified within Rancho Palos Verdes. These are:~~

- ~~Rocky Coast – tide pool, intertidal, and bluff area.~~
- ~~Coastal Sage Scrub – low shrubby, native vegetation along coastal slopes.~~
- ~~Chaparral – shrubby, dense plant materials. Greater variety and height than coastal sage scrub.~~
- ~~Grasslands – found along moister slopes and consisting of bunch grasses, flowering annuals, and herbs. Now partially invaded by weedy introduced grasses.~~

~~These are not single unmixed vegetation communities and can be found intermingled in several locations. Several areas of these vegetation communities are significant wildlife habitats. These are shown on the accompanying map (Figure 11) and are the Coastline, Portuguese Bend Landslide Area, Aqua Amarga Canyon and Malaga Canyon. Of these areas, the Coastline and Portuguese Bend Landslide Area are the most significant~~

~~due to the varied plant communities to be found and the lack of extensive development in adjoining areas. These have been described by the South Coast Regional Coastal Commission as being within First priority classification for preservation. The other two areas are within Second priority classification for presentation (C.C.Z.C.C., Coastal Land Environment).~~

~~A review of species described by other studies (Gales) indicates that there does not appear to be any wildlife within the City which has been included on the State's rare and endangered species list. Of wildlife on the Peninsula, birds are by far the most abundant, while the other wildlife tends to be small rodents, skunks, rabbits, frogs, tree toads, and a variety of snakes. Fox and coyotes have also been sighted in some canyon areas but their instances are very rare. The only rare or endangered vegetation which may be found in the City is Chaetopappa lyonii (Pentachaeta lyonii). (C.C.Z.C.C., Coastal Land Environment, and Munz). This is a small herbaceous plant with yellow daisy like flowers. The plant was first identified in 1945 at Point Fermin and is believed to grow along the slopes of Rancho Palos Verdes, although no recent confirmation of its existence has been made.~~

Natural Community Conservation Plan

In 1996, Rancho Palos Verdes entered into an agreement with the California Department of Fish and Game (now the California Department of Fish and Wildlife) and the 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). The NCCP/HCP covers vegetation and wildlife species for the entire City, and also created a designated nature preserve, the Palos Verdes Nature Preserve to conserve and re-vegetate sensitive native habitats and provide adequate habitat linkages between patches of conserved lands. Through a partnership with the Palos Verdes Peninsula Land Conservancy (PVPLC), the City was able to acquire upward of 1,400 acres of land through public dedications of City-owned land, private donations of land, and formal land purchases. This partnership led efforts in the various forms of land acquisitions for the designated Preserve areas, and also provided necessary support for the design and implementation of the formal NCCP/HCP. Due to the amount of land acquired by the City and the desire to ensure that sensitive, native habitats are re-vegetated and conserved over time, the City also created a new General Plan land use designation: the Open Space Preserve land use designation. These Preserve areas are shown in Figure 5, Biotic Resources.

The City's NCCP/HCP provides for protection and management of wildlife and biological resources while allowing for compatible public use and appropriate development growth. The NCCP/HCP provides comprehensive management and conservation of multiple species, including species listed under the California Endangered Species Act and the federal Endangered Species Act of 1973. The City developed a landscape-scale database of biological resources and land-use information to allow the City and Wildlife Agencies to make informed land-use and conservation decisions for future projects. This database mapped vegetation community and sensitive species distributions, and potential habitat for sensitive species. The NCCP/HCP also provides 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 area are those that are considered rare in the region; support sensitive species of plants and animals; and/or are subject to regulatory protection through various federal, state, or local policies or regulations. Habitats in the City include wetland habitat types (consisting primarily of riparian scrub) and upland scrub habitats. Grasslands are the first plant community to dominate an area after clearing, either by fire or human intervention. Although some native plants such as needle grass, broadleaf herbs, and wildflowers will fill in these cleared areas, much of the flora is made up of

non-native Mediterranean annual grasses, fennel, or mustard. If patches of native grassland are identified, this habitat should 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 open space are also important because they contribute to a habitat mosaic that can be used by sensitive species.

Approximately 8,612 acres of vegetation are within the NCCP/HCP area, including native habitats, non-native habitats, agricultural lands, disturbed areas, and developed lands. These communities are listed in Table 2-2 and further described in the City's NCCP/HCP.

Table 1
Vegetation Communities in the Natural Community Conservation Plan/ Habitat Conservation Plan Area

Vegetation Category	Preserve	Neutral Lands	Lands Outside Preserve/Neutral Lands	Grand Total
Agriculture	2.9	0.2	14.6	17.6
Cliff Face	7.4	1.3	0.0	8.8
Coastal Sage Scrub	582.2	354.6	89.8	1,026.8
Developed	51.8	967.6	4,964.9	5,984.5
Disturbed Vegetation	30.8	14.9	119.2	164.9
Exotic Woodland	37.5	14.5	23.5	75.4
Grassland	470.9	216.5	262.8	950.2
Riparian Scrub	2.3	0.1	0.2	2.5
Rocky Shore/Intertidal	7.3	39.3	12.1	58.8
Ruderal Habitat	54.5	9.8	22.7	86.9
Saltbrush Scrub	6.6	0.6	0.0	7.3
Southern Cactus Scrub	66.6	28.2	4.9	99.7
Southern Coastal Bluff Scrub	81.6	46.7	4.8	133.2
Grand Total	**1,402.4**	**1,694.3**	**5,519.6**	**8,616.6**

*Neutral Lands are not subject to NCCP/HCP management requirements.

Conservation of some non-native grasslands contributes to NCCP/HCP planning goals. Further, mitigation measures for potential impacts to non-native grasslands may be required for development projects.

Reserve Areas within the NCCP/HCP Area

A number of significant wildlife habitats in Rancho Palos Verdes are directly associated with vegetation communities. The City established the NCCP/HCP to preserve biodiversity within the City's boundaries while allowing for continued public use and 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 uses, property rights, economic goals, and public access. This approach involved examining opportunities and constraints, and incorporating biologically valuable lands into the Preserve. Within the NCCP/HCP area is a dedicated Preserve with specified 12 reserve areas. All of the 12 reserve areas are managed for the City by the Palos Verdes Peninsula Land Conservancy. These 12 reserve areas and their corresponding acreages are identified in Table 2.

Table 2
Reserve Areas* within the NCCP/HCP

Preserve Reserve Areas	Acres
Abalone Cove Reserve**	65.2
Agua Amarga Reserve	61
Three Sisters Reserve	98.4
Vista Del Norte Reserve	16.8
Portuguese Bend Reserve	427.2
Vicente Bluffs Reserve	62.5
Forrestal Reserve	158
Ocean Trails Reserve	116.6
San Ramon Reserve	94.5
Alta Vicente Reserve	50.9
Filiorum Reserve	189.8
Malaga Canyon Reserve	61.5

Notes:
* Also referred to as Management Units
** The Abalone Cove Reserve is a terrestrial area regulated under NCCP guidelines within the City owned Abalone Cove Shoreline Park and is different from the marine Abalone Cove Ecological Reserve that is under State jurisdiction.

NCCP Sensitive Species. The City's NCCP/HCP is designed to maximize benefits to wildlife and vegetation communities while accommodating appropriate public use and economic development within the City, pursuant to the requirements of the NCCP Act (1991) and Section 10(a) of the Endangered Species Act. The NCCP/HCP is intended to provide for the comprehensive management and conservation of multiple species, including those species listed under the Endangered Species Act and identified in Table 3.

Table 3
Sensitive Species List for the NCCP/HCP

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

Notes:
NCCP = Natural Community Conservation Plan; HCP = Habitat Conservation Plan
FT = federally threatened
FE = federally Endangered
SSC = Species of Special Concern
CNPS List 1B = Plants, rare, threatened, or endangered in California and elsewhere
CNPS = California Native Plant Society
CNPS List 4 = Plants of limited distribution – a watch list

The sensitive species identified in Table 2-4 can be found in various areas of the City. The first six flora species listed fall under sensitive vegetation found within the City. Aphanisma (*Aphanisma blitoides*) occurs in the City in coastal bluff scrub from Portuguese Point, along the coast to the Rancho Palos Verdes and San Pedro city limit. South coast saltscale (*Atriplex pacifica*) has been detected on Portuguese Point and along the coast between Halfway Point and Shoreline Park. Catalina crossosoma (*Crossosoma californicum*) has been detected on dry, rocky slopes and canyons in coastal sage scrub below 1,640 feet elevation. Island green dudleya (*Dudleya virens* ssp. *insularis*) is found mostly on the Pacific slope on sea bluffs and rocky headlands. Santa Catalina Island

desert-thorn (*Lycium brevipes* var. *hassei*) was rediscovered on the Peninsula in 1976 and occurs on Portuguese Point within the City limits. Wooley seablite (*Suaeda taxifolia*) occurs along the Peninsula shoreline.

The last four sensitive fauna species listed in Table 2-4 are sensitive wildlife that have been found to thrive in the various vegetation communities within or near the City. Two populations of El Segundo blue butterfly (*Euphilotes battoides allyni*) 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, Palos Verdes blue butterfly has been observed near the "switchback" area of Palos Verdes Drive East, within the landslide moratorium area, and in Agua Amarga Canyon. Federally designated critical habitat for Palos Verdes blue butterfly includes Fred Hesse Park, Agua Amarga Canyon, and the "switchback" area of Palos Verdes Drive East. Coastal California gnatcatcher habitat is coastal sage scrub vegetation. This habitat is protected and managed throughout the NCCP/HCP area and by the Endangered Species Act. The coastal population of cactus wren (*Campylorhynchus brunneicapillus*) nests in southern cactus scrub habitat 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.

3.6 Ocean Resources

The Palos Verdes Peninsula has long been ~~extensively~~ recognized for its beautiful shoreline and rich, abundant marine life. The shoreline is used ~~has been a major activity area for~~ by sport and commercial fisherm~~a~~en, ~~commercial fishermen,~~ hikers, ~~skin~~ divers, beachcombers, and students studying coastal and marine habitats and species. This intense activity combined with other forces from the heavily developed Los Angeles and Orange Counties have ~~adversely~~ affected the ocean environment surrounding the Peninsula. ~~In the estimation of a number of qualified sources, t~~The ~~h~~ thousands of species of marine organisms that currently inhabit the tide pools ~~have been~~ were once depleted to dangerously low numbers ~~because of~~ due to excessive use and under~~-~~management of the intertidal shoreline area. Some species ~~have been~~ were eliminated from the area while others face~~d~~ the same threat.

The once nearly crystalline water quality has been ~~seriously~~ degraded by a number of water pollution factors and the lack of particle-absorbing organisms ~~that once existed~~ in the marine environment. The kelp beds that ~~once~~ surround~~ed~~ the peninsula, providing food and shelter for many varieties of sea life, ~~have been~~ 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 (e.g., DDT) that occurred in the 1950s through the 1970s.

Kelp Bed. Kelp beds (*Macrocystis pyrifera*) are ~~or~~ forests that serve as sanctuaries, nurseries, habitats, and food sources for many species of marine organisms. Kelp is also a renewable natural resource that should be carefully managed and maintained. Kelp fronds have been known to grow as much as 2 feet per day, and eventually form a thick blanket covering the surface of the water. ~~T~~The "biomass" (i.e., the amount of living matter per unit area) of a kelp forest is greater than that of a temperate land forest (California Coastal Zone Conservation ~~Commission 1974~~C.C.Z.C.C., The Marine Environment) and in ecological terms, may be 100 times more productive than the adjac~~ent s~~and bottom (SCAG Southern California Association of ~~Governments 1972~~, Coastline Planning). Kelp also exerts a flattening ~~effect on wave s~~urges, and thus serves serving as a ~~stabilizing~~ mechanism for acting against shoreline erosion, which is 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 is 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 ~~(*Macrocystis pyrifera*)~~ ~~which have now all but~~ that disappeared during the 1970's ~~with the result that much of the sea life dependent on the kelp has also disappeared.~~ The ecologic sequence creating the decline of the kelp began with mass harvesting of the brown sea otter in the late ~~nineteenth~~ 19th 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 the otters ~~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~~ from sewage discharge, resulted in an overpopulation of ~~situation where~~ sea urchins ~~thrived and grew.~~

Sea urchins are sea-bottom dwellers and feed on ~~upon the~~ kelp holdfasts (rootlike, anchoring structures Although the Rancho Palos Verdes kelp beds are not used for commercial purposes, algin extracted from the kelp plant is 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. 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~~ could not be maintained. ~~The primary reason that the Palos Verdes Peninsula suffered so extensively in the reduction of kelp is due to the near proximity of two major sewage outfalls.~~

~~Along with the aesthetic and marine animal loss, the depletion of the kelp forest adversely affects industrial and commercial uses. Algin extracted from the kelp plant is used as thickeners and stabilizers 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 entire Southern California kelp harvest is valued at approximately $3 million annually (Bowden).~~

~~Given a managed living environment, kelp is a renewable natural resource. 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. Large kelp harvest barges are able to thrash kelp two or three feet under the ocean surface and haul the cut kelp aboard for transport to processing factories. It is thought that with further research and management, kelp can be harvested continually in amounts where the kelp can replenish itself at about the same rate as harvest. (Optimum sustainable yield).~~

~~Scientific techniques to restore kelp forests have proven successful in reestablishing the Point Loma kelp bed off San Diego and aided in the restoration of kelp beds off the Orange County coast in some locations (C.C.Z.C.C., The Marine Environment). Several attempts have been made to restore the kelp beds off Palos Verdes.~~

~~The longest running and probably the most popular project was known as the Palos Verdes Underwater Restoration Project (PURP), sponsored by the Los Angeles County Fish and Game Commission, the Los Angeles County Department of Parks and Recreation, and Greater Los Angeles Council of Divers (GLACD) and the California Institute of Technology. This project is comprised of three phases: Phase I involves reduction of sea urchin population; Phase 2 involves kelp transplanting; Phase 3 involves establishment of underwater parks and~~

~~marine preserves. Success of this project will not be able to be observed for a number of years since the project is still within Phase 2.~~

~~Other attempts by private clubs and organizations have been made with little or no apparent success.~~

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, but efforts were re-initiated by the California Department of Fish and Wildlife in 1970 and continued through 1977. In 1974, the kelp beds off the Palos Verdes Peninsula began to show signs of recovery. During the 1980s, the kelp canopy dramatically increased. Once the beds were re-established, the California Department of Fish and Wildlife discontinued active restoration efforts.

In 1996, the environmental group, Los Angeles Waterkeeper, 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. Since then, Los Angeles Waterkeeper has been monitoring and restoring the Palos Verdes area. In 2014, extensive surveys mapped out reefs areas completely dominated by urchin barrens. Based on this analysis, efforts have been made to clear urchins to densities found in healthy kelp forest systems. Once the urchin is removed, algae begins to grow on reefs, and kelp plants establish themselves. This is an on-going kelp restoration effort by the Los Angeles Waterkeeper, known as the Kelp Project.

Marine Life. ~~The California State Department of Fish and Game has kept records on the harvest of fish since 1916. According to these records, the early 1950's were the last years for good fisheries production in California. Since 1950, a steady decline in harvest continued until the inshore production of fish now amounts to only 200,000 tons annually.~~

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 have been depleted to the point of endangerment and require ~~an extended period of time~~ 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.

~~Skin diving around the peninsula further depleted marine life by producing a yield of about 1/3 the amount of fish that sport fishing boat tours annually produce.~~

According to the South Coast Regional Commission's estimates, there are provisions for the docking ~~of 19,463~~ a very large number of private boats in the South Coast Region. ~~The state of California has within its bounds 47,400 private boats. It can thus be seen that the South Coast Region is probably the most heavily used in terms of pleasure craft. Of all boats docked in the South Coast Region, over 90 percent are located within 20 miles of Rancho Palos Verdes.~~ 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 1999, State Legislators passed the Marine Life Protection Act (MLPA) and proposals to create protected marine areas off the Palos Verdes Peninsula was one of the top priorities in order to maintain a sustainable level of the rare marine diversity in this area. Unless specifically prohibited, all non-extractive uses such as swimming, wading, boating, diving, and surfing are allowed in protected marine areas.

~~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.~~

Abalone Cove Shoreline Park and Pelican Cove (formally Point Vicente Fishing Access) are two of the more ecologically diverse coastal regions in the Peninsula. The Abalone Cove features two beaches, tide pools, bluff-top viewing area, and trials. This Reserve contains a State Ecological Preserve with important natural marine resources at the bottom of the Portuguese Bend Area. To address human impacts, these two coastal regions were designated as State Marine Protection Area by the California Department of Fish and Wildlife Agency. The Abalone Cove State Marine Protection Area prohibits all "hook and line" fishing at this location, and only allows recreational take of pelagic (fish found in the open ocean) finfish. The Point Vicente State Marine Protection Area prohibits the taking of all living marine resources, including "hook and line" fishing and spear fishing. However, scientific research and habitat restoration efforts continue to be allowed through a special permit issued by Fish and Wildlife Agency.

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 (California Coastal Zone Conservation Commission ~~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, helps to develop positive ~~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. Fisherman also use some of the species for bait. 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, food remnants ~~and beer cans~~ leaving an aesthetically dis~~un~~pleasing 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 California Department of Fish and Wildlife Agency ~~Game have~~ developed guidelines for conserving tide pool resources. ~~Today,~~ State legislation prohibits the taking of any tide pool organisms without a permit from the California Department of Fish and Wildlife Agency ~~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. The combination of Los Angeles County Sheriff personnel, Recreation Open Space Management staff, and Palos Verdes Peninsula Land Conservancy staff and volunteers who patrol, control, and educate people using the City's beaches, parks, and trails to help ensure that sensitive areas are maintained.

~~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 ~~may also~~ 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~~ could 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~~ marine 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 of Rancho Palos Verdes, by creating this type of action would then be responsible to enact, maintain, and enforce any regulation it ~~may choose to develop~~ would enact.

4 Resource Classification

~~This analysis recognizes the significance and interrelationships of the natural environmental factors in order to develop a management plan. This plan is to define and regulate development within areas which may be potentially hazardous, and 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~~ and environmental) 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~~ would be natural topography alteration resulting in a 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 ~~environmental factors~~ ecological units as described in the previous chapters enabled an understanding allowing identification and classification of critical areas for management considerations. ~~T~~As a result, 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 components making up each classification, all components determined to be critical were given a numeric code designation for reference purposes. ~~Components numbered~~ Each of the components have been titled "Resource Management Districts" as they are areas (or districts) that represent the specific resource. Resource Management Districts 1 through 5 are those elements which can be considered in relation to health and safety. Numbers 6, 7, and 8 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.~~

A list of the Resource Management Districts is found below in Table 4.

Table 4

Resource Management District Code Designations

Resource Management District	Code Designation
Coastal Zone	RM 1
Extreme Slope (greater than 35%)	RM 2
High Slope (between 25% and 35%)	RM 3
Active Landslide	RM 4
Dormant Landslide Area	RM 5
Hydrologic Factors	RM 6
Marine Resource	RM 7
Wildlife Habitats	RM 8
Other Natural Vegetation Areas	RM 9

4.1 Areas of Consideration of Public Health and Safety

Areas for consideration of public health and safety ~~This classification~~ includes ~~those~~ areas where critical areas of ~~concern in which~~ the ~~natural~~ physical environment poses a significant hazard to the well being of the public. These ~~normally~~ typically include natural hazard zones such as unstable ground conditions, or seismic hazards.

~~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 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 geotechnical 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 less than other areas of the State, a hazard does exist and must be recognized. The Coastal Commission proposal enables designation of lesser setback if geologic engineering studies determine specific areas are geologically stable or where adequate protective works currently exist. On the other hand, the proposal does enable designation of greater setback or total exclusion in areas of known high instability.~~

~~Areas of steep slope were included in two categories; extreme slopes of 35 percent and greater; and high slopes between 25 percent 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 and their numeric code are as follows:~~

The Resource Management Districts related to public health and safety and their numeric codes are found in Table 5.

~~Resource Management District~~	~~Code Designation~~
~~Sea Cliff Erosion Hazard~~	~~RM 1~~
~~Extreme Slope (35% and greater)~~	~~RM 2~~
~~High Slope (between 25% to 35%)~~	~~RM 3~~
~~Active Landslide~~	~~RM 4~~
~~Old Landslide Area~~	~~RM 5~~

Table 5
Code Designations Related to Public Health and Safety

Resource Management District	Code Designation
Coastal Sea Cliff Erosion	RM 1
Extreme Slope (35% and greater)	RM 2
High Slope (between 25% and 35%)	RM 3
Active Landslide	RM 4
Dormant Landslide Area	RM 5
Flood Plains	RM 10
Areas Representing High Fire Risks	RM 11

The location of these ~~areas~~ Resource Management Districts may be found on Figure 8. A description of each district and the conservation efforts needed to address public health and safety are as follows:

RM 1 – Coastal Zone ~~Sea Cliff Erosion.~~ The purpose of managing development within this district is to ensure public safety from sea cliff erosion, landslides, 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 detailed 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, ~~nature, magnitude and periodicity or wind, waves, and current;~~ ground and surface water conditions and

variations, and all other factors affecting slope stability. The studies study must describe the effects of the proposed development and must conclusively 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 This must be demonstrated to the satisfaction of the City before approval for any development is granted.

RM 2 – Extreme Slope. Extreme slopes are slopes of 35% or greater. 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 cut 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. Any use within this district should retain natural topographic condition. Practices distorting the topography of hillsides in any fashion should be prohibited. Only nonstructured Non-structural uses such as passive park, trails, agriculture, etc., should be are permitted along with minor alterations for ancillary accessory structures. Detailed engineering/geologic study must accompany any proposal may be required for development proposals or use to and must demonstrate to the satisfaction of the City that the proposed development or use will not significantly alter the existing requires no alteration of topography, pose significant risk to human life or cause significant 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 a particular parcel is classified.

RM 3 – High Slope. High slopes are areas between 25 percent and 35 percent and considerations are gradient. Although considered similar to extreme slopes, high slopes contain less degrees District although the lesser degree of slope that enables a greater degree of flexibility. Engineering/geologic studies should 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 should 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, it is recommended that construction of new permanent structures be 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 with limited water usage, area of geologic interest, etc.; however, any use these uses must not create a situation further aggravating the condition. Irrigation or other practices which could trigger further slippage should requires regulation. In any event, any proposed use or development should 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 within certain parameters. (See Land Use Plan for further discussion of the existing residential area in the active slide.)

RM 5 – ~~Old~~ Dormant Landslide Area. These areas have experienced downslope movement in the past, but are not currently ~~moving~~ active. Movement could include creep, but creep can be related to localized down slope movement due to gravity within slope areas or due to expansive soils and not necessarily due to landslide movement. For a landslide to be creeping, it has to be shown by monitoring over a long period of time (at least 3 to 4 years minimum) by a number of widely spaced monitoring points. In these areas, s~~S~~ome ~~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 ~~and that much of the area within this district would not be suitable for most developments and uses.~~ Those areas which are stable and potentially developable ~~should~~ 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.

4.2 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 Resource Management Districts for the Preservation of Natural Resources identify critical natural resources, as listed in table 6.

Table 6 - Code Designations for Natural Resources

Resource Management District	Code Designation
Hydrologic Factors	RM 6
Marine Resources	RM 7
Wildlife Habitats	RM 8
Other Natural Vegetation Areas	RM 9

The location of these Resource Management Districts may be found on Figure 7. A description of the Conservation Efforts needed to address the Preservation of Natural Resources are as follows:

RM 6 – Hydrologic Factors. ~~It is in the public interest to m~~Maintaining the optimum operation of the hydrologic cycle is in the public interest since it constitutes an important resource (water) and interacts with other resources (vegetation, ocean resources). ~~The fact that~~ Because 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 that create excessive silt, ~~or other pollutant runoff or~~ increase drainage load, cause pollutant runoff, increase canyon-wall erosion, or potential for landslide. ~~Present d~~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. Development projects located near environmentally sensitive areas or waterways are required to comply with National Pollution Discharge Elimination Systems (NPDES) requirements set forth by the State.

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 relating to ~~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. Sensitive areas identified in the NCCP/HCP shall follow established NCCP/HCP minimization guidelines.

RM 9 – Natural Vegetation. The existing natural vegetation ~~of Rancho Palos Verdes~~ is a major component of the environmental and visual character of the City. As discussed in the Visual Resources Element, 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~~ preserved wherever possible. Any proposed development within this district should seek to re-vegetate with native material wherever clearing of vegetation is required. All areas identified in the NCCP/HCP shall follow established NCCP/HCP minimization guidelines.

~~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. Currently, the The marine environment offshore is seriously degraded 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.~~

~~There are three large waste water discharge points, all located within twenty miles of the Rancho Palos Verdes coast. The Southern California Coastal Water Research Project (SCCWRP) Study of California's coastal waters concluded that generally the ocean is able to assimilate most wastes but in the case of the Palos Verdes Peninsula, it is located so close to such intense waste water discharges, that the ocean's ability to do so is exceeded by the vast amounts of discharge. The majority of this waste water received only primary treatment but federal legislation requires that all waste water will have secondary treatment removing 80 percent to 90 percent of the oxygen using wastes from the effluent prior to July of 1977 (C.C.Z.C.C., The Marine Environment). However, it cannot be assumed that these standards can be met by the local sanitation district and it is more likely that a longer period of time may be necessary before compliance. These pollutant sources are not directly under the jurisdictional authority of Rancho Palos Verdes, but management of land use practices within the City could aid in reducing surface flow pollutants and aerial fallout such as dust, lead from motor vehicle exhaust, etc.~~

~~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 sol 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. These are generally found in natural canyon areas such as Aqua Amarga and Malaga Canyon where wildlife thrive due to the protection and food found from the natural vegetation. Though there are no endangered or rare species of wildlife or vegetation, except for a single variety of plant material, these wildlife habitats are significant because of the wide variety and numbers of wildlife which are associated with them. Additionally, the natural vegetation of grasses and wild flowers found on the hillsides and canyons gives a unique environmental character of the City which if to be preserved, requires the maintenance of the natural drainage system and topography.

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

Natural Environment Element

5 Conservation

5.1 Conservation of Areas with Multiple Resource Management Districts

The Natural Environment 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 Conservation and Open Space Element is a composite of those Resource Management Districts requiring consideration of public health and safety and those requiring preservation of natural resources. These districts are interrelated. All of the individual conservation efforts and development criteria described for each Resource Management District must be considered together when there are multiple districts in one area. Multiple Resource Management Districts falling in one specific area will have more sensitivity to development compared to only one Resource Management District. For example, RM 1, 2, 4, and 8 refers to a district that must consider (1) bluff setback, (2) extreme slope, (4) active landslide, and (8) wildlife habitat factors.

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.

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.

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.

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. The total acreage of all resource management districts is 2,670 acres which represents approximately 33 percent of the total acreage of the City.

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 located outside the City which may impact upon or receive be effects from impacted by the 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 City's efforts to maintain natural environmental features 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. On Figure ?, selected areas have been shown with a dashed arrow which are outside the City boundary. The City should consider a 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 Aqua 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. Wildlife corridor connections should be encouraged by coordinating private and public lands within and without the city limits.

C.5.1 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 Natural Environment 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, Fiscal Element, Socio/Cultural Element, and Urban Environment Element.

~~Socio/Cultural Element III~~

~~It is the goal of the City to preserve and protect its cultural resources and to promote programs to meet the social needs of its citizens.~~

Cultural Resources

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~~ human activities during these times, often erroneously called "pre-history." The only records we have of ~~man~~ human 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~~ people 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~~ contemporary society.

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. ~~In 1971, Executive Order 11593 was issued which called for the "Protection and Enhancement of the Cultural Environment." However, it was not until 1973 that the Advisory Council on Historic Preservation established "Procedures for Compliance." All Federal agencies were instructed to coordinate the National Environmental Policy Act (NEPA) Section 101(B), (4) with the National Historic Preservation Act of 1966 and Executive Order 11593. This ensures compliance for all projects which would be covered under NEPA or any project performed by a Federal agency which would ordinarily be exempt from NEPA requirements.~~ 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~~ a 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 the City ~~Rancho Palos Verdes~~, several significant archaeological sites are known to exist. In addition to these known sites, there are areas within the City ~~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 ~~Environmental Services 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~~ Tongva-Indians. ~~Indians of the ". . . wider Gabrielino group~~ who 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 the City's ~~Rancho Palos Verdes~~ coastline where the Tongva-Indians ~~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~~ mainland traded with the islanders for otter pelts, abalone shells 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 Drive in the upper Portuguese Bend community ~~area~~. ~~and south of Crest Road at Highride Road. Just north of Crest Road in Rolling Hills Estates a highly significant archaeological site has been recorded. This site contains two small components which ". . . may simply represent a different season of occupation by the same people who lived in the large sites along the coast, or they could have been occupied by a separate people with a different kind of ecological adaptation." (Ultrasystems). During the investigation of this site, now recorded as LAN-709, the archaeologically sensitive area south of Crest Road in Rancho Palos Verdes was discovered.~~

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~~ human history ~~of~~ on the 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 grove of trees planted at Ryan Park, Malaga Cove Library, 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 Viceroys; 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); ~~and finally,~~ the Portuguese Bend Riding Club and stables, which serves as the hub of a social sector in the area; and Wayfarers Chapel, which was designed by Lloyd Wright, son of the renowned American

Architectural pioneer Frank Lloyd Wright, and placed on the National Register of Historic Places in 2005. These sites and structures represent the major historical points in Rancho Palos Verdes.

Several other features, such as the Narcissa gatehouse ~~gated entrance~~ to ~~upper~~ Portuguese Bend, ~~Wayfarer's Chapel, and Marineland~~ 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, mid-20th century modern residential architecture has gained favor, and the City is home to several examples of this style, such as the 190 Paul R. Williams-designed homes in the City's Seaview neighborhood and other custom, single-family homes designed by such well-known mid-century architects as Lloyd Wright, Richard Neutra, Aaron Green, Thornton Abell, and Pierre Koenig.

~~*The City's Options*~~ 6.2 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. ~~To date, California does not have such a plan.~~ 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~~ became parks or open space areas. No grading ~~would be done which would~~ was allowed that 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~~ is even more archaeologically desirable ~~if the~~ for land ~~became~~ that is publicly owned. ~~This is because~~ as 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 not 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 private matter ~~civil matter and should be left to civil forces and remedies~~.

Vehicles for Identification and Protection of Archaeological Resources. ~~As a checking procedure, Environmental Impact Reports can be sent 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, SCA's nearest affiliate agency. SCA can also review the environmental impact report for it's archaeological adequacy, based on up-to-date information of the area and expertise in the field~~. 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 t~~ These procedures, ~~it is hoped that~~ are intended to preserve and protect 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.

The Palos Verdes Library District's Local History Center has a historical collection that includes, but is not limit to, materials related to the cities of Palos Verdes Estates, Rolling Hills Estates, Rancho Palos Verdes, and Rolling Hills. It consists of materials in a variety of print and non-print formats, including books, clippings files, early serials, maps, oral histories, historic photographs, and yearbooks.

7 Open Spaces and Recreational Resources

The City has natural open space (some privately owned and some under City jurisdiction, including the Preserve subject to NCCP/HCP guidelines) and parks that include a mix of active and passive uses. These open space and recreational areas are shown in Figure 8, Open Space Recreational Areas.

~~*Recreational Activity*~~

~~Recreational activity areas in this section 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. Path and trail networks, systems which involve linear right-of-way for the purpose of transportation or recreation, are addressed within the Infrastructure section. The purpose of this section is to provide open space for recreational purposes.~~

7.1 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) outdoor recreation, or (3) 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 ~~Recreational Activity~~ Open Space Areas. ~~Recreational activities are supplied by both the public and private sectors of the community. Although the latter is not under direct control of the City as to quantity and quality of these facilities, they are major suppliers of specialized recreational activities. 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. It is to the community's advantage that they may either help diminish recreational demands or supply specialized facilities which are not supported by the City.~~ To serve aesthetic interests, to preserve natural resources, and to protect the public's health and safety, many of the existing residential subdivisions developed within the City as Residential Planned Developments (RPDs) include areas that are subdivided parcels dedicated to be preserved as open space, and are privately owned, typically by the subdivision's homeowner's association. These open space areas often include trails and vista points that were required as part of the subdivision and are maintained through dedicated public access easements. Some open space areas within existing subdivisions provide recreational opportunities. Within Rancho Palos Verdes, various types of private facilities (tennis courts, equestrian centers, beach clubs) 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 to their topographic and/or geologic nature, may not be developable. As a result, a portion or the entirety of these parcels have a land use designation of "Hazard" or "Open Space Hillside" that prohibit most types of development. These parcels serve to preserve the aesthetic open space feel while protecting the public's health and safety. Some of these natural open spaces could be either acquired by the City or dedicated through an easement to provide wildlife corridor connections and trails.

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 that serve to provide mitigation for the project's impacts to habitat and wildlife. These open space areas often include trails and vista points that were required as part of the subdivision and that are maintained through dedicated public access easements.

The City is home to eight elementary schools, three middle schools, and two high school under the jurisdiction of the Palos Verdes Peninsula Unified School District, Marymount California University, and The Salvation Army / Crestmont College. These campuses have fairly extensive open space areas used recreationally by the students and members of the community.

Public ~~Recreational Activity~~ Open Space Areas. ~~Public recreational facilities are provided for by various levels of government. The facilities are proposed, planned, acquired, developed, and operated by these separate jurisdictional entities. This often generates problems in coordination of use of recreational facilities due to the fractured nature of their control. Regardless of these problems, government is the primary source of supplying and maintaining open space lands for the general public's use.~~ Publicly-owned open space within Rancho Palos Verdes is plentiful and is provided for by various levels of government. Although the City has acquired and dedicated a large number of parks, each with its own qualities and attributes, in recent years the City has worked extensively toward the purchase of large open space areas to create a habitat Preserve, also known as the Palos Verdes Nature Preserve, as identified by the City's NCCP/HCP. These public open space areas serve residents and visitors by providing an "open feel" to the City, preserving natural resources, and creating outdoor recreational opportunities.

~~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.~~

7.2 Recreational Resources

Aside from the Preserve, active and passive recreational facilities that are publicly owned supply approximately 413 acres of recreational areas; 396 acres are developed and 165 acres is a public golf course. The total acreage figure does not include a significant amount of recreational areas supplied by Palos Verdes Peninsula Unified School District facilities.

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 Circulation Element.

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, most passive recreational areas remain 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.

Most recreational sites have a specific Land Use Designation from the General Plan Land Use Map of "Recreational-Active" or "Recreational-Passive", thus clearly establishing the types of uses envisioned for the site. However, a few of the sites, based upon their specific site conditions, ownership and/or unknown future use,

have multiple Land Use Designations that also include "Institutional" and "Open Space Preserve", or single Land Use Designations other than "Recreational Active" or "Recreational Passive".

The following provides a brief description of each site including its General Plan Land Use Map Designation, and groups the recreational facilities into the level of government which controls and operates the facility.

~~*Active Recreational Areas*~~

~~Active recreational facilities supply 205 acres of structured recreational areas; however, only 176 acres are developed and 165 acres of that is a golf course. Consequently, there is presently only one small developed community park. The total acreage figure does not include a significant amount of recreational areas supplied by Palos Verdes Peninsula Unified School District facilities. It is difficult to calculate the acres supplied by existing and proposed school sites. Prior to incorporation of the City the County did not require parkland or fees to serve new development and residents were forced to rely on the use of school facilities.~~

~~The General Plan does not, at this time, designate specific additional active recreational areas in the City (except two school sites), unless General Services Administration accepts the City's proposal for desired use of the upper and lower Nike Sites. If the City obtains these sites, it is proposed that recreational facilities would be incorporated into the overall site use. Some additional areas of the City will be added, based on additional study which will follow the General Plan, to provide and equitable dispersion of facilities throughout the City, based on neighborhood desires, and those which will be required with the addition of new developments.~~

~~Palos Verdes Peninsula Unified School Facilities.~~ ~~Palos Verdes Peninsula Unified School Facilities is the largest supplier 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 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 tat 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. The City currently operates recreation programs at various school sites throughout the City. An example of this is a summer program offered at Miraleste Pool. The School District and City are investigating construction of tennis courts at Miraleste High School on a joint basis.~~

~~Rancho Palos Verdes~~ 7.3 Recreational Parks and Facilities

- ~~**Rancho Palos Verdes Park.** This fully developed 11 acre city park contains highly structured activity areas. These consist of sports activities, children's play apparatus, picnic facilities, concession potential, and a recreational activity building. Recreational programs are provided at the park activity building. These programs are designed to offer activities for a wide range of age groups (3 years to senior citizen) and are presently operating at full capacity.~~

Abalone Cove Shoreline Park – Recreational Passive/Open Space Preserve: This ~~proposed park~~ ~~is projected to include 82 acres, located along the south side of Palos Verdes Drive South between Sea Cove and Peppertree Drives. The proposed beach area park is comprised of two parcels of approximately 41 acres each. The owners of the westerly parcel have agreed to sell the land to the County, while condemnation proceedings will be required on the second parcel. This proposed beach facility will be primarily a nature study area, rather than a high density bathing beach. The only improvements will be a reinforcing and modification of existing improvements (paddle tennis courts, parking lots, picnic areas, associated buildings, and infrastructure systems)~~

where they need repair or are below standards, and the installation of four portable lifeguard stations. The headlands and other tidal reef areas will be closed at minus tides except to guided or monitored walks in special environmental corridors. features access through the Abalone Cove Reserve, which is part of the City's NCCP/HCP, to two beaches (Abalone Cove and Sacred Cove), tidepools, bluff top viewing areas and trails crisscrossing the area. The park is improved with trails, picnic tables, benches and viewing nodes, and is within a State Ecological Reserve. 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 through the Reserve. To access Sacred Cove, users must walk along Palos Verdes Drive South to one of two trails between Portuguese and Inspiration Points, and through the Reserve to the beach. Lifeguards are on duty at Abalone Cove Beach during summer hours and weekends only. The views of the ocean and Catalina Island are spectacular from this Park. Dogs are prohibited on the beach; however, on-leash dogs are permitted in the upper picnic area and on designated trails.

Hesse Park Crestmont Park (Upper Site) – Recreational Active: Crestmont Park is a 29This 28.32 acre site park, with its well-manicured parkland and active community center, is one of the most popular in the City which fronts on Hawthorne Boulevard between Verde Ridge Road and Locklenna Lane. 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 City's 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 as well as provide space for government meetings. This site is one of three sites that has been declared surplus by the Palos Verdes Peninsula Unified School District. The purchasing of this site by the City will take place over a four year period and is planned to be developed into an active neighborhood park. Partial facility development may be provided by private

Hesse Park (Lower Site) – Recreational Active: The lower park site (approximately 18 acres) offers a sand volleyball court, picnic areas (no barbecues permitted), leisurely walking paths, natural play elements, and comfortable locations for enjoying panoramic views of Catalina Island north to Malibu.

Ladera Linda Community Center – Institutional Public: 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 and fauna. Volunteers provide educational programs on-site for a variety of school, youth and other groups as well as conduct docent-led hikes in the adjacent Forrestal Preserve. This 11.21 acre location also has a multipurpose room and classroom available for rental for meetings, classes and private parties. There are excellent views of the cliff face, hillsides, coastline and ocean. Improvements at this older facility have been considered for many years. A Master Plan process for this site was included in the 2016 Parks Master Update.

Upper Point Vicente Park/Civic Center– Recreational Passive, Institutional Public and Open Space Preserve: Formerly a World War II bunker site and Nike Missile Base, this 73.3 acre site is comprised of dedicated to Institutional Use; Open Space Preserve lands; and Recreational Passive park land. The site surrounds a 4.5 acre parcel that is owned by the US Coast Guard.

The City owns in fee title 8.23 acres, which is not encumbered by deed restrictions or a Program of Utilization. The remainder of the site (comprised of 65.12 acres) was given to the City by the federal government with a quitclaim deed that included several deed restrictions including a Program of Utilization calling out for passive use of the 65.12-acre parcel with the exception of a potential 6.6 acres to be for active recreational use. The area set aside for Institutional Use (8.23 acres) is on the relatively level hilltop at this park and includes the City's City Hall buildings, a telecommunications site, a multimedia studio, the City's maintenance yard, and grassy

field. A dog park, sand volleyball court, grassy field and tennis court are located in the Recreational Passive portion of the site. There are spectacular views of the ocean, Pelican Cove and the Lighthouse, and this is the site of the City's annual July 4th Independence Day Celebration.

The U.S. Coast Guard parcel within this Park and overlooking the Point Vicente Lighthouse is the site of several communications towers and an abandoned WWII-era artillery bunker.

The Open Space Preserve lands sloping down the hillside, known as the Alta Vicente Reserve, will be encumbered by a conservation easement, deed restrictions, and the Program of Utilization. The NCCP/HCP permits passive recreation in this Reserve, which includes trails through Coastal Sage Scrub habitat that is actively being restored by the Palos Verdes Peninsula Land Conservancy, as well as trails through an approximately 5 acre area of the property that has been leased to a farming operation for many years, which is a permitted use in the NCCP/HCP and PUMP document.

Many Master Planning efforts have been pursued for this location, but the future of this site and its uses, which must comply with the Program of Utilization for the site unless an amendment is sought, remains undetermined at the time of drafting. Planning efforts are underway to improve the site with a new City Hall, public safety, and recreational facilities and activities. Any changes to the property through Master Planning efforts require approval by the Planning Commission and City Council through public hearings along with review and approval of a change, if necessary, to the Program of Utilization by the National Park Service.

Robert E. Ryan Park – Recreational Active: The City's first park was transferred from the County at the time of the City's incorporation in 1973. This 11.61 acre active recreational 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 – Recreational Passive: Improvements on this 9.9 acre site include a children's playground, picnic facilities, jogging path, permanent restroom, landscaping, dog park, and an off-street parking lot.

Lower Point Vicente/Point Vicente Interpretive Center – Recreational Passive and Open Space Preserve: This site is approximately 27.4 acres and was acquired from the Federal government with deed restrictions that included a Program of Utilization spelling out passive use of the land. 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/HCP's Preserve referred to as the Vicente Bluff Reserve. In addition, this is the site of the City's annual "Whale of a Day" community event. In 2005 an 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.

Clovercliff Park – Recreational Passive: 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 – Recreational Passive: 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, as well as the Donor Recognition Overlook recognizing those who contributed towards the acquisition of the Palos Verrdes Nature

Preserve. The park is landscaped and has a safety fence just below the bluff to restrict access to the canyon below without blocking the views. The Park has a parking lot, but no restrooms.

Don C. Wallace Radio Ranch Museum – Residential 2-4 D.U./Acre: 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 – Recreational Passive: 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. This 5.5-acre parcel is located adjacent to the Trump National Clubhouse and offers patrons an attractive site with breath-taking ocean views, picnic tables, a gazebo, nearby restrooms, coastal access and adjacent walking and biking trails.

Frank A. Vanderlip, Sr. Park – Recreational Passive: 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. Vanderlip Park is being purchased by the City from Palos Verdes School District in conjunction with the Hesse Park site. It is intended for this 17 acre site to remain passively~~ ~~ta~~ for the next few years. At a later date, this site will be developed into a passive recreational park with limited facilities. An additional small passive park, Clovercliff, is located on Golden Meadow Drive at the terminus of Clovercliff Drive.

Grandview Park – Recreational Passive: 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 of Grandview Park for the purpose of improving accessibility to all user groups and enhancing the aesthetic condition of the Park.

Marilyn Ryan Sunset Point Park – Recreational Passive: This is a 1.5 acre park that was conveyed to the City in 2011 by VH Properties. The park provides access to a trail system near Trump National Golf Course and also park offers picnic tables and benches for public use. A 6-car parking area is located adjacent to the park for public use. The Simmons Bridge and a dolphin statue are two landmarks that can be seen at this park and from Palos Verdes Drive South.

Martingale Trailhead Park – Recreational Passive: 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.

Vista Catalina Park – Recreational Passive: This is a 1 acre trailhead located adjacent to Trump National Golf Course and offers access to pedestrian trails surrounding the golf course. The park includes the monument sign for Trump National Golf Course, a drinking fountain at the trailhead. This park offers views of Catalina Island and the ocean.

Pelican Cove ~~Fishing Access~~ – Recreational Passive and Open Space Preserve: The City acquired this property from Los Angeles County through a grant deed in May 2004. This 10.5-acre site features a paved parking lot, a restroom building, an improved trail to the shoreline, and incredible Catalina and ocean views. ~~Point Vicente~~

~~Fishing Access lies on the ocean side of Palos Verdes Drive South, between Point Vicente Lighthouse and Marineland. The fishing access is a fully developed 11 acre site which provides access to the shoreline for fishing and scuba diving purposes.~~

Shoreline Park – Open Space Preserve: This ~~Shoreline~~ park is entirely within the Ocean Trails Reserve, a subarea of the Palos Verdes Nature Preserve ~~consists of a 53 acre site which lies adjacent to the eastern boundary of the City, between the shoreline and Twenty-fifth Street. Preliminary development plans propose light day use facilities.~~ 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.

Archery Range – Recreational Passive: The Archery Range parcel has physical and other constraints that make habitat preservation challenging and restoration almost impossible. Thus, the property is not proposed to be included in the City's NCCP/HCP Preserve, but will remain as an open space parcel. The City will probably need to grade the area and repair or replace storm drains in the future to mitigate landslide movement. Additionally, the property is encumbered by an easement that gives the adjacent Portuguese Bend Club the right to perform remedial grading on the parcel on as-needed basis.

Gateway Park – Recreational Passive: The approximately 17-acre Gateway Park is located at the southern tip of the Portuguese Bend Preserve. No permanent structures are envisioned on this property due to active land movement in the area.

7.4 City of Los Angeles and Los Angeles County Facilities

Deane Dana Friendship Community Regional Park – Recreational Passive: This park is a 123 acre natural area park located partially (97 acres) ~~of which 97 acres are within~~ in the City and partially in the City of Los Angeles, and is managed by the County~~, is on the eastern boundary of Rancho Palos Verdes, just north of Twenty-fifth Street~~. The park offers dramatic panoramic views of Catalina Island, Los Angeles, and Long Beach Harbors, Los Angeles, 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. The park also has a picnic area, barbecues and playground overlook are also within the park boundaries. ~~Designed use capacity of this park is approximately 1,000 persons, with access being obtained from outside the City, off Ninth Street. The purpose of Friendship Park is to provide a public facility which will give recreational usage overlooking shoreline areas. Development plans call for construction of moderate day-use facilities, various scenic vista points, a nature trail, and minimal landscaping. The southwest corner of the park is designated as a landslide hazard.~~

~~Los Angeles County Facilities~~

Los Verdes golf Course~~.~~ –Recreational Active: 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). ~~At present, the County forsees no need for expansion to take place.~~

7.5 Palos Verdes Peninsula Unified School District Facilities

Although the Palos Verdes Peninsula Unified School District Facilities is under its own jurisdiction, it 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.

~~Point Vicente Park. The County is leasing a 28 acre portion of the lower Nike Site for a limited recreation facility. The section to be leased lies on the ocean side of Palos Verdes Drive West, just north of Pointe Vicente Lighthouse. The County will remove the present rifle range and develop a light day use facility. Because of the tentative nature of the potential ownership of the Nike Sites (refer to Institutional section), the County proposes to temporarily develop this site until a decision is reached by the General Services Administration. At that time, the site will be reevaluated as to its future use. A light passive recreational use of this site would be a compatible nature to the community's desire to maintain open space uses along the coastal area.~~

~~Portuguese Bend. The County has the acquisition of the ocean side section of Portuguese Bend's active landslide on its priority list. Indications are that this site would be opened for public access, with no designed recreational facilities.~~

~~*Passive Recreational Areas*~~

~~Passive recreational activities comprise the largest amount of recreational lands (375 acres) proposed 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. The facilities should propose a low structuring, in order that the coastline may be enjoyed in its natural state.~~

~~The Plan does not propose large public purchase of passive recreational areas. This does not mean that the Plan ignores the value of these recreational lands in preserving open space for public enjoyment; it only indicates that alternative policies are proposed to reduce the tax burden that would be incurred through public title. All other sections of the Plan propose methods that will help preserve the natural character of the City.~~

7.6 NCCP/HCP Reserve Areas (Palos Verdes Nature Preserve)

Abalone Cove Reserve. This Reserve consists of a 65.2-acre portion of Abalone Cove Shoreline Park. The property features two beaches (Abalone Cove and Sacred Cove), tidepools, bluff top viewing areas and a network of designated trails. Excluded from the NCCP/HCP Reserve are the upper parking lot and picnic area, the lower parking lot and preschool/ lifeguard area, and the shoreline. This Reserve also contains a State Marine Conservation Area and Ecological Reserve, under State jurisdiction that protects the marine and intertidal resources.

Three Sisters Reserve. This property, generally located in the vicinity of Barkintine and McCarrell Canyons, was purchased by the City 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 acres in size. This reserve is located on the western side of the Portuguese Bend Reserve. The property

contains outstanding habitat and is heavily used by hikers, mountain bikers, and equestrians. It also contains habitat corridors deemed essential for maintaining stable populations of California Gnatcatchers and Cactus Wren.

Filiorum Reserve. This 189.8 acre parcel was purchased by the City from a private developer with a combination of funds from the California Coastal Conservancy, State Wildlife Conservation Board and private donations and is mostly located within the City's landslide moratorium area. The site contains outstanding habitat and used by hikers and equestrians.

Portuguese Bend Reserve. This 427.2-acre property is owned by the City and includes a portion of an active landslide area. This Reserve serves as the most heavily used entrance to the Preserve and is used by hikers, bicyclists, and equestrians. This Reserve also includes the Del Cerro Buffer, which is owned by the City, is 17.4 acres, and consists of very steep slopes immediately adjacent to Del Cerro Park.

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: the 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 158 acres in size. Multi-use trail exist on the property as well as a paved road and significant drainage structures remaining from a proposed subdivision.

Agua Amarga Reserve. This 61-acre property is partially owned by the City and the Palos Verdes Peninsula Land Conservancy, and contains two canyons – Agua Armaga and Lunada, which merge at their western ends just above the border with Palos Verdes Estates. This reserve has pedestrian and bicycle trails. Agua Armaga was acquired in 2005 and is home to many California gnatcatchers. Lunada Canyon was a gift from the E.K. Zuckerman family to the Palos Verdes Peninsula Land Conservancy. The parcel contains coastal sage scrub and willow wetland.

Alta Vicente Reserve. This 50.9 acre parcel is below the upper flat area of Upper Point Vicente Civic Center property. It has pristine CSS habitat for the endangered Coastal California Gnatcatcher and SCS habitat for the Coastal Cactus Wren, a State Species of Concern. Johnat~~on~~han Atwood did an extensive study of the Coastal Gnatcatcher at this site and influenced the policies for the focus species for the NCCP/HCP. The PVPLC has planned further habitat restoration and trail enhancements for this area. There is the potential to create a wildlife corridor through the northern border of Lower Point Vicente to connect this reserve to the Vicente Bluffs reserve habitat.

Vicente Bluffs Reserve. Approximately 62.5 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 open space served by a trail system and a public parking lot. A restored native habitat are also included in the project. A majority of the Pelican Cove open space lot is a part of the Vicente Bluffs Reserve. The City acquired this property from Los Angeles County in May 2004. This site features a paved parking lot, a restroom building, an improved trail to the shoreline, and incredible Catalina and ocean views. 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.

Ocean Trails Reserve. This 116.6-acre Reserve is within the Trump National Golf Club site. While the 5.5 acre Founders Park and some open space lots ~~has~~ have been dedicated and accepted by the City, ~~the~~ various other 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. 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. Shoreline Park is within the Ocean Trails Reserve.

San Ramon Reserve. This 94.5-acre Reserve was received pursuant to the Quimby Act in conjunction with development of the Seacliff 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 very steep with commanding views of the ocean and Catalina Island. Although Palos Verdes Drive East is within this Reserve boundary, parking and access to the open space areas are difficult and limited. Portions of the Reserve extend to the San Ramon Canyon bottom, which may require some erosion mitigation.

Vista Del Norte Reserve. A 16.8-acre parcel was purchased by the former Rancho Palos Verdes Redevelopment Agency for approximately $702,000 in March 2000 in the hopes of developing affordable housing for older adults 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 Redevelopment Agency approved a Parcel Map that subdivided the parcel into two parcels: Parcel 1, a 2.92-acre parcel to accommodate development of a 34-unit senior affordable housing project ("Mirandela"), and Parcel 2, which is part of the City's Preserve called the Vista Del Norte Reserve. This is a 16.8-acre steep parcel that was split off from the Redevelopment Agency Crestridge Parcel. It borders Rolling Hills Estates along Indian Peak Road and has some trails and native habitat.

Malaga Canyon Reserve. In February 2014, the City purchased open space in Malaga Canyon from private landowners using WCB and USFWS Section 6 Habitat Conservation Plan Land Acquisition grant funds. This 61.5-acres Reserve provides open space into the Preserve.

7.7 Additional Public Open Space

Cherry Hill Lots. Six Cherry Hill lots were purchased from the Redevelopment Agency when the City moved Palos Verdes Drive South back into its original easement in 1988. Since that time, additional lots were purchased, and as of 2018, the City owns 13 lots totaled 6.02 acres. Most of these lots are unimproved, but at least one lot has dewatering facilities on a portion of the property.

McKay Property. The McKay property was donated in 1994 to the City by the family that owned it. The property is 2.05 acres and is currently zoned as Commercial Professional. The property is mostly a steep hillside and has no practical use except to provide a view.

7.8 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.

~~Additional Recreational Facilities. Although the General Plan does not delineate specific additional recreational areas, it is intended that facilities will be added in conjunction with proposed developments (which, by providing additional units, will induce new residents, which, in turn, place a recreational load on the community), and through further study of existing neighborhoods.~~

~~Various implementation techniques (consult the Implementation section) will enable the City to obtain additional open space and recreational lands in conjunction with new developments. This is especially true in undeveloped areas to the south of Crest Road. The exact amount and use of these open areas (natural open space, passive recreational areas, or active recreational areas) will not be known until development proposals and~~

~~environmental impact reports are submitted for these individual areas. It is through this segment of City development that specific site information would be obtained which would evaluate the best use of dedicated open space.~~

~~A further study of recreational activities on a neighborhood level could follow this General Plan. The study would concentrate on recreationally deficient areas such as the eastern portion of the city and high density housing concentrations along Ravenspur Drive and Highridge Drive. This study could analyze each existing neighborhood in order to determine amount of deficiency and propose solutions to both existing and potential problems. Solutions might resolve from joint efforts of the City and the residents of these neighborhoods. An example of public lands which residents have informally developed into recreational areas is the activities that are taking place within the Narbonne right-of-way (this right-of-way was intended to be used by the County in realignment of Palos Verdes Drive East) adjacent to Sunnyside Ridge Road. Residents have informally used this right-of-way to develop a play area and to exercise horses. There are also other areas in private ownership which have been used by residents and would be considered. It is hoped that this study would aid individual neighborhoods to reflect their recreational desires. Implementation might involve some public funds, or it might be through private effort.~~

7.9 Parks Master Plan

Adopted on October 6, 2015, the Parks Master Plan updated the previous 1989 Parks Master Plan, following almost two years of planning and extensive public outreach. The Parks Master Plan will function as a living document to help guide and respond to changes in the City's future park, open space, and recreational needs.

7.10 Open Space for Military Support

The California Military Land Use Compatibility Analyst does not identify military operations (e.g. military bases, installations, etc.) or military aviation routes and airspace over the City. However, the United States Coast Guard is located next to the Point Vicente Interpretive Center. The U.S. Coast Guard often utilize the coastal cliffs, Point Vicente Interpretative Center, and City Hall to conduct training exercises.

7.11 Open Space for Tribal Resources

There are no public land containing any Native American cemeteries, places of worship, religious or ceremonial sites, or sacred shrines in the City.

~~*Agricultural Activity*~~

~~Once the most predominant land activity on the Peninsula, agricultural has now been diminished to only a few remaining areas. A majority of these agricultural areas lies within Rancho Palos Verdes' jurisdiction, where there is strong support for its preservation as open space for the managed production of resources. The primary aim of the Plan, in relationship to agriculture, is to evaluate existing agricultural and determine which of these areas is both compatible with its future surrounding and of a nature that makes it economically feasible to maintain.~~

~~Existing agriculture is of three main types: grain, special crops, and flower farming. Grain farming requires large sites in order to remain economically feasible, while specialty crops and flower farming are of a higher economic yield, which allow them to exist on smaller sites.~~

~~Agricultural Activity Areas to be Preserved. Two major areas are incorporated into the Plan; these are of a nature compatible to adjacent surroundings and of a scale which would allow them to produce profitable crops.~~

~~A portion of the Portuguese Bend slide area is the first major agricultural area. Existing agricultural practices include primarily specialty crops. This activity was considered to be one of the few compatible uses for the slide~~

area. In order for agriculture to be completely compatible in this area, crops which require little or no water must be grown. This is to eliminate as much water intrusion as possible on the active slide area, because of water's tendency to act as a lubricating medium.

The second area is not designated on the Land Use Plan but consists of two flower farming sites located on opposite sides of Palos Verdes Drive South near Marineland. Both of the flower farms are located on leased portions of sites which are used for other activities. It is felt that both areas could be maintained as visual accents on these sites without placing a major limitation on the uses which share the sites.

All agricultural activities not indicated above should continue until surrounding areas have developed to their capacities. Only when these agricultural areas can no longer maintain reasonable productivity should they be converted to uses indicated by the Plan.

Agriculturally Related Commercial Activity. There presently exist several produce and flower stands along Palos Verdes Drive South. A specific policy has been incorporated into the General Plan which is directed at upgrading and preserving this activity in concept due to its cultural significance.

Policies. It is the policy of the City to:

1. Encourage implementation techniques for preservation of agricultural activities.
2. Assist in the protection or conservation of agricultural sites.
3. Encourage continued operation of existing produce and flower stands, not necessarily in present locations and structural types, but in concept, related to local agricultural use.
4. Preserve flower farming wherever possible, in order to provide aesthetic appeal and visual accent.

DRAFT ENVIRONMENTAL JUSTICE ~~SOCIAL SERVICES~~
comparison to current General Plan Noise Element
4/26/2018 version

Note: This document compares the proposed Draft Environmental Justice Element with the current General Plan Social Services Element. It should be noted that the discussion related to Housing is new text, based on the adopted 2014 Housing Element, which is an independent and separate document from the General Plan document. Changes are shown as follows: underline text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

VI Environmental Justice Element

~~Social services provided or coordinated at the local level by city governments have been a recent and growing concern of local government officials. Traditionally, city governments have assumed the responsibility for the planning, coordinating, and deliver of services that meet primarily the physical needs of the community, such as police protection and roads. While these physical concerns are mirrored in the General Plan requirements now in effect, human or social concerns have been largely de-emphasized. Needless to say, human needs are complex, and their identification and fulfillment remain difficult due to the many and varied factors interacting in today's society. In order to address the human needs of our community and ensure that these needs are considered, human factors must be integrated into the comprehensive planning and implementation processes.~~

Environmental Justice as defined by Government Code section 6540.12(e) means, "The fair treatment of people of all races, cultures, and incomes with respect to development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Environmental justice laws have been established to ensure that all people have equal protection from environmental hazards where they live, work and play, as well as to ensure that all people have equal ability to participate in the decision-making process regarding environmental regulations.

~~This Element~~ seeks to address environmental justice through the development of a comprehensive set of goals and policies, consistent with State requirements, to encourage greater public participation and reduce environmental hazards to target populations in the City. This Element serves as a blue-print for the physical development of the City and is intended to assist elected and appointed officials in the decision-making process. This Element also provides direction to City Staff, developers and the general public to ensure that environmental justice factors be considered during the planning and development process

Background

The Environmental Justice movement existed for several decades at a grass roots, city, county, state and federal level before gaining institutional support by the Clinton Administration with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations" in 1994.

~~State legislation adopted~~ in 2016, Senate Bill 1000, requires cities and counties that have disadvantaged communities to incorporate environmental justice policies into their general plan,

either in a separate environmental justice element or by integrating related goals, policies and objectives throughout other elements.

An Environmental Justice Element is required to identify a disadvantaged community within the area covered by the plan. A disadvantaged community means, "An area identified by the California Environmental Protection Agency pursuant to Section 39711 of the Health and Safety Code or an area that is a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposures, or environmental degradation" (Gov. Code Section 65302(h)(4)(A)). Section 39711 of the Health and Safety Code further identifies a disadvantaged community as areas with sensitive populations.

The General Plan of the City of Rancho Palos Verdes has historically included goals and policies that seek to address environmental justice concerns in the community, including greater accessibility to parks and recreational activities, as well as the promotion of energy efficiency in residential design and public and commercial facilities.

~~Social Services~~ 1 Goals

1. **Promote public input and participation in the decision making process by all members of the community.**
2. **Protect the environment in order to reduce environmental hazards in the community.**
3. **Promote the efficient and equitable use of public facilities by all members of the community.**
4. **Promote healthy and affordable housing opportunities for all segments of the community.**
5. **Promote healthy food access and physical activities for all segments of the community.**
6. **Prioritize improvements and programs in the City to better address the needs of its senior population.**
7. ~~It is the goal of the City to preserve and protect its cultural resources and to promote programs to meet the social needs of its citizens.~~

2 Policies

Public Input and Participation

1. ~~Encourage a framework for interaction among the four cities of the Peninsula and its surrounding communities to solve common problems.~~ **Support mechanisms for participation with area wide districts and jurisdictions for the betterment of the residents of the City of Rancho Palos Verdes.** (moved from Goals)
2. Encourage ~~programs for~~ **and provide facilities and resources for** recreation**al**, social ~~services~~, ~~and~~ cultural, and educational ~~achievement~~ **programs for its residences**. (moved from Goals)
3. ~~Encourage programs for~~ **Involve its residents in** community ~~involvement, participation, and action to minimize the send of isolation and powerlessness felt by many individuals in the community~~ and civic activities. (moved from Goals)
4. **Seek input from residents and address their concerns during the planning process.**
5. **Aid in matching the facility needs of the community with existing and future facility resources throughout the City.** (moved from Goals)

6. **Utilize culturally and linguistically inclusive approaches to public participation and involvement.**
7. ~~Encourage~~ **Continue** the use of town meetings and forums ~~within neighborhoods and city-wide to address a variety of issues and subjects of community interest~~ to obtain public input. ~~Facilities for such~~ **Encourage community** events ~~should be provided where possible, and annual city-wide events should be encouraged~~.
8. Develop ~~an on-going centralized civic~~ information services **designed to reach as many residents as practical, which lists organizations,** ~~of~~ events, issues and services ~~for the citizens~~ **available to City residents**. ~~The City should encourage, through this service, the use of existing civic and private assistance organizations.~~
9. **Encourage the development of homeowner associations and other community groups as a vehicle for increased participation in government.**
10. ~~Encourage the development and expansion of meaningful geographic groupings and sub-community committees to act as a vehicle for improved communications with citizens, the City staff and the City Council. Individuals should be encouraged to become involved in the community through interaction, communication and participation.~~
11. ~~Act to enhance mobility within the neighborhood, mobility within the City, and on the Peninsula as a whole. Dependence solely upon private automobile is not satisfactory~~.
12. ~~Encourage all groups within the City to establish representation on the subcommunity committees and other civic action groups. Efforts should be made to ensure that no programs are developed that will isolate any group, and particular emphasis should be given to those who suffer from isolation due to age, health, disability and race.~~

Environmental and Health Risks

13. **Implement policies and programs identified in the City's Emissions Reduction Action Plan (ERAP) in order to improve air quality in the City.**
14. **Promote transit improvements or facilities that are powered by electricity and alternative fuels.**

Public Facilities

15. **Plan for a Civic Center.**
16. **Provide leadership in solving the need for community meetings, cultural events, and recreational facilities.**
17. **Encourage the building of meeting facilities by private or nonprofit groups. Existing and new businesses, churches, utilities, etc., should be encouraged to allow some use of their facilities by community groups.**
18. **Design recreational facilities including parks and trails for the use of older adults in the City with limited mobility.**

19. ~~Encourage the development of job opportunities for youth within the City. The City should actively work toward providing meaningful opportunities for older citizens so that they will choose to remain in the community.~~

Safe and Sanitary Homes

20. Promote the incorporation of universal design[1] concepts in new construction and rehabilitation projects, including but not limited to, general internal space planning consideration to accommodate wheelchair bound individuals.

21. Prioritize enforcement activities of residential structures with known health hazards.

22. Promote efforts to repair, improve, and rehabilitate substandard housing.

Healthy Food Access and Physical Activity

23. ~~Develop~~ **Create** recreational ~~programs that will address the recreational needs of~~ **opportunities for** all ~~citizens~~ **City residents**, ~~both individually and in groups. This should include the development of a set of criteria which will enable the City to project and evaluate the implications of its decisions as to the long range effectiveness of these programs.~~
24. ~~Identify, in partnership with other agencies and organizations the major human services areas and the respective roles of each agency in planning, administration and delivery of those services.~~
25. **Be an advocate for the efficient delivery of services to its residents.** ~~Establish, in partnership with other agencies and organizations, procedures for the better coordination of human services delivery. Specifically, the City should assume responsibility for acting as a clearing house for up to date information on the current state of human services.~~
26. ~~Develop, in partnership with other agencies and organizations, mechanisms for the better coordination of human service planning efforts. Specifically, the City should assume responsibility for acting as a clearing house for information exchange relevant to human service planning activities throughout the community.~~
27. ~~Encourage the South Bay, Harbor, and Peninsula cities to share in the identification of~~ **Work with neighboring jurisdictions and organizations to identify and address** common ~~problems and work toward the development of solutions and services of benefit to~~ each issues. This should include the encouragement of dialogue between the professional City ~~employees~~ ~~of~~ the four cities **neighboring jurisdictions and organizations**.
28. **Continue the implementation of community education and programming related to healthy living and physical activity.**

---

[1] Universal design refers to the concept of designing environments to be used by all people, to the greatest extent possible, without the need for adaption or specialized design.

29. **25 Continue to provide a variety of active and passive parks and recreational activities accessible to all residents.**

30. **26 Promote the use of alternate modes of transportation including biking and walking.**

Improvements and Programs

31. ~~Place special emphasis on the~~ **Recognize the residents'** cultural, educational, and recreational needs ~~of individuals, families, and the community~~ and encourage ~~the expansion of existing~~ programs in these areas.
32. **Work with neighboring cities, agencies and organizations to identify, assist with provide and/or to promote services for the large population of older adults within the City.**
33. ~~Bring the residents' needs into the City's planning process and attempt to ensure that citizens and their~~ **Establish City committees to utilize resident** ~~skills are utilized~~ **to benefit the community**.
34. ~~Take leadership in the formation of a four city Peninsula commission dedicated to the expansion and strengthening of common Peninsula city bonds and which should further serve to develop an attitude of mutual respect among communities.~~

~~**Social and Cultural Development**~~

~~Responsibility for the planning and delivery of human services in the past had has largely fallen on non-local levels of government and a variety of private agencies. This has frequently resulted in considerable duplication of services, program fragmentation, and frequent waste of already limited resources. City government, in cooperation with other levels of government and with private agencies, will need to improve the assessment of local needs and the coordination of service delivery. The need for coordination is imperative. The League of California Cities, In October, 1973, adopted a resolution as part of their Action Plan for social responsibilities of cities, encouraging cities to begin to develop social service elements as part of their General Plan.~~

> ~~*"We all recognize, whether it was our desire or not, that all social needs of our citizens are increasingly being laid on our doorstep for solution and resolution…. Cities for years have been in the social field with leisure activities, youth citizens, etc. Social services is not a new activity for cities, This area of service, however, is becoming more complex and fragmented…. This being the case each city should be aware of plans relating to human services and the services that are being delivered by other agencies, public and private, to its citizens. The city should establish a means or procedure for making an input into the plans of these other agencies and for monitoring the services which are provided…. Each city should prepare and adopt a social services element to its general plan…."*~~

~~The City of Rancho Palos Verdes is involved in the development of the community's human resources assets. The City's interest in involvement is currently reflected in the establishment of a community services position to facilitate coordination and planning in the social service area~~

Administration: Overseeing the management of the City's parks system and various community programs, the Administration handles the coordination of recreational facilities, volunteers, and organizes City events for the community. The Department's Administration Division consists of the Director of Recreation and Parks who over sees a small staff of City employees.

Recreational Facilities: As described in the Conservation and Open Space Element, the City has multiple active and passive recreational sites which provide the community not only with outdoor areas for picnics and hiking, but also various other amenities for the public. The Recreation and Parks Department handles the rental and usage of these facilities, providing the community with meeting facilities for private and non-profit groups, as well as playing fields for multiple uses by various recreational groups from the Peninsula and surrounding areas.

3 Setting

Senior Services

The population of those 60 years and older in Rancho Palos Verdes **the City** has grown to almost 30% of the total City population. As such, the City acknowledges and works to support the needs of this large segment of its population. In addition to coordinating for recreational classes for seniors, the City helps in assisting seniors through organizations such as **the** Peninsula Seniors.

Peninsula Seniors:

Established in 1982 with help from the League of Women Voters, Peninsula Seniors is a non-profit membership organization that caters to the needs and interests to the senior-citizen community. Having **With more than** over 2,000 members, consisting of Rancho Palos Verdes residents as well as those from surrounding cities, Peninsula Seniors provides a variety of programs **for Rancho Palos Verdes residents and those from surrounding cities** and services designed to help seniors.

In addition to Peninsula Seniors, other services available in the area include:

- H.E.L.P. **(**Healthcare and Elder Law Programs**);**
- Peninsula Transit Authority's Dial-a-Ride Program**; and**
- South Bay Senior Services

The City works with each of these organizations to assist in addressing concerns for this specific demographic. Due to the activity and involved participation of the City's **older adult population,** senior citizens throughout the community, the City is continuously receiving input and suggestions for new or improved services to be provided, and the City works with the members of the community to **help in areas that it is able** help in any way possible.

To further ensure that the City continues to provide and/or make available specific and appropriate services addressing this portion of the City's population, this element sets forth goals and policies to

promote public input and participation, reduce unique environmental and health risks, and prioritize improvements and programs amongst this segment of the City's population.

~~To reaffirm the City's commitment and concern for the human needs of its citizens, a social element is proposed to more clearly define roles and responsibility and to provide guidelines for the future in the planning and coordination of social services. Unlike other elements of the General Plan that deal with specific areas of concern, this Social Element addresses the broad concerns of human problems and the effective use of available resources in meeting those problems. Because of this, a dynamic process must be built. This process must allow the community maximum flexibility to adapt and change. Therefore, this document reflects the process as the beginning, rather than a final product.~~

~~In order to develop goals for community action and policies for implementation an assessment of existing community needs was necessary. There are various methods available for the identification and measurement of community social needs. Several of the more common approaches used by cities include the collection of statistical data, direct observation of conditions reflecting the need and through citizen participation.~~

~~The most widely used – yet the most inadequate approach, if used alone – is the collection of statistical data. The use of statistical data in defining parameters for social needs presented a special problem in Rancho Palos Verdes due to the inadequacies of the 1970 census information. Because the City was not incorporated during the period of the 1970 census and boundaries for census tracts are not contiguous with present City boundaries, the data includes extra city population information. This results in skewed results and misinterpretations which invalidate broad generalizations.~~

~~The needs assessment technique found most effective for Rancho Palos Verdes consisted of interviewing a significant cross section of local community resource persons able to identify major human needs. This select group was most effective in generating reliable information for delineating the broad spectrum of human needs. As more detailed and reliable data is generated it will be used to update and modify the initial needs assessment information.~~

4 Public Input and Participation

Community input and participation is a fundamental part of the decision making process, as for example, the public can voice their concerns or support of a proposed development project. Public input and participation is particularly important with respect to environmental justice because it allows communities that have often not been included in the planning process to be engaged to improve their community. Participating in the public decision making process is important, but as a result of various factors such as cultural and linguistic barriers or lack of information, many members of the community, including the senior population in the City do not participate in the process. The City has been posting various notices, such as voter information, in other languages in an effort to encourage participation. The City issues public notification for various projects under

consideration by the City in the local newspaper, on the City's website, to listserv subscribers, mailings, and social media platforms.

5 Environmental and Health Risks

Promotion of Public Facilities

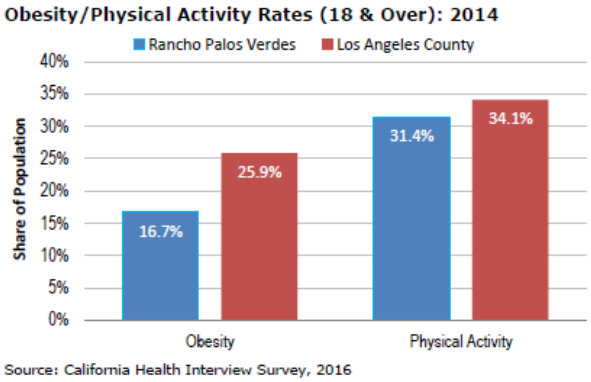
As described in the Conservation and Open Space Element, the City has multiple active and passive recreational sites that provide the community with usable outdoor areas for picnics and hiking, and also various other amenities. The Recreation and Parks Department handles the rental and usage of these facilities, providing the community with meeting facilities for private and nonprofit groups, as well as playing fields for multiple uses by various recreational groups from the Palos Verdes Peninsula and surrounding areas.

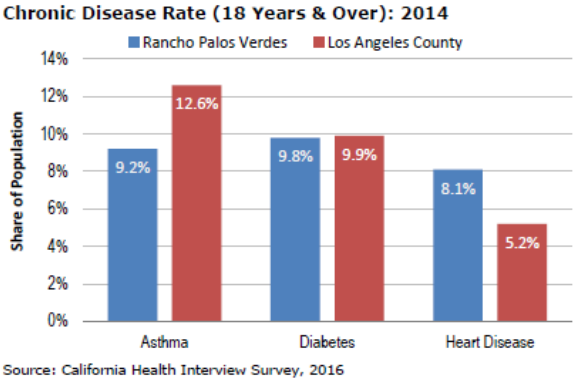
Promotion of Safe and Sanitary Homes

The quality of housing available impacts the health of residents and community members. Factors such as indoor air quality, mold and moisture, pests, safe drinking water availability, lead and second-hand smoke affect the safety and health of residents' homes. Housing policies can direct housing quality by mitigating or preventing health impacts. The City's Housing Element addresses current and future housing needs in the community, as it relates to affordability, construction, conservation, and preservation.

Promotion of Healthy Food Access and Physical Activity

Based on public health data, the City has lower rates of obesity, asthma, and diabetes as compared to Los Angeles County. However, the City has higher rates of heart disease and lower rates of physical activity than the County. The promotion of healthy food access and physical activities serve as a means to further improve public health in the community, including that of its senior population.





6 Improvements and Programs

Special Events: Each year, the City hosts three different events, which are coordinated by the Recreation and Parks Department: Whale of a Day; July 4th Independence Day Celebration; and Shakespeare by the Sea. Each of these three free events are located at City parks and provide opportunities for social, recreational, cultural and educational interactions between residents as well as people from around the Peninsula and South Bay areas.

Point Vicente Interpretive Center: This beautiful park and facility, located adjacent to the Pt. Vicente Lighthouse, offers recreational and educational opportunities to the public. In addition to a Museum presenting the unique features and history of the Palos Verdes Peninsula, there is also meeting rooms for private parties and meetings, a gift shop, areas for whale watching and an outdoor amphitheatre. The City trains volunteers (docents) to lead tours inside the Center, with the Los Serenos de Point Vicente being the City's volunteer docent organization.

Reach Program: Administered by the City's Recreation and Parks Department, Reach is designed to serve the social and recreational needs of youth and young adults with developmental disabilities in Palos Verdes and the South Bay.

Dog Parks: The City has two separate dog parks in the City: Point Vicente Park/Civic Center and Eastview Park. Both parks are half-acre in size, has separate small and large dog areas, water faucets and bowls for dogs, restroom and hand wash station, and are ADA accessible.

DRAFT FISCAL ELEMENT

comparison to current General Plan Fiscal Element

4/26/2018 version

Note: This document compares the proposed Draft Fiscal Element with the current General Plan Fiscal Element. Changes are shown as follows: **bold underline** text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

VII FISCAL ELEMENT

~~The General Plan recommends, in Goal and Policy Statements, the proposed future of the City. The Plan does not designate expenditures nor does it commit the City to a specific course of action. It provides, instead, a proposed future direction for the City to pursue.~~

~~Plan implementation decisions as they are made will then affect the City's fiscal pattern. The rate of implementation of the objectives of the Plan will be influenced by the following factors:~~

~~Available regulatory techniques;~~
~~Available revenues and revenue sources;~~
~~Ability to finance ongoing expenses associated with implementation;~~
~~Variables beyond the City's control.~~

~~There are different approaches available to achieve each Plan policy or objective. The strategies are discussed under two headings: direct expenditures and regulatory.~~

~~A number of possible options exist under the heading "direct expenditure." The City has much flexibility in determining when costs will be incurred, by whom, and whether as public or private costs. The impacts of expenditure strategies can differ markedly, depending on the approach to financing chosen by the City.~~

~~Possible regulatory strategies include the use of traditional land use control techniques such as zoning, subdivision regulations, and specific plans. Newer techniques such as control zones and development rights transfer are additional possibilities.~~

~~Regulatory and expenditure strategies are closely interrelated. Direct City expenditure may not be required, however, there are indirect costs associated with regulatory approaches. Furthermore, the expense related to some regulatory approaches is transferred directly to the homeowner, either as higher initial purchase price or in the form of costs of compliance.~~

~~For each plan objective, the examination of implementation alternatives should include the following questions:~~

~~Can the expenditure be justified as a city expenditure? If so, from what fund source (general fund, capital improvement fund) and over what time period?~~

- ~~Are there outside sources of pubic funding available? (e.g., county, state, federal).~~
- ~~Is it appropriate that the expenditures be financed privately or through small-area financing entities such as special assessment districts?~~
- ~~Can the objective be achieved through regulation or the provision of incentives?~~
- ~~At any one point in time there are different methods available for achievement of a given objective.~~

~~The availability and feasibility of implementation strategies will change over time – as Federal and State programs are created and funded, as State law changes the planning powers available to local government, and as changes are made in State and Federal formulas for the financing of local government.~~

~~It is thus unrealistic to assume that the costs of implementation of the Plan can be finally and accurately determined at the outset. It is possible, however, to identify the range of implementation costs. Through careful planning and budgeting on a continuing basis, the City can minimize and redirect the costs of implementation.~~

~~This element of the Plan indicates how different Plan implementation proposals might create either City, other public, or private costs. The cost to the City is determined with reference to the City budget and is expressed most frequently in "tax rate" terms (cents per $100 of assessed valuation). The public cost to the taxpayer is the total tax burden associated with plan implementation, combining city, special district, and, less directly – portions of County, State, and Federal tax payments. The private cost to the taxpayer includes those items associated with Plan implementation which are paid for directly by the individual.~~

Providing City services, maintaining the infrastructure, and implementing various goals and policies of the General Plan depends on the City's ability to prudently manage its revenues and expenditures. The Fiscal Element of the General Plan establishes the policy framework necessary to guide all of the City's short- and long-term fiscal decisions. In addition to identifying policies that City officials will follow in conducting the financial affairs of the City, it serves as a planning document to assist in making fiscal decisions from a comprehensive perspective. It is intended to ensure that the fiscal aspects of policy issues are considered whenever and wherever possible. It does so by establishing clear relationships between City goals and policies and their fiscal needs and impacts.

The City values prudent and responsible fiscal management, as described in the practices throughout this Fiscal Element. Additionally, the availability of funding, and its appropriate use, guides all aspects of City government. Thus, this Element contains the City's financial policies and provides the overall framework upon which all fiscal decisions are made to achieve the goals laid out in each of the General Plan's elements.

In particular, the Fiscal Element:

- Defines and describes the City's financial planning structure, including its:
  - Financial management structure

- Approach to budgeting
- Financial planning
- Use of reserves
- Capital improvement planning
- Revenue and expenditure management
- Accounting and financial reporting practices
- Purchasing
- Debt management

- Analyzes the City's past and present fiscal health, and identifies its revenue and expenditure base;
- Identifies the long-range goals needed for fiscal sustainability and establishes the action strategies necessary to achieve these goals; and
- Sets forth the foundation for the City's financial policies.

This Element is arranged in several sections designed to take the reader through a logical progression of information that provides the proper context for the establishment of the City's financial goals and policies. Section 3, Financial Management, describes the various financial planning tools of the City, including a discussion of how the General Plan is used as an important financial planning tool. Section 4, Fiscal Health, Revenue, and Expenditure Structure, provides an important discussion on the limitation that California municipalities face in raising revenues and provides an overview of the City's revenue and expenditure structure. Section 5, Fiscal Sustainability, generalizes the City's projected fiscal health and identifies potential fiscal issues in relationship to future development and infrastructure improvements within the City. Section 9.5 outlines policies of the Fiscal Element.

1 Goals

1. ~~It shall be a goal of the City to~~ Hold taxes and assessments ~~the property tax~~ to a minimum and ~~to~~ continually explore and analyze the advantages and disadvantages of alternate or new sources of revenue.
2. ~~It shall be a goal of the City to~~ Explore cooperative financing strategies that might be undertaken in association with others.
3. ~~It shall be a goal of the City to take maximum advantage~~ Consider the use of regulatory legislation and other options to obtain contributions, dedications, reservations (option to purchase) and rights of way (i.e., easements).
4. ~~It shall be a goal of the City to ascertain that all~~ Plan for revenues generated by ~~growth are~~ development to sufficiently ~~to~~ cover ~~the~~ costs related to ~~growth~~ such development.
5. ~~It shall be a goal of the City to~~ Thoroughly evaluate capital ~~acquisition and operating~~ asset expenditures ~~and their impacts before implementation of programs~~ to ensure that available financing is sufficient to meet related ongoing operating expenditures.
6. Maintain a prudent general fund reserve.
7. Consider all available funding sources for City expenditures.
8. Maintain competitive rates for taxes and fees charged for the use of community resources.
9. Adopt a balanced budget.
10. Control the growth of expenditures.

2 Policies

~~It is the policy of the City to:~~

1. Consider the cost effectiveness and community benefits of ~~all~~ new City ~~major~~ services and facilities.
2. Require that wherever appropriate, City ~~special benefit~~ services be paid for by the users in the form of specified fees or taxes.
3. Work toward integration of common services among ~~the four Peninsula cities~~ neighboring jurisdictions, agencies and organizations for improved cost effectiveness and quality of service.
4. Consider the financial impacts of City decisions on other ~~jurisdictions~~ governmental agencies and/or public utilities serving our residents.
5. Encourage State legislative action to provide equitable distribution of tax revenues commensurate with the City's responsibilities.
6. ~~Obtain a fair share of revenues available~~ Seek or accept funds from ~~other~~ government sources ~~with due consideration being given to the impact on local control and~~ only if the obligations ~~incurred~~ of the City caused by accepting such funds do not negate the benefits of receiving those funds.
7. ~~Continually~~ Evaluate the merits of contracting for services versus in-house staffing.
8. Encourage private contributions and donations to the City ~~as alternatives to private funding~~.
9. ~~Asses current~~ Consider administrative and enforcement capabilities and available funding before imposing new regulations to ~~insure that~~ address whether such new regulations can be effectively administered without undue costs.
10. ~~Utilize regulatory methods in a fair and equitable manner to reduce public costs.~~
11. Consider the financial impact of City decisions ~~as they affect costs other than taxes to our~~ on City residents.
12. Finance recurring expenditures from recurring revenues.
13. Consider the cost impacts of approving any new development within the City.
14. Actively pursue energy efficient methods and equipment in existing and future City buildings and spaces, as well as public infrastructure, to help reduce operating costs.

~~*Considerations in Fiscal Analysis*~~

~~There are a number of items which must be taken into consideration when discussing fiscal analysis. This includes background information on variables affecting forecasts, the City's relationship to other taxing entities and the City's present operating profile. A review of these items follows.~~

3 Financial Management

Financial Management Structure: Financial management in the City is supported by a number of City-wide systems and processes that impact most financial decisions. The systems provide a structure that ensures accountability for services provided. Rancho Palos Verdes also maintains a system of internal financial management practices and controls that support sound fiscal stewardship. These include financial planning, accounting and reporting practices, purchasing, and capital planning.

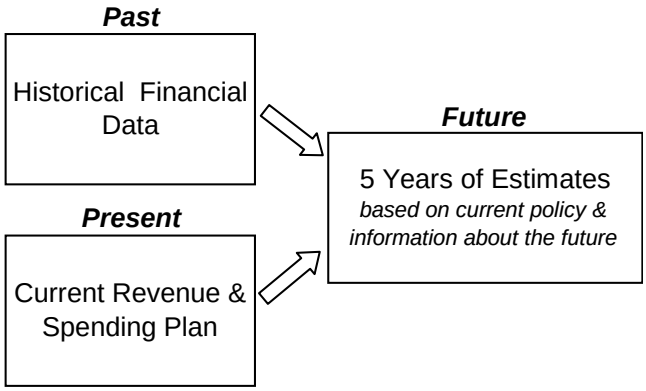
As the City Council has ultimate fiscal responsibility for the City, financial reporting is an important component of financial management. The City Council is provided with monthly and quarterly financial reports, periodic cash position reports, periodic reports of reserve position, and an overview of the comprehensive annual financial report.

Approach to Budgeting: The City's budget is more than just a compilation of revenues and expenditures. It represents a financial and policy implementation plan. The budget establishes a legal operating and capital plan for each fiscal year to ensure compliance in conformance with local and state laws. In addition, it is a communication medium for the City Council, staff, and the public. It encompasses the City's commitment to match the delivery of quality, customer-oriented services to the community with the financial resources available. The City strives to prepare an annual balanced budget. Due to the City's limited ability to raise revenues, careful consideration is given to service expansion or additions. The budget is adopted annually by the City Council.

The City prepares a 5-Year Financial Model as required by City Council policy on an annual basis. The model includes all funds of the City and its component units (successor agency to the redevelopment agency, and improvement authority). The City also develops a 5-Year Capital Improvement Plan (CIP) on an annual basis that allows the programming and planning of capital facilities and improvements. The Model and the CIP help the City Council to develop the annual operating budget by projecting future anticipated revenues and expenditures, and identifying those larger CIP projects that may be funded during the annual operation budget.

Financial Planning: While annual budget review and approval is a sound business practice and is required by the State of California Government Code and the City's Municipal Code, an understanding of the City's long-term financial picture is more important than just looking at a 1-year snapshot. While preparing the 5-Year Financial Model, staff works with all departments to assess expected trends for future expenditures and performs a complete analysis of all revenues based on a set of assumptions. After developing future estimates, fund balances are analyzed to ensure that reserves are maintained and expenditures do not exceed funding sources. Each year, the City Council-appointed Finance Advisory Committee is presented with the draft Model and provides comments prior to the City Council's review at the Budget Workshop. The budget is developed based on estimates consistent with the model.

The Five-Year Financial Model



Use of Reserves: The establishment and management of reserves (sometimes referred to as rainy-day funds, or contingency funds) is a prudent fiscal policy, as well as an important consideration in the evaluation of the City's credit rating. Local governments have experienced much volatility in their financial stability due to the economy, natural disasters, and actions taken by state government, which includes taking revenues from local governments to resolve state budget problems. California cities are at an even greater disadvantage than the rest of the country due to the unique regulations imposed through a strong voter initiative process, and the difficulty to raise property taxes should the need arise. Sound financial management includes the practice and discipline of maintaining adequate reserve funds for known and unknown contingencies. Such contingencies include, but are not limited to, cash flow requirements; economic uncertainties including downturns in the local, state, or national economy; local emergencies and natural disasters; loss of major revenue sources; unanticipated operating or capital expenditures; uninsured losses, tax refunds, future capital projects; unanticipated infrastructure repairs; vehicle and equipment replacement; and scheduled capital asset and infrastructure repair and replacement. The establishment of prudent financial reserve policies is important to ensure the long-term financial health of the City.

The City has a conservative reserve policy that requires that the City maintain a minimum reserve in the General Fund. The General Fund reserve policy threshold is 50% of annual budgeted expenditures. The City also maintains a minimum reserve in the CIP fund for major improvement projects related to roadways, storm drains, parks, buildings, rights-of-way, and the sewer system. In addition to these reserve levels, there are smaller reserves established for several other City funds. Specific reserve information is outlined in a separate City Council policy statement. The City Council can amend the reserve policy at any time.

Capital Improvement Planning: A CIP is a guide for the efficient and effective provision of resources for improving and maintaining public infrastructure and facilities. Programming capital facilities and improvements over time can promote better use of the City's limited financial resources, reduce costs, and assist in the coordination of public and private development. Staff compiles an inventory of projects through a comprehensive review of existing reports, infrastructure plans, community input, and City Council direction. Projects without a funding source are included on an "unfunded" project list as a part of the CIP document. Projects with available funding sources are integrated into the 5-Year Model and presented to the City Council during each annual budget process. The California Government Code Section 65103 & 65401 requires the Planning Commission also reviews the CIP to ensure that all projects are consistent with the goals and policies in the General Plan.

Revenue Management: Since its incorporation in 1973 as a "no-property tax city," the City has long recognized the importance of managing City revenues to maintain and enhance fiscal strength and stability over both the short and long term. A "no-property tax city" is one that prior to the passage of Proposition 13, did not levy a local property tax. Following the passage of Proposition 13, cities that previously had levied a local property tax were allocated a larger share of the 1% property assessment established by Proposition 13. As the City did not levy a local property tax, it was allocated a minimal share (approximately 6%) of the 1% property assessment.

Staff annually assesses revenue trends as part of the City's 5-Year Financial Model. Revenue assumptions are reviewed and revised each fiscal year. Some tax revenues are apportioned by state or county agencies, and some tax revenues are imposed locally (e.g., utility users' tax and transient occupancy tax). Staff coordinates periodic audits of the collection process of locally imposed tax revenues. Staff also manages investment of the City's idle cash and lease arrangements for the use of City property. City staff continually monitors the collection of all revenues to ensure maximum receipt of monies legally due to the City.

Expenditure Management: Once the operating and capital budgets have been prepared and adopted by the City Council, staff is responsible for closely monitoring the expenditures and results to ensure that resources are being used as effectively as possible to maintain desired service levels in compliance with the budget adopted by the City Council.

The City's Municipal Code calls for appropriations to be made by budget program. Any changes in the total appropriation for any given program require City Council approval, while the changes within that program can be approved by the City Manager.

Article XIIIB of the California Constitution, approved by the voters in 1979 as Proposition 4, placed limits on the amount of revenue that can be spent by government entities. The proposition also established a formula for annual calculation of the appropriation limit. Each year the City calculates its appropriations limit, which is adopted by the City Council as part of the budget approval. Historically, the City's revenue budget has been well below the annual appropriation limit.

Accounting and Financial Report Practices: Local and State law requires that the city issue an annual report on its financial position and activity, and that an independent firm of certified public accountants audit the report. The City annually prepares and issues a Comprehensive Annual Financial Report (CAFR). The CAFR includes financial statements, which are presented in conformity with generally accepted accounting principles and audited in accordance with generally accepted auditing standards. While traditionally addressed to the City Council, the annual financial audit is also intended to provide relevant financial information to residents, City staff, creditors, investors, and other concerned readers. The City maintains its financial records in accordance with standards set by the Governmental Accounting Standards Board (GASB) and implements all recommended Board pronouncements.

Purchasing: As a contract city, the City engages in a wide range of contracts to deliver the full range of local government services, and construction and maintenance of City facilities and infrastructure. These include contracts for the acquisition of personal property (supplies, equipment, materials, and goods), public projects (maintenance, landscaping, etc.), and professional services performed by an independent contractor (e.g., engineering and public safety).

The City's ordinance governing bid requirements, purchasing, and contracting procedures is intended to achieve the following objectives:

- Obtain cost-effective results;
- Avoid wasteful practices;
- Achieve a balance between costs and benefits of maximizing quality within available resources;

- Guard against favoritism, fraud, and conflicts of interest; and
- Ensure compliance with applicable state and federal statutes.

Debt Management: The City does not currently carry any debt. However, when planning for capital projects, the City will consider the issuance of debt as a financing mechanism and the City's ability to repay any debt incurred.

4 Fiscal Health, Revenue and Expenditure Structure

Section 4.1, Fiscal Health, provides a brief history of the City's fiscal health since incorporation. Section 4.2, City's Revenue Base, is an overview of the City's revenue structure. Section 4.3, Revenue Overview by Source, provides descriptions of the City's major revenue sources. Section 4.4, Expenditure Structure, provides an overview of the City's major expenditures.

4.1 Fiscal Health

Since the City's incorporation in 1973, the City maintained a conservative approach based on keeping property taxes low and providing necessary services to meet the needs of residents. The City incorporated as a "no property tax city," so this is reflected in the basic level of services provided. Over the years, funding has not been adequate to proactively maintain the City's major infrastructure systems causing the City to be faced with significant costly repairs in recent years. Certain assessment districts have been formed over the years in some areas to assess individual property owners for specific infrastructure repairs. For example, a unique aboveground sewer system was constructed in the Abalone Cove portion of the City's landslide area. Property owners are assessed for the maintenance of the system. In 2005, property owners approved a storm drain user fee, providing a 10-year revenue stream to help pay for improvement of the City's storm drains, which ended in 2016. However, given the age and condition of the infrastructure in the City, the need to repair infrastructure extends beyond what these limited assessments and fees can provide. The City still maintains a conservative approach to managing its infrastructure and strives to seek out any available sources of funding, such as grants or other contributions to pay for infrastructure projects.

City's Revenue Base

The structure of the City's revenue sources has a major influence on the City's ability to maintain and expand services. The structure and source of City revenue are also very important to the City's ability to withstand economic downswings. If possible, it is prudent for a city to have a diversity of revenue sources since each individual revenue source reacts differently to economic conditions.

The two major categories of revenues received by government are taxes and user fees. In 1978, Proposition 13 created a distinction between "general" and "special" taxes. A general tax is any tax imposed for general governmental purposes, while special taxes are collected or earmarked for a specific purpose or program. Restrictions on the establishment, extension, or increase of any tax were also imposed by Proposition 13 and Proposition 218, which was passed later in 1996. In order to levy a new tax or increase an existing tax, local governments must hold an election to obtain voter approval, while fees may be imposed without a public vote. The taxes collected by the City are primarily general taxes that are used to support general governmental purposes. Through Fiscal Year 2016–2017, the

City's major revenues have been property tax, utility user tax, franchise tax, transient occupancy tax, and sales tax.

User fees, in contrast, are charges imposed for discretionary services that benefit a specific segment of the community. Fees are distinguished from taxes in two principal ways. First, the amount of the fee may not exceed the cost of providing the service, while the amount of a tax has no such restriction. Second, those who benefit from the service is charged a fee. In general, user fees are reviewed annually and set by the City Council to recover the full cost of providing a particular service. The City Council may choose to charge a fee for a service that does not recover the cost in order to achieve a specific policy objective. The City engages a consultant approximately every 4 or 5 years to perform a complete analysis of all user fees to ensure that fees are set at appropriate recovery levels. User fees are published in the Annual Fee Schedule.

User fees, in contrast to taxes, are charges imposed for services that benefit a specific segment of the community. User fees are generally set to cover the full cost of providing the service, unless the City Council chooses to charge a lower fee to achieve a specific policy objective.

Protection of the City's property values, including public safety and infrastructure maintenance, will help to ensure the stability of property tax revenue. Commercial development in the City will enhance future revenue, including transient occupancy tax and sales tax. As the City continues to develop proactive programs for infrastructure maintenance, and replacement, additional dedicated revenue sources such as fees and assessments should be considered.

The ways that cities are financed have continued to change since the development of the original Fiscal Element in the General Plan. The passage of Proposition 218 in 1996, which added new procedural steps for the enactment of taxes, assessment, and property-related fees, had a notable impact in this regard. In summary, Proposition 218 requires majority voter approval for general taxes and two-thirds voter approval for special taxes. It also requires majority approval for benefit assessments on real property and imposes certain notice and hearing and voter approval requirements for a fee or charge that is property related.

Several other state legislative actions have occurred that either reduced the City's revenue base or altered its composition. The most significant action was in 2004, when voters passed Proposition 1A, a constitutional amendment to protect local governments from revenue take-away by the state. Proposition 1A was the culmination of a historic agreement between the state and local governments to limit the state's ability to shift city revenue to its General Fund. In addition, Proposition 1A provided a mechanism to the state to declare a fiscal emergency and take a property tax loan from cities equal to 8% of the City's annual property tax revenue. If enacted, such a loan is required to be repaid within 3 years with interest. The state cannot take a property tax loan more than twice in any 10-year period, and may only take the second loan if the first loan has been repaid.

The result of these changes has been that property tax has become the City's single largest General Fund revenue source, while revenues such as the Motor Vehicle License Fee and other state

apportionments have decreased significantly. Due to the significance of property tax to the City, it is important to maintain facilities and provide services that protect the City's property values. Forcasting Variables

The City is faced with the need to know how much it is committed to spend in the future and how it should allocate resources to meet the expected demand for services. The City is attempting to forecast the fiscal impacts associated with implementation of the Plan. Forecasts are generally based upon the previous fiscal pattern of the government, together with presently known factors. Forecasting fiscal impact, however, is fraught with uncertainties and unknowns. Moreover, the further out the projects go the less precise and reliable they become. In most of this analysis it is necessary to assume that present governmental relationships and responsibilities will continue into the future, however, this appears to be a somewhat unrealistic assumption. This following questions illustrate the types of variables over which the City has little control.

- Will City responsibilities remain the same in the future?
- What changes in funding sources will be mandated?
- How will expectations for services change in the future?

Within the last five years, California municipalities have been seriously impacted by legislative actions of other governmental agencies. These actions have either imposed new responsibilities on cities without commensurate funding or have limited city funding options. State involvement in local government affairs can be expected to continue.

The City's portion ($.1820 per $100 assessed valuation) of the combined property tax rate ($13-15.00 per $100 assessed valuation) is a relatively small portion of any individual property owner's total tax burden. The City tax rate is likely to remain low, as a percent of the total, because of legal and policy-dictated constraints.

Taxing entities other than the City may be classified in two categories, based on geographic coverage. Most entities (for example, county government, school, fire, water, flood control and sewer maintenance districts) cover areas larger than the City. Their tax rates and expenditure programs are, to varying degrees, beyond the direct control of the City. On the other hand, sub-districts such as lighting or recreation and park districts may cover only a portion of the City. The implementation of those goals and policies benefiting special groups could lead to increased sub-district activity.

Present Operating Profile of the City

At the present time, the City derives revenues from defined sources, and expends those revenues on a number of programs, facilities and services. The analysis of the costs of plan implementation calls for answers to three related questions:

- What does it cost to run the City now?
- What will it cost to maintain current effective service levels and to fund facility commitments that have already been made – through 1990, comparing present population with that projected in the Plan?

- What will it cost to provide the additional facilities and services proposed in the Plan?

The following description of the City's current revenue and expenditure profile will serve as background for all of these analyses.

The 1974-75 adopted budget provided for total expenditures of approximately $1.7 million and total revenues of approximately $2.4 million. Subsequent paragraphs describe in more detail the sources of revenue and categories of expenditure.

4.3 Revenue Overview by Sources

The City derives revenue from over twenty-five different sources. State subventions such as sales tax, motor vehicle in-lieu taxes, and gasoline tax, are the City's primary revenue source at this time. Total State subventions account for $1,308,900 or roughly 55% of total revenues ($2,381,384).

Unrestricted General Fund Revenue Sources

The General Fund accounts for a variety of unrestricted revenues that may be used for any expenditure of the City. Primarily, General Fund revenue consists of general-purpose taxes. The most significant General Fund revenue sources are described below.

Property Tax: The City's share of property tax is the largest single source of revenue to the General Fund. The Los Angeles County Assessor determines property valuations for all real property within the City. The County levies the base property tax of 1%, equaling $1 per each $100 of assessed valuation (subject to growth limitations of 2% per year). The City's share of the $1 is approximately 6%. (Example: For a home with a $600,000 assessed valuation, the base property tax billed by the County is $6,000 per year, and the City's 6% share is about $360 per year.) A number of other governmental agencies providing services within the City receive the remaining share of the 1% levy, with the majority going to the County and the School Districts.

The City property tax accounts for 13.6% of total revenues. The present City property tax rate is $.1820 per $100 assessed valuation. This accounts for only 1.4% of the total median combined property tax rate of $13.3808. In the past, cities relied on the property tax more heavily than they do today to fund capital improvements and on-going programs. Reliance on the property tax, while appropriate in some cases, is now decreasing, both in California and nationwide. The inequities resulting from over-reliance on property taxation are becoming more generally recognized.

The retail sales tax contributes approximately $116,000 to the City's General Fund revenues. The City receives 1% of the 6% Sales Tax; a percentage fixed by State Law.

Revenue Sharing provided by the federal government on a formula basis is available for ordinary and necessary capital expenditures, as well as parks and recreation. While the future status of the current Revenue Sharing program is unclear, the policy of returning a portion of Federal tax payments to local jurisdictions may be continued in one form or another in the future. The City now receives approximately $144,000 per year from this source.

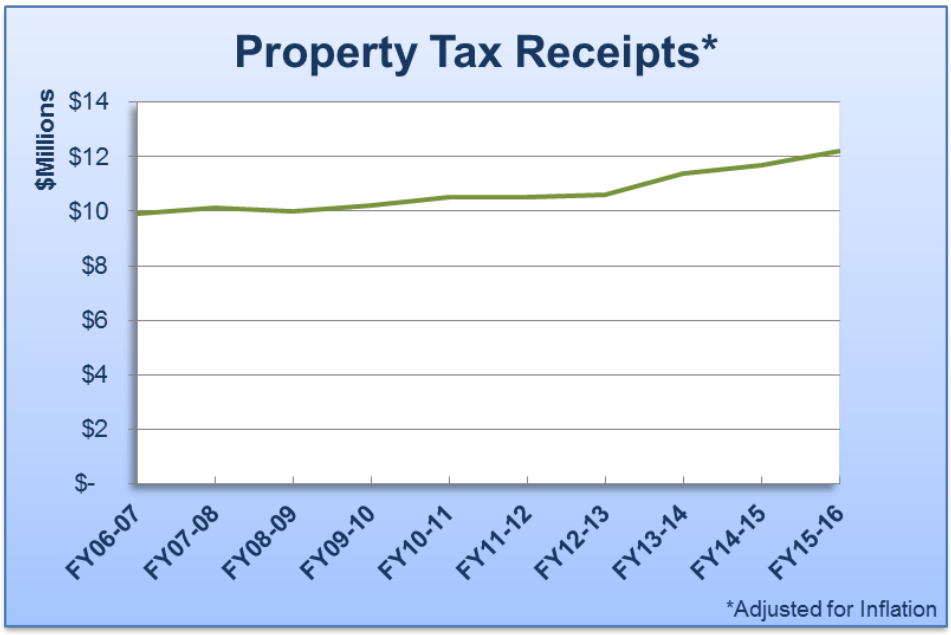
~~Southern California Edison Company provides the City with a certain allocation of work effort each year in lieu of funding for the undergrounding of utilities in accordance with P.U.C. Regulations. The County of Los Angeles also can make a portion of its utility undergrounding funds available to the cities.~~

~~At the present time, State funding for bikeway acquisition and development is available through an earmarking of a portion of the state gas tax. Funds are distributed to applying local jurisdictions through regional councils of government (i.e., SCAG).~~

This has been a stable and steadily increasing source of revenue for the City due to strong property values. Long-term ownership of properties, combined with Proposition 13 limits on increases in assessed valuation, has resulted in assessed values that are much lower than market value. Therefore, any time a property changes ownership and is re-assessed at current market value, the City's property tax revenue increases. This source of revenue is expected to continue to grow in the future.

Property Tax In-Lieu of Vehicle License Fees: Prior to 1999, state residents paid a Vehicle License Fee of 2% of the market value of their respective vehicles to the Department of Motor Vehicles. This Vehicle License Fee funding is passed through to cities and counties throughout California. The state legislature reduced the Vehicle License Fee tax rate from 2% to 0.65% over a period of 3 years ending in 2001. The same legislation also guaranteed cities and counties that the state would "backfill" or pay the difference between the two rates.

The Property Tax In-Lieu of Vehicle License Fee component of the State's Budget eliminated the backfill portion (1.35%) of the Vehicle License Fee payment and replaced it dollar-for-dollar with property tax taken from the Educational Revenue Augmentation Fund. The Property Tax In-Lieu of Vehicle License Fee is permanent and took effect on July 1, 2004. Property Tax In-Lieu of Vehicle License Fee revenue is an allocation of property tax that increases each year in direct correlation to the increase in assessed value of taxable property within the City.



Sales and Use Tax: In accordance with the California Revenue and Taxation Code and the Bradley-Burns Uniform Local Sales and Use Tax Law of 1955, this tax is currently imposed at the rate of 9.00% on the sales price of any taxable transaction in the County (as of October 1, 2014).The State Board of Equalization administers sales and use tax. The City currently receives an apportionment equivalent to 1% of taxable sales. The state, County, and Transportation District share the remaining sales tax collected.

The City is primarily a bedroom community with limited commercial activity. Because of the limited amount of taxable business, economic fluctuations typically do not have a material impact on the General Fund in any given year.

Utility Users Tax: In 1993, the voters of the City approved a tax of 3% on the consumers of natural gas, electricity, water, and services. The tax is collected by each of these utilities as a part of its regular billing procedure and remitted to the City. As utility rates continue to increase in the future, this revenue source is expected to grow accordingly.

Franchise Tax: Under several state statutes, the City imposes franchise tax on natural gas, electric, water, trash, and cable television companies operating in the City for the privilege of using the City rights-of-way. The amounts paid are based on a percentage of gross receipts. This revenue source is also expected to grow in direct correlation to utility rates.

Business License Tax: Title 5 of the Municipal Code requires all entities conducting business within the City to pay annual business license tax, generally based on the gross receipts of the business. The business license tax was enacted solely to raise revenue for municipal purposes, and was not intended for regulation. The business license tax rate increases by the County's Consumer Price Index each year.

Transient Occupancy Tax: The City's transient occupancy tax (TOT) is 10% of rent charged by an operator for the privilege of occupying a hotel. In 2009, the Terranea Resort was completed and was opened to the public, thereby increasing the City's TOT revenue significantly. In the future, this revenue source will fluctuate based on economic conditions.

Golf Tax: In 1993, the golf tax was established as 10% of golf fees charged by the golf course operator.

Community Development Permits: The Community Development Department issues permits for building/remodeling construction activities involving residential, institutional, and commercial structures to ensure compliance with the City's Development Code. Permit fees are charged to recover the cost of providing such services.

Use of Money and Property: This includes earnings from investment of City funds as well as rents received for the use of City property. The City maintains an annual City Council adopted investment policy that restricts investment choices based first on safety, then to liquidity, and finally to yield.

Restricted Revenues

The revenue sources listed below are restricted by law or administrative action for specific purposes. These monies are deposited into other funds of the City. The most significant sources of restricted revenues are listed below.

Transportation: The City receives allocations of various cents-per-gallon transportation taxes that are administrated by the state and county. These revenue allocations are primarily based on population. As these taxes are not percentages of the price of gasoline, the revenue sources remain flat when consumption is consistent from year to year. When consumption decreases in times of conservation, so does the revenue to the City. State-shared transportation revenues may be subject to future potential state-legislated reductions.

Transportation revenues are restricted and can only be used for the construction, improvement, and maintenance of public rights-of-way. Activities financed by the transportation revenues include, but are not limited to, street patching, slurry sealing, street reconstruction, curb/gutter/sidewalk repair, public transit contributions, and street sweeping.

Landscape and Street Lighting: The City has several benefit assessment districts for landscape and street lighting maintenance. These funds may be used for improvements within the defined district in addition to activities including operation, servicing, and maintenance.

Infrastructure Maintenance: The City has assessments related to the improvement and maintenance of specific types of infrastructure (e.g., storm drains, sewers). These fees are typically based on the parcel's proportionate use of the infrastructure system.

In 2005, property owners approved a 30-year storm drain user fee based on each parcel's proportionate use of the City's storm drain system. The storm drain user fee generated approximately $1.2 million of revenue annually, and is used to maintain and repair the City's storm drain system. In 2007, via general election, the voters amended the storm drain user fee to sunset in 10 years which ended in 2016.

Development Impact Mitigation: The City levies several Development Impact Mitigation fees to be used for specific purposes. The City's goal is to ensure that all revenues generated by growth and development are sufficient to cover the costs related to development growth.

4.4 Expenditure Structure

The City provides most of its services through vendor contracts. For example, police and fire services are contracted with Los Angeles County, city attorney services are provided by an outside law firm, and public works are provided by vendors who provide responsive bids. By operating as a contract city, the City is able to obtain competitive pricing and retain a small workforce of employees to manage the City's business. The City has consistently had a low per-capita expenditure ratio when compared with other agencies.

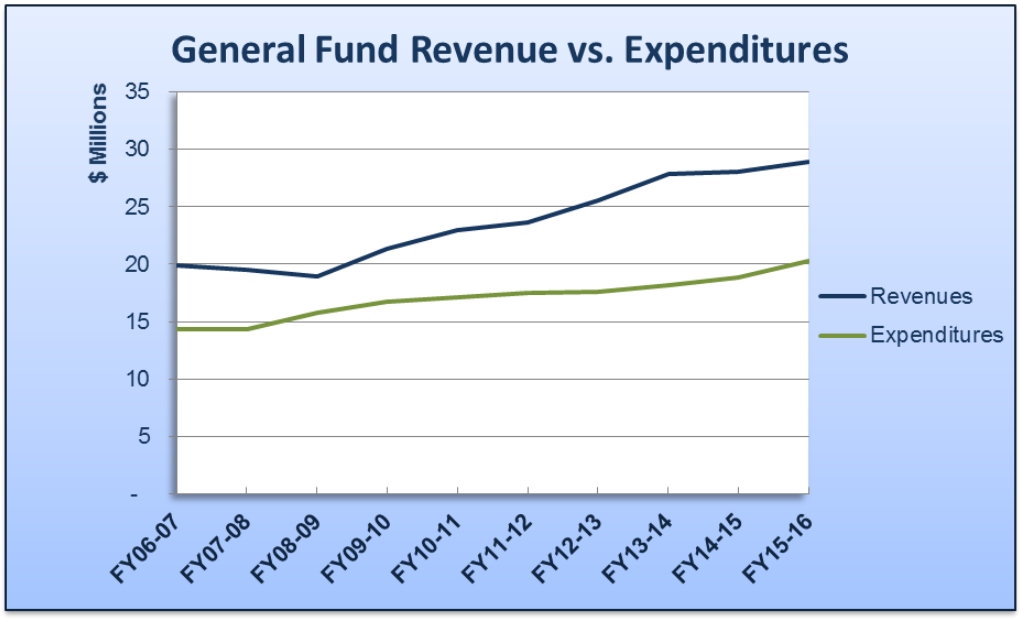
Only the most basic essential services are provided by the City. The county collects a separate share of property tax to provide fire service; however, the City pays for police service out of its General Fund. The City owns and maintains the roadway, sewer, storm drain, and park infrastructure. Utility service is provided by the private sector.

Without a vote of the residents, the City's options to raise additional revenue are very limited. Therefore, additional services and improvements desired by residents must compete with essential expenditures such as public safety and infrastructure for limited resources. Much of the City's infrastructure was built in the 1960s, and is at the end of its useful life. The aging infrastructure must be either repaired or replaced to continue functioning. Additionally, most of the City's buildings are more than 30 years old and are in desperate need of replacement. Furthermore, to protect biological resources, the City has acquired more than 1,400 acres of open space as the Palos Verdes Nature Preserve that must be maintained to standards imposed by state and federal wildlife agencies. As street maintenance expenditures grow, the City's General Fund must provide an increasing subsidy, as transportation revenues discussed previously typically remain flat.

5 Fiscal Sustainability

Resource Management: The City's budget is managed conservatively and expenditures are controlled to every extent possible. Quite often, the only source of funding for infrastructure repairs and maintenance is the excess of General Fund revenues over General Fund expenditures.

With additional TOT and golf tax revenue from the Terranea Resort that began in Fiscal Year 2009–2010, revenues are expected to continue to exceed operating expenditures, thereby providing excess revenues to help maintain the City's infrastructure. However, this trend could be impacted with addition or expansion of services, costs associated with a disaster (e.g., earthquake, slope failure, and fire), or with state legislation that shifts certain revenues away from the City (e.g., vehicle license fees and highway users' tax). Management of the City's resources should always include proactive planning tools such as the CIP, as well as continual monitoring of the state and its potential actions. The City's prudent fiscal policies allow the City to conduct its business in a resource-scarce environment. The City strives to secure outside funding sources (e.g., grants and earmarks) or use new revenue sources (e.g. tax from the newly developed luxury hotel) for necessary infrastructure projects identified in the CIP instead of adding or expanding services. Future projects include roadway stabilization due to stormwater runoff issues, traffic safety improvements, and replacement of aging facilities.



Economic Outlook: Due to the climate of California and the coastal location of the City, property values are likely to remain high into the future. However, future economic development will likely be minimal as the City has very little developable land remaining. Furthermore, the state will continue to look to local government to help solve its financial problems. With the solid and consistent property tax revenue base, proactive planning, and cautious management of the City's resources, the City will be able to continue providing basic services that the community expects.

~~Technical Expenditure Categories.Appendix City budgets are divided into funds which match revenues with expenditures and insure that earmarked funds are spent for the purposes for which they were intended. An over-view of the City's major funds followsis given below:~~

~~Operating General Fund. The General Fund is the City's major fund for receiving and allocating revenues for current operating expenses. Major expenditures include Sheriff's contract, $704,600; General Government, $409,164; and Parks and Recreation, $92,163. In the General Fund alone, 71% of the funds are devoted to contract expenditures. The major revenue source for the General Fund is the Motor Vehicle in Lieu Tax. It accounts for 41.5% of all General Fund revenues.~~

~~Highway and Transportation Fund. The Highway and Transportation Fund provides the major revenues for the construction and maintenance of the City's road and transportation networks. Subventions come from the State on a per capita basis; total estimated revenues are $504,500. Total expenditures in the budget are $324,566, with a reserve being established for major capital expenditures.~~

~~Environmental Excise Tax Fund. The City levies an Environmental Excise Tax of $500 per bedroom with a maximum of $1,000 for all new dwellings. These monies have specifically been earmarked for Park and Recreation purposes. A portion of the accumulated funds has been designated for the purchase of the Highland and Crestmont School Sites. Environmental Excise Tax revenues are directly related to the number of new units added to the City's housing stock. Revenues are generated as development takes~~

place. Expenditures from this on a similar fund would take place gradually over the Plan implementation period, as the need for facilities occurs.

Methodology for Determining Fiscal Analysis

The proposed approach for determining fiscal impact of the General Plan consists of three steps: projection of General Fund balances, analysis of alternative implementation techniques and, finally, determination of fiscal impacts on the City's General Fund. This three-step process is described below.

First, it is necessary to project the City's current General Fund revenues and expenditures to 1990, the assumed completion of the Plan implementation period. This will permit us to determine whether the City will have surpluses available from the General Fund to finance implementation of Plan proposals, or whether present operating commitments, when projected at current service levels, create potential deficits. If General Fund revenues are not sufficient to cover expenditures, projected deficits are presented in the form of equivalent property tax rates (although other revenue sources may be available).

In order to make these projections, it is necessary that certain assumptions be made to control the variables. These assumptions are:

- The effective levels of service provided will remain the same to 1990.
- All expenditures, costs and revenues are projected in 1974-75 dollars.
- Inflation is not considered for either revenues or expenditures. It is assumed that inflation will affect revenues and expenditures equally over the projection period.
- City responsibilities and revenue sources will remain the same to 1990.
- Assessed valuation is assumed to increase from a 1974-75 level of $178,750,000 to a projected 1990 General Plan level of $232,637,475, evenly over the 15-year period.

When the operating fund base has been established and surpluses or deficits are determined, the City can then examine funding and regulatory methods for implementation of the General Plan. These techniques and approaches are described and discussed in the remainder of this element.

The third part of the analysis involves assessment of the impact of any likely public expenditures on the City's General Fund. All implementation decisions, whether involving public financing or regulation, will create on-going costs of various kinds (acquisition, development, maintenance, operation).

Present Services and Facilities – Impacts

This section presents estimates of the probable costs of continuing to operate the City at present service levels through the year 1990. The estimates incorporate the assumptions previously outlined. These expenditure levels represent the commitment of resources required to operate and maintain the City, even before implementation of added programs and facilities called for in the General Plan. (For discussion of the fiscal impact of these added items see the following section of this element). These funds are not assumed to be available for the added facilities and services described in that section. Differences between these estimates and those prepared earlier in the Development Alternatives Report are also described in Alternatives Considered.

For comparison purposes only, a "base" and "General Plan" population, dwelling unit and assessed valuation figures were chosen. The Base assumes no additional units between now and 1990. The "General Plan" range assumes an additional 4750 dwelling units. The base and the General Plan range is as follows:

	Base	General Plan Range
Population	41,700	50,275
Dwelling Units	11,600	14,128
Assessed Value ($000)	$178,620	$232,637

The Plan cannot exactly indicate ultimate numbers of people or dwelling units. There will always be some variability with the numbers stated here. Thus, the assessed valuation figures for the base and General Plan range have been used to determine "likely tax rate on $100,000 home" in the examples used in previous sections.

As closer examination of the comparison tables in following sections will indicate, cost differences are more often caused by differences in service level (active vs. passive recreation area; level of sheriff's contracted service) than by differences in population or dwelling unit count.

The first subject of analysis is General Fund revenues and expenditures. The following outlines the General Fund revenues anticipated to be available at the final year of the projection period (1990).

This table illustrates the relatively small deficits that might be experienced in the Fund during the Plan implementation period. Then deficits are presented in terms of equivalent property tax increases of $.022 to .$166 per $100 of assessed valuation – alternatively stated, a resulting tax increase of between $5.50 and $41.50 on a $100,000 home. This does not imply by use of "added tax cost on $100,000 home" for purposes of illustration, that such a price is the mean, or desired mean, City house price. The concept of tax increase is more readily understood in the perspective of "dollars added to a tax bill," than in terms of "cents per $100 of assessed valuation." Those with homes worth more or less than $100,000 can easily ratio up or down from that dollar figure.

Capital expenditures to which the City is currently committed are analyzed next. As noted in the introductory description of the Highway and Transportation Fund, separate state taxes, such as gasoline tax, are returned to cities to finance construction of streets. While the developer is responsible for residential streets, major arterials are the City's responsibility. The following table summarizes the City's very healthy posture in street construction and maintenance.

Maintenance, although a continuing cost much like the general fund operating costs, is treated here because the pertinent tax revenues are specifically earmarked for street purposes. The projections assume that all construction identified as being required to support the 1990 City population is completed by 1990. The City has the option to delay construction programs, thereby avoiding even the slight deficit indicated in the base. In conclusion, it appears that sufficient revenues will exist to finance

existing service and facility commitments during the next fifteen years. The following sections analyze alternate means of financing added facilities and service proposed in the General Plan.

The Goals Report and other sections of the General Plan identify an array of amenities, facilities, and services desired by Rancho Palos Verdes' citizens. The previous section described possible impacts based on the current level of service and facility commitment. In order to fully appreciate the cost impact of additional amenities, facilities, and services, a review of possibilities is in order. In each expenditure category discussed below, the range of per unit cost of acquisition, development and maintenance is addressed, followed by typical examples.

Regional Parks

The following regional parks are located within Rancho Palos Verdes:

The City appears to have at least its fair share of County, region-serving park facilities. Even if the City population grows to 60,000, this amount of acreage provides 8 acres per 1000 persons – well above federal guidelines, of six acres per 1000 population. No direct City expenditures occur from the presence of these parks in the City. Indirect related costs (traffic control, road maintenance) and benefits (retail purchases) exist, but cannot be accurately estimated.

Upon incorporation, the City assumed the responsibility for Rancho Palos Verdes Park. Since that time, the City has initiated steps to purchase two surplus school sites, Crestmont and Highland. The City is also actively pursuing the acquisition of the NIKE site, of which about 16.8 acres will probably be used by various jurisdictions for civic purposes. The remaining 80.2 acres will probably be retained as passive parkland.

Proposed Added Services and Facilities Impacts

For purposes of cost analysis, maintenance expenditures for the already-developed Rancho Palos Verdes Park are included in a previous table. Development and maintenance costs of the remaining acres are presented in the section. Costs are summarized in the following table.

Current plans for Highland are for minimal passive development estimated at about $5,000 per acre and annual maintenance at $2,000 per acre. Since it is estimated that a significant portion of the development costs of the Crestmont site will be borne by the using groups, the costs to the City for this active park are estimated to be equivalent to those for a passive park. For the same reasons, maintenance costs to the City are also projected at $2,000 per acre per year. The Nike Site is presently planned for passive open space, which would require minimal maintenance, such as weed control, at $25 per acre.

The following table illustrates the differences in total cost between active and passive park area, on a per acre basis. These are assumed costs for comparison purposes only. Even if acquisition cost per acre is the same, differences in development and maintenance cost combine to bring about a distinct difference in annual costs to the taxpayer for the two types of park. Passive park area is less expensive to develop, ($5000 per acre); it is also less expensive to maintain ($2000 per acre). The combined cost saving per acre translates into significant saving to the taxpayer, on either a tax rate or annual tax payment basis.

Table 17 shows the levels of savings that can be achieved if acquisition expense can be reduced through use of regulation such as Quimby Act, donation, or private funding.

Open Space

It is expected that regulation will permit only low intensity use of natural land areas – those areas with high sloping terrain, landslide hazard, etc. If acquisition for public open space is desired and expenditure is required, the cost per acre for vacant land is estimated to be far lower than the cost of more readily-developable land. Maintenance expenditure for this open space land, will be low (on the order of $25.00 per acre per year – weed control, etc.) unless facilities are added.

Social Service Facilities

The General Plan recognizes the need for indoor and outdoor facilities for meetings and events of the many social, service, and cultural organizations. Construction of a large community meeting facility would involve a capital expenditure of between $200,000-$500,000. Some of this cost might be shared by the other cities. However, in any event, the major portion of this expense may have to be borne by the City. Maintenance costs cannot be estimated at this time, but are likely to be significant. User charges can partially offset this cost.

The feasibility of using building space now available on the NIKE site for meeting rooms and club rooms is a possibility. The capital costs of rehabilitation could be substantially less than the cost of a new facility. Several smaller meeting rooms can be provided for less than $10,000 each. Again, these facilities can be financed in whole or in part by the users.

The items above represent the most significant categories of added cost resulting from plan implementation. Other items proposed in the Plan, but not costed in detail in this element, include the following:

Shoreline Bluff

Although preservation may be accomplished through regulation, public use would require dedication or expenditure. Assuming the extreme case, of expenditure, and assuming a strip 100 feet wide, inland of the mean high tide line, could provide a strip about 50 feet wide along the bluff top. Such a strip would encompass about 100 acres. Improvements such as access, bikeways, restrooms are estimated to cost about $100,000 per mile. The following table identifies the probable impact.

Bikeways

If Bikeways are assumed to be provided on all select streets, this results in about 25 miles of bikeways. Federal funds are available on a formula basis. Assuming $4.50 per capita for 15 years would provide anywhere from $180,000 to $248,000. This allows from $7,200 to $9,920 per mile for acquisition and construction, therefore no tax is necessary. Maintenance would be a tax burden, however, insufficient data is available to make realistic estimates.

Civic Center

A future Civic Center is possible capital improvement on a portion of the NIKE site. Two possibilities are a new City Hall and a community center. Such facilities are projected to cost about $900,000. The

probable tax rate range for a phased 15 year development is about $.021 to $.033 per hundred dollars assessed value. This represents from $5.25 to $8.25 per year for a $100,000 home. Again maintenance has not been included but would be an ongoing cost.

Other Amenities

The Goals Statements identify many other desirable amenities. They include archeological preservation, a trails system, roadside and median strip beautification, public restrooms at scenic vistas and stables. In the future other amenities will be identified. Although highly desirable, they will have a fiscal impact. That fiscal impact will have three elements just as the previous amenities have. Acquisition, development and the continuing maintenance will add to the cost of operating the City. The citizens and City Council must evaluate each on its merits and its costs.

In conclusion, it appears that the major proposals of the General Plan can be implemented, although with varying degrees of fiscal impact. It thus becomes important for the City to take all possible steps to mitigate and reduce these fiscal impacts. That subject is discussed in the following section.

Alternatives Considered

The Fiscal Element has analyzed strategies for and impacts of implementation of the preceding elements of the General Plan. Its findings thus differ in some respects from previous analyses, specifically, the Development Alternatives report which analyzed somewhat different plan alternatives, or plan alternatives presented with different implementation assumptions.

The major pertinent differences between this report's estimates and those of the Development Alternatives report are in two areas: cost of Sheriff's service, and assumptions regarding the type of park and recreation area to be provided.

The Development Alternatives report assumed Sheriff's service cost to vary directly with City population size, calculating costs on a per capita basis. This report acknowledges the existence of other factors, such as constant City size, low rate of increase in number of street miles, and low crime rate, which would limit the rate of increase in policing cost. This leads to the assumption that, even with the upper level range of population, only one additional car would be required.

Regarding park and open space area, the Development Alternatives report assumed an emphasis on more costly, fully developed active park areas. The analysis in this element assumes a balance (roughly half and half) between active and passive park and recreation area.

Comparison of the following tables illustrates the differences in fiscal impacts that result from changes in these assumptions. Furthermore, comparisons between these two tables illustrates that, contrary to previous belief, changes in development density do not influence cost nearly so much as the changes in cost assumptions identified above.

Mitigation Measures

F.4.1 Mitigating Measures

~~The identified public costs of implementation of the General Plan can be reduced by a series of different strategies. These are classified for purposes of discussion in this section, under three separate headings: cost reduction, revenue increase, and regulatory strategies.~~

~~Cost Reductions. There are numerous ways by which the City may effect economies in the immediate and distant future. A continuing program of cost review and examination could have visible impact on costs to the citizen and to the community. The following is a review of some of the ways the City could effect economies. The listing bears no relation to priority, desirability, or magnitude of the economy to be realized. Rather, it is a cafeteria of approaches that are worthy of investigation. Many of the items in the following list describe the process of review and analysis that is being undertaken now, by City staff, on a continuing basis.~~

~~Review of Current Contracting Strategy. The City now pays for many services through a series of contracts with public and private agencies. Since contract costs and service levels may vary from year to year, it is important to continually examine alternatives to current contracting strategies. The currently contracted services are predominately with county agencies, with a few minor services being provided by private organizations. Two alternative strategies are available to the City, for most services. The first is to consider a change from County contract to contract with public or private agencies. It may be possible through this strategy to realize reductions in cost of the service, specifically in the area of administrative costs. County administrative costs often appear to be high. Two services now performed by the County, street sweeping and traffic signal maintenance, are currently under consideration for transfer to private contractors in the future. Other candidates for transfer might include: street maintenance, building and safety, and park maintenance. A second general strategy would be to consider a shift from County or private contract to in-house performance of a governmental function. Services that could be evaluated on this basis might include, but would not be limited to: Road Department Services: Building and Safety; Public Safety—Police and Fire; and Recreation.~~

~~Combining and Consolidating of Services. This concept could be effected in various ways. The approach to be taken would depend upon such factors as cost effectiveness, benefits to be derived and the willingness of the involved agencies to participate. The three following examples illustrate the possibilities. First, it might be possible to combine duplicate services provided to citizens of all Peninsula cities. These might include: Road Department services, Animal Control, Refuse Collection, Public Safety – Police and Fire, and Parks and Recreation.~~

~~Second, cooperative agreements with the School District should be explored. City and School District offices are located near one another. There would appear to be some areas of mutual interest where economics might be realized. Some of the areas where joint solutions could be explored and evaluated are: parks and recreational areas; maintenance of buildings and grounds; and administrative services such as purchasing and data processing.~~

~~Finally, in the longer term, merger of two or more of the Peninsula cities might be contemplated. Such an approach might bring about significant economies. Efficiencies demonstrated by the combining of the common services (see above) could operate as a catalyst towards the eventual merger of two or more of the cities.~~

Reduced Level of Services. As a last resort, costs can be reduced by reducing service levels. While it is recognized that this alternative is inconsistent with stated plan objectives, it is presented here in the interest of comprehensiveness.

Such economies could be effected in a number of ways. First, levels of in-house personnel and facilities could be reduced. Second, personnel and facilities could be held constant. Third, reductions in costs of contracted services might be achieved by: decreasing the level of contract service purchased; holding the contract at current dollar costs with a resultant decrease in scope due to inflation; or holding to the current scope and specifications making no allowances for increased growth.

Revenue Increase. It is the expressed goals of the City to hold the property tax to a minimum and to continually explore and develop alternative or new sources of revenue. In this section some of these potential supplementary revenue sources available to the City for Plan implementation are described and discussed.

The list of potential sources includes those available in 1975. Availability of outside funding changes continually, as legislative and budgeting decisions add and subtract programs and funding each year. In recent years, both the Federal and State governments have become more sensitive to the revenue plight of cities. As a result, new fund sources – both recurring and nonrecurring – have been made available to cities; serious consideration is being given to increased sharing of revenues with cities. For the purpose of this discussion, revenue sources are categorized as either recurring (e.g., property tax, sales tax) or nonrecurring (one-time allocations, such as funding from the 1974 State Bond Act).

F.4.2 Alternative Recurring Fund Sources

The City may attempt to derive added revenues from sales tax, and from fees and charges for various services rendered. The City may also explore new revenue sources that might be made available to it, were it a charger rather than a general law City. In the longer term, changes in state legislation could provide additional revenues from new or existing sources. Possibilities are discussed below.

Sales Tax. It is anticipated that there will be only minimal commercial retail facility additions (estimated 15% increase) during the next 15 years. However, retail sales, most of them taking place in existing facilities, can be expected to expand at a slightly more rapid rate than population. Thus, tax contribution from this revenue source, on a per capita basis, will rise slightly over time. The future contribution of retail sales tax to city revenue may be consciously limited as a matter of city policy.

Approximately 125 of the 150 acres designated commercial are in the Marineland area. Sixty-two acres of that site have been developed; plans are now pending for development of the remainder, and for a program of augmented activities. With the added development and program augmentation this facility might generate increased sales tax revenue. It should be noted that this "commercial recreation" facility draws from regional and national markets and does not compete with smaller shopping centers elsewhere in the City. Marineland's expansion, therefore, is likely to represent a net addition of retail dollars to the City rather than merely a reallocation of current spending.

Further increases in sales tax revenue may result from changes in state formulas. Sales tax revenue is now distributed to local jurisdications based on the location of the sale. Efforts have been underway in California to revise this formula toward population-based allocation. Such a formula change would provide more equitable treatment for cities such as Rancho Palos Verdes. To illustrate the magnitude of possible change: the City received roughly $116,000 in 1974 under the present "location of sale" formula. Had sales tax fund been distributed on a fully "per capita" basis, city receipts would have been over $1,000,000.

Increased Service Charges. The City is permitted to seek reimbursement for the costs of providing some services. The City's present fee structures reflect current costs. However, costs change rapidly, and fee structures should be revised to keep pace. In particular, increased service or user charges should be continually reviewed in such development-related areas as: Planning and zoning; building and safety; sub-division and engineering; miscellaneous services, such as mapping and duplication.
The imposition of user charges to cover costs of services in such areas as parks and recreation facility use should be considered. These may be appropriate in certain selected instances.

Other Possibilities. Franchise fees in such areas as rubbish collection and cable television offer additional opportunities for revenue increase. An admissions tax on commercial recreation facilities could be considered. Additional possible revenue sources would become available to the City, if it chose to change from general law to charter city status. As a charter city, Rancho Palos Verdes could levy a percentage tax on all public utilities, including gas, electric, water and sewers. These latter taxes, although not property taxes, are borne by every resident consumer.

Property Tax. It is possible to expand revenues derived from the property tax.

Revenue derived from the City portion of the tax rate ($0.1820 per $100 of assessed value) can increase even if the rate remains the same. This result would occur to the extent that assessed value of property in the City increases. Assessed value increases in part due to new development and in part due to higher assessed value for existing property. In the latter case the tax burden on the property owner would thus increase in total dollar terms, but not in percentage of value terms.

Should it become necessary to increase the City property tax, State law limits the maximum tax rate to $1.00 per $100 of assessed value, without a tax override election.

F.4.3 Non-Recurring Fund Sources

Existing non-recurring fund sources include:

Environmental Excise Tax
General Revenue Sharing
Housing and Community Development Act Funds
Utility Undergrounding Funds
Bikeway grants
State Parks and Recreation Bond Act Funds

~~Continuing efforts should be made to obtain a fair share of these funds as long as they continue. Whether the City should seek to have present non-recurring fund sources (such as federal revenue sharing and Housing and Community Development Act funding) made permanent and recurring, must be evaluated in terms of the total City, State, and Federal tax load they imply.~~

~~Future non-recurring fund sources are, by their very nature, somewhat unpredictable as to timing, subject matter, and funding levels. Nevertheless, the City should monitor new programs as they emerge, and obtain its fair share.~~

~~Use of Regulatory Strategies. Land use regulation can often be a substitute for City expenditure as a method of achieving Plan objectives. This section describes the general theoretical base of regulation, and presents examples of strategies that might be used to implement specific Plan objectives. New court interpretations and legislative actions are making land use regulation an area of rapid change at the present time. Strategies will have to be evaluated carefully to determine their applicability in a given fact situation. California cities have a great deal of potential power to achieve general plan objectives through regulation of land use. However, plan making and ordinance preparation must be done fairly and equitably, providing sufficient opportunity for debate and discussion of the balance between private and public interest. Cities must go through a detailed and visible process of documenting the public purpose of the proposed regulations. The term "public purpose" is a broad one and can encompass not only the traditional "health, safety and welfare" items but also such additional items as efficiency of municipal expenditure, provision or protection of environmental amenities, open space or view resources.~~

~~In the following paragraphs, a brief overview is provided of some of the regulatory techniques that might be used to implement the General Plan. It should be noted that these regulatory techniques are by no means cost free. They can require larger staff with specific expertise. Some costs of administering provision of complex plans and ordinances can be recovered from developers. Every effort should be made to maximize recovery of these costs. Even though the developer passes on the cost to the buyer, the buyer has the benefit of stringent City regulation. Maintenance of the City's environmental factors data base may require ongoing, added expense for planning and administrative functions.~~

~~Specific Plans. California state planning law permits the use of an intermediate level of planning control, the "specific plan." It is more specific in application than the policy-oriented General Plan but less specific than zoning ordinances and subdivision regulations. The specific plan can indicate in detail such features as housing, recreation areas, educational facilities, public facilities, open space areas, areas deemed unbuildable. While most communities use specific plans selectively, for areas that are unique in terms of topography or possibly ownership, it is theoretically possible for all areas of a city to be covered by specific plans. (This is, in fact, the planning approach of the City of Livermore.)~~

~~In addition to specifying use types and locations, the specific plan may indicate appropriate timing and staging of development. The consistency requirement again applies: the provisions of the specific plan must be consistent with policies expressed in the General Plan. In many respects, the specific plan serves as a planned unit development designation, brought into being at the city's initiative, rather than on the initiative of the developer. This approach can be justified wherever the background date and the~~

plan policies can be used to show the need for specialized regulatory approach to implement the general objectives of the plan. In the case of Rancho Palos Verdes, it seems initially appropriate to consider the specific plan approach for areas within the coastal zone. However, broader use of the concept may be warranted, as well.

Coastal Specific Plan District. This Plan establishes a Specific Plan District within its coastal region. This procedure is provided for under Section 65450 of the State planning law. The region is defined by the City boundaries at both extremities and contains the land area from the mean high tide line to Palos Verdes Drive West and South. This district is being established for a number of reasons: further studies of earth sciences, hydrology, and biotic resources in this region are necessary in order to more accurately assess these factors s to their specific location. These studies shall determine the coastal region in order to preserve and maintain resource areas, while restricting future developments from hazardous areas. The regional resource importance of this area requires precise and well-defined plans for both use and specific resource value of land areas. Finally, governmental jurisidiction over the area currently is undetermined and will be defined later. Due to this unsettled condition, it would be premature to allow intensive development in this region until Coastal Commission powers and plans are more defined.

The City will be initiating and receiving studies which supply additional input on proper treatment of the coastal region. Based on this Specific Plan, decisions may be reached which alter use or intensity of urban activities. Through these studies, information will be conveyed which will help to better define bluff regions and holding capacities in coastal areas. This specific plan will be completed as soon as practical.

Zoning and Subdivision Regulations. The zoning ordinance and subdivision regulations are the traditional implementing mechanisms for achievement of general plan policies and objectives. Recent changes in State law have made possible more sensitive use and application of these traditional tools. Traditionally, zoning has addressed regulation of use density, use type, structure bulk and coverage. More recently, zoning has been used to protect the public from natural hazards such as flood, and geologic hazard, and to protect valuable public resources such as prime agricultural land, watershed and other water management lands, and scenic views. Possible zoning classifications for use in open space preservation are: large lot zoning: slope-density zoning, where lot size depends on slope of land; or planned unit development controls.

Subdivision ordinances may regulate the total design of a proposed development, designating amounts of park and open space, degree of landscaping, and other features. Local governments now have the power to (and may be required to) deny approval of subdivision maps, when it appears that approval would result in "substantial environmental damage." The information developed in the preparation of the General Plan, supplemented by that provided by applicants for development, provides the basis for determination of such adverse environmental impacts.

The Subdivision Map Act makes it possible for the City to require either dedication or reservation of land for certain types of pubic facilities – but only to the degree that the need for those facilities has been documented in general and specific plans. Thus, if a firm foundation of need for park and

recreation facilities is laid in the recreation component of the General Plan, dedications can be required using the provisions of the Quimby Act. In some cases, reservation but not dedication of land can be required, also following a showing of need. In reservation situations, cost savings to the City are indirect rather than direct. Payment for the site must ultimately be made. Control of the use of the site years before actual development serves to reduce speculative pressure that might increase site value and purchase price. Furthermore, an opportunity to accumulate necessary funds over time for the purchase may be available.

Planned Unit Development. Planned unit development procedures add flexibility to the traditional zoning and subdivision controls. They permit individualized approaches to the development issues confronted on particular parcels. Ordinances often include incentive revisions. They are intended to encourage the incorporation of desired features by the developer. Use of solar energy, provision of added open space, and use of experimental alternative circulation systems (bikeways, equestrian trail systems) are but a few of the many possibilities.

While many advantages can be derived from the use of these procedures, their use must be closely monitored in each case to insure that permitted development is consistent with features of the given site and does not adversely affect adjacent areas of the community. If this implementation approach is used the City must be prepared to staff the development approval and monitoring functions more heavily and with more skilled personnel than would be required to administer a more traditional set of land use controls.

Planned unit development controls generally work better if incentives are applied after a general reduction of permitted densities throughout the City or the sub-area in question. If normally permitted densities are not thus reduced, the effect of addition of bonuses is often to make possible more dense use of the land than contemplated by the Plan. Overloading of service and facility systems generally results. The need to provide incentives that would encourage a property owner to apply for use of PUD rather than traditional underlying controls may be removed in those cases where it is deemed advisable by the City to designate an area "mandatory PUD," i.e., City's option rather than developer's option. This designation requires a detailed justification of public purpose and may not be applicable in all cases where it is desired. Nevertheless, it is an alternative definitely worthy of further consideration. A comprehensive use of planned unit development controls can be used in Rancho Palos Verdes, in the form of overlay control districts. These are described in the following sections.

Overlay Control Districts. Overlay control districts could be created to further reduce impacts of development in sensitive areas. Although the developable areas are not of an extremely critical condition which could endanger future residents (those areas possessing extreme conditions were placed in Natural Environment/Hazard), it is concluded that major disruptive treatment of these land areas would alter features which form the City's character. These features include significant natural, urban, and socio/cultural characteristics. Control districts are placed on those land areas fund, through analyses in the various elements (Natural Environment
Element, Socio/Cultural Element and Urban Environment Element), to possess special features.

F.4.4 Transfer of Development Rights

~~The technique of development rights transfer may be usable in certain areas of the City. In its simpler form, development rights transfer may be part of the planned unit development approach described above. For example, in a "clustering" solution, a property owner may be permitted to transfer buildable density from one section of his parcel to another in return for an agreement to hold permanently open the section from which density was transferred.~~

~~Further extensions should be considered. The next logical extension of the development rights transfer technique is to the case where two or more adjacent owners of property apply jointly for development approval. In that case, although the ownership of the parcels might be technically separate, the "project" could be treated as a unit, for regulatory purposes. This would make it possible for densities to be transferred from one area of the unit to another.~~

~~Few California communities have even begun to experiment with the more limited applications of development rights transfer described above. This technique offers the opportunity for relatively low cost achievement of many Plan objectives, if implementation details can be worked out. Its use should be approached cautiously to insure that proposed transfers do not overload natural or man-made systems in transferee areas.~~

DRAFT LAND USE ELEMENT

comparison to current General Plan Land Use Element

4/26/2018 version

Note: This document compares the proposed Draft Land Use Element with the current Urban Environment and Land Use Elements of the General Plan. Changes are shown as follows: underline text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

VIII Land Use Element

The State of California requires a Land Use Element to be included in every local government's general plan. According to California's 2017 *General Plan Guidelines*, the Land Use Element must designate the proposed general distribution and location and extent of the uses of the land for housing, business, industry, and open space, including agriculture, natural resources, recreation, enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private use must consider the identification of land and natural resources suitable for designation in the Conservation and Open Space Element. The Land Use Element must also include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. Additionally, the Land Use Element shall identify and annually review those areas covered by the plan that are subject to flooding identified by floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources.

The City's Land Use ~~Plan for the City~~ Element is a composite of the other elements of the General Plan. The determination of appropriate land uses is derived from the natural environmental, socio/cultural, and urban environmental constraints and opportunities analyzed throughout the General Plan. Those sections of the General Plan also contain land use policies.

Determinants of appropriate uses include the following:

- Natural environmental constraints: climate, geotechnical factors, hydrology, and biotic resources.
- Social and cultural resources and needs of the community and region.
- Existing and future adjacent development patterns, intensities, and structural types.
- Capacity of infrastructure, local and regional.
- Safety.
- Visual and noise consideration.

~~These determinants were overlaid overlayed for the various areas and analyzed for their relationships. The initial step was to determine which areas had characteristics which that should preclude them~~

~~from use for physical development at this time. The primary determinants were natural environmental constraints and safety. These areas are discussed in the Natural Environment Element and summarized in the Natural Environment/Hazard Areas section of this Plan.~~

In the City's original General Plan, where it was determined that there were no constraints severe enough to preclude development, areas were then analyzed for appropriate uses, based on all determinants, and controls which might be necessary to preserve and/or enhance environmentally sensitive areas. Since the adoption of the first General Plan, developable areas of the City have become nearly built out. As such, the discussion of land uses now focuses on describing existing conditions to be preserved and policy direction for those few sites that still remain to be developed. Descriptions of each land use and residential density based on the determinants follow below, ~~also~~ in addition to the concepts of overlay control districts and specific plan areas. ~~Various other implementation techniques may be used by the City, including, but not limited to those described in the fiscal element.~~

There are two broad classifications of land use in the City: Natural Environment/Hazard Areas and Urban Activity Areas.

- The Natural Environment/Hazard Areas include areas that possess extreme physical constraints due to the impacts of features such as active landslides, sea cliff erosion, and extreme slopes. They also represent areas designated as Open Space Preservation, which make up the City's Palos Verdes Nature Preserve.
- The Urban Activity Areas include the Residential (also discussed in the Housing Element), Commercial, Institutional, Recreational, Agricultural, and Infrastructure Facility land use designations.

Also included in the General Plan is the analysis of population and housing trends from the City's incorporation to "build out" in 2030. This Element also discusses the application of special districts such as Overlay Control Districts and the Specific Plans that have been adopted for certain sites or areas within the City. This Element briefly discusses the compatibility of development activity in adjacent jurisdictions as it related to the City. Finally, this Element enumerates the City's land use policies.

1 GOALS

1. ~~It is the goal of the City of Rancho Palos Verdes to~~ Provide for land uses that will be sensitive to and enhance the natural environment and character of the ~~community~~ City, supply appropriate facilities to serve residents and visitors, ~~promote a range of housing types,~~ promote fiscal balance, and protect the general health, safety, and welfare of the City.

2. Carefully control and direct future growth towards making a positive contribution to all elements of the community. Growth in Rancho Palos Verdes should be a cautious, evolutionary process that considers the capacity limitations for the City, and the environmental factors and quality of life on the Peninsula.

3. ~~It is the goal of the City of Rancho Palos Verdes to~~ Preserve and enhance the ~~community's quality of living environment; to enhance the~~ visual character and physical quality of existing neighborhoods and ~~to encourage of development of~~ housing in a manner which ~~adequately~~ serves the needs of ~~all present and future~~ the residents ~~of the community~~.

4. The City shall discourage industrial and major commercial activities that are not compatible with ~~due to~~ the terrain and environmental characteristics of a respective region of the City. Activities ~~Commercial development~~ shall be carefully and strictly controlled, and limited, giving ~~to~~ consideration ~~of convenience or neighborhood service~~ to the respective neighboring residential or open space areas.

5. ~~The City shall~~ Encourage the development of institutional facilities to serve the ~~political, social, and cultural needs of its citizens~~ needs of its residents.

6. ~~The City shall~~ Endeavor to provide, develop, and maintain recreational facilities and programs of various types to provide a variety of activities for persons of all age groups and in all areas of the community.

7. Existing agricultural uses within the City shall be ~~encouraged, since they are desirable for resource management and open space~~ allowed so long as they are in concert with the environmental objectives stated elsewhere in the General Plan.

8. Retain the present predominance of single-family residences found throughout the ~~community, while continuing to maintain the~~ City. Allow for the maintenance and replacement of existing ~~variety of housing types~~ non-conforming multi-family residential uses. (this was previously under Policy)

9. Control the alteration of natural terrain. (this was previously under Policy)

1. Preserve the rural and open character of the City ~~make an effort~~ through zoning, cooperation with other ~~governmental entities~~ jurisdictions, and acquisition~~s to preserve the rural and~~ of open ~~character of the city~~ space land. (this was previously under Policy)

2 Policies

Compatibility of Adjacent Land Use Areas

2. Work in conjunction with neighboring ~~cities~~ jurisdictions when development plans are submitted to ~~either~~ ~~this~~ the City or ~~the~~ other ~~cities~~ jurisdictions that ~~which~~ generate impacts ~~into other jurisdictions~~ on the City ~~across~~ jurisdictional lines.

Residential ~~Land Use Policies~~

3. Require all new housing developed to include suitable and adequate landscaping, open space, and other design amenities to meet the ~~community~~ City's standards ~~of environmental quality~~.

4. Encourage and assist in the maintenance and improvement of all residential neighborhoods so as to maintain ~~optimum~~ local standards of housing quality and design.
5. ~~Prepare~~ Maintain and update the Development codes with quality standards, ~~but~~ being flexible to new technology and techniques of building.
6. ~~Support and assist in enforcement of "open housing" regulations to prohibit discrimination in the sale or rental of housing.~~
7. ~~Cooperate with County, State, and Federal agencies, monitoring all housing programs offered, and studying their desirability for implementation in the City.~~
8. ~~Cooperate with other governmental entities to explore the possibility of obtaining rent and purchase subsidies for low-income housing in the City and South Bay Region.~~
9. ~~Initiate strong code enforcement programs so that scattered housing problems are solved rapidly to prevent even small-area deterioration.~~
10. ~~Discourage condominium conversion since this further limits the economic range of housing.~~
11. Require all developments ~~which propose~~ that include open space ~~to be~~ held in private ownership to provide legal guarantees to protect these areas from further development and to establish mechanisms enforceable by the City to ensure continued maintenance.
12. Encourage energy and water conservation in housing design.
13. Require ~~proposals for~~ that development ~~of areas which impact~~ reasonably protects corridor-related views ~~to analyze the site conditions and address the preservation of such views.~~
14. Prohibit encroachment on existing scenic views reasonably expected by neighboring residents.
15. Enforce height controls to ~~further lessed the possibility for~~ reasonably minimize view obstructions.
16. ~~Require proposed housing to show how it ensures the existence of~~ Encourage all development to preserve neighboring site privacy ~~while simultaneously providing privacy to the occupants of the proposed units~~.
17. ~~Allow no further development involving any human occupancy within the active slide area.~~
18. Require all new housing and significant improvements to existing housing to consider neighborhood compatibility.

Commercial ~~Land Use Policies~~

19. Place commercial ~~activities~~ and institutional developments under the same building orientation controls as residential ~~activities~~ developments in regard to topographic and climatic design factors.
20. Require ~~the~~ that commercial and institutional activity ~~where a commercial area would be nonconforming with~~ buffer and mitigate negative impacts on adjoining ~~activities, to provide the necessary mitigating measures, including landscaping, etc~~ residential areas.
21. ~~Make special efforts to ensure safe conditions on ingress and egress routes to~~ Require commercial ~~areas for both~~ and institutional development to be designed to maximize pedestrian~~s and vehicles~~ safety.
22. Require that scenic view ~~disruption by~~ preservation by commercial and institutional activities be taken into account not only in the physical design of structures and signs, but also in night lighting of exterior grounds.

23. Require ~~adequate provisions be incorporated into~~ commercial and institutional sites ~~design to reduce negative impacts on~~ to limit the exposure of parking and exterior service areas from the view of adjoining ~~residential areas~~ sites and circulation routes.
24. Specify the mix of standard and compact parking spaces for new development to ensure that all parking requirements are met.
25. Require adequate screening or buffering techniques for all new and existing commercial activities in order to minimize odors, light and noise pollution.

Institutional (Public, Educational and Religious) ~~Land Use Policies~~

26. ~~Locate schools on or near major arterials or collectors, buffered from residential uses, and~~ Require any new schools and encourage existing schools to provide adequate on-site parking and automobile access.
27. ~~Make every effort to preserve~~ Incorporate the Coast Guard Station ~~as a historial and cultural resource, in the event~~ into Lower Point Vicente Park when it is deactivated.
28. ~~Continue to work closely~~ Coordinate with the School District i~~n coordinating planning and programming~~ on cross-jurisdictional issues.
29. Encourage implementation of plans for pedestrian and bicycling networks linking residential areas with schools for the safety of children.
30. ~~Encourage additional institutions of higher learning and research, particularly those related to oceanography.~~
31. Review the location and site design of future institutional uses ~~very carefully~~ to ensure their compatibility with adjacent sites.
32. Encourage mitigation of the adverse aesthetic impacts of ~~County communications tower, as changing technology and economics permit~~ utility facilities.
33. Encourage the unification of the Eastview students into the Palos Verdes Peninsula Unified School District.

Recreational Land ~~Use Policy~~

34. Encourage local ~~citizens~~ groups to participate in the planning, development, and maintenance of recreation facilities ~~to the extent possible~~.

Agricultural Land ~~Use Policies~~

35. Encourage ~~implementation techniques for~~ preservation of agricultural activities.
36. ~~Assist in the protection or conservation of agricultural sites.~~
37. ~~Encourage continued operation of existing produce and flower stands, not necessarily in present locations and structural types, but in concept, related to local agricultural use.~~
38. ~~Preserve flower farming wherever possible, in order to provide aesthetic appeal and visual accent.~~

Open Space Preservation ~~Land Use Policy~~

39. All land with an Open Space Preservation Land Use Designation shall be utilized in compliance with the City's NCCP.

3 Natural Environment / Hazard Areas

Natural environment/hazard areas to be maintained encompass approximately ~~1245~~ 1,710 acres of land. There are four separate land use designations (Figure 1) that encompass these areas: "Hazard," "Open Space Hillside," "Open Space Preservation,. and "Greenways." Descriptions of each of these designations are as follows.

3.1 Hazard

The Hazard ~~These~~ areas possess extreme physical constraints and will be maintained in open space at this time, with very light intensity uses permitted such as agriculture and recreational activities, for the protection of public health, safety, and welfare. The constraints include: active landslide, sea cliff erosion hazard, and extreme slope of 35 percent and greater. These relate directly back to the analysis and policies in the ~~Natural Environment Element~~ Conservation and Open Space Element and the Safety Element in the section on areas for consideration of public health and safety.

The ~~Natural Environment/~~Hazard designation includes ~~a section~~ an area of existing residences, part of the Portuguese Bend community, located within ~~on~~ the active Portuguese Bend landslide. This Plan recognizes these existing residences, in a density range of 1-2 d.u./acre, overlaid ~~overlayed~~ with the ~~Natural Environment/~~Hazard designation. The criteria and policies to regulate this area have been ~~stated in the Natural Environment Element, and include the following: (1) Existing uses and structures may be continued, transferred, sold, maintained, and restored; (2) No further development involving any human occupancy should be allowed; and (3) Construction of any new permanent structures be prohibited~~ codified in the City's Landslide Moratorium Ordinance (Chapter 15.20 of the City's Municipal Code), which was originally enacted in September 1978. The purpose of the Landslide Moratorium Ordinance is discussed in more detail elsewhere in this Element. ~~If this area is stabilized by some natural or man-induced forces, the designation would be reviewed.~~

The Hazard Area designation also occurs on other properties throughout the City that are blufftop lots along the City's coastline. In many cases, the Hazard designation along the coastline has been applied to portions of residential properties.

3.2 Open Space Hillside

The Open Space Hillside areas also are subject to extreme physical constraints and will be maintained as open space, with very light-intensity uses permitted, such as landscaping, agriculture, recreational activities, and very minor structures, for the protection of the public health, safety, and welfare. The constraints include active landslide and extreme slope of 35% or greater. These relate directly back to the analysis and policies in the Conservation and Open Space Element and the Safety Element in consideration of public health and safety. The Open Space Hillside areas are typically steep-sloped areas near canyons and are found on private property that contain existing residential structures and related accessory structures.

3.3 Open Space Preservation

The Open Space Preservation areas are composed of the City's Palos Verdes Nature Preserve. These are lands that have been acquired by the City as permanent open space, which are managed by the

Palos Verdes Peninsula Land Conservancy. The purpose of these lands is to provide permanent open space buffers within the community, to protect sensitive plant and animal communities, and to provide opportunity for passive recreational uses that are compatible with this purpose.

The Land Use Element designates approximately 1,400 acres for Open Space Preservation. This designation includes portions of properties acquired by the City for open space purposes that previously had other land use designations such as Hazard and Residential (Figure 1). These properties have primarily been consolidated under the ownership of the City to form the "backbone" of the Preserve (refer to the Conservation and Open Space Element).

3.4 Greenways

Greenways are pedestrian and bicycle, non-motorized vehicle transportation, and recreational travel corridors that meets certain requirements, including being located adjacent to an urban waterway. Urban waterways are creeks, streams, or rivers that cross developed residential, commercial, industrial, or open space land use (Civil Code Section 816.52). While the City has various trails and pathways, none are considered greenways as there are no urban waterways as defined in Civil Code Section 816.52.

Urban Land Areas

Urban activity areas encompass the majority of the land uses in the City, totaling approximately ~~6,712~~ 6,564 acres (Figure 1).

Urban activity areas consist of sites that have been set aside for some structured use which, either directly (primary activity areas) or indirectly (secondary activity areas) serve a function oriented toward urbanization. Primary activity areas are those sites where residential, commercial, industrial, recreational, or institutional activities take place. Secondary activity areas are those sites that are used in infrastructure activities which provide service to primary urban activity areas. Since secondary activity areas were considered to be a reflection of infrastructure, they are, therefore, included in the infrastructure section of the General Plan's Circulation Element.

The following section deals with both existing and proposed primary Urban Activity Areas. As of 2017, the City is nearly built out. As described in Table 1, limited opportunities remain for new residential or non-residential development of undeveloped land within the City. As such, new development activity is expected to be mainly limited to the re-development of existing improved sites.

Table 1
Land Use Acreage by Land Use Type by 2030

	Developed Acreage	Undeveloped Acreage	Total Acreage
Natural Environment/Hazard Areas:			1,710
Hazard	0	92	92
Open Space Hillside	0	251	251
Open Space Preservation	0	1,367	1,367
Urban Activity Areas:			6,564
Residential*	5,111	389	5,500

Table 1
Land Use Acreage by Land Use Type by 2030

	Developed Acreage	Undeveloped Acreage	Total Acreage
Commercial	273	9	282
Institutional	338	10	348
Recreational	396**	17	413
Infrastructure	21	0	21
		TOTAL	8,274

Notes:

* Residential includes the combined land use designation of Residential 1–2 d.u./acre and Hazard that is found within the active Portuguese Bend landslide area.

** Recreational facilities that fall under the "Developed Acreage" column may be partially developed with buildings, other structures, landscaping, and/or hardscaping, while other portions of the same Recreational facility are undeveloped.

4.1 Residential

Residential activities are the major land use in the City (Figure 1), with existing and proposed residential uses encompassing approximately ~~5,471~~ 5,500 acres (~~69.5~~ 66.5% of the total land area). ~~1,716 acres are proposed for new residential use.~~ The predominance of residential use is based on several factors: the ability of residential activity to produce low environmental stress, the geographic location of the community with no major transportation facilities, lack of market potential for any major commercial development, and need for support facilities only to meet the community's demand.

Residential Intensity and ~~Densities~~ Density Standards

This element establishes several ranges of residential intensity and density standards. The density, or the number of existing and projected population per land use is shown under Section 3.4 Population Projections. The intensity ranges, which are described in more detail below, are intended to accommodate residential development spanning the spectrum from very low density, semi-rural detached homes to moderately dense, attached multifamily residences.

- ~~*1 Dwelling Unit per 10 to 20 Acres.* The Plan does not designate this density at present; however, in the future it may be used for preservation of agriculture and/or areas of critical concern. It would have extremely low environmental impacts.~~

- *1 Dwelling Unit per 5 Acres.* Land designated in this density possesses or is immediately adjacent to sensitive plant or animal habitats, and development could have a direct effect on these and the watershed of canyon habitats. Such land generally has slopes of 25 to 35%. It is anticipated that any future residences could be clustered in the most buildable sections of such lands, extending existing dead-end streets, and providing development types consistent with the adjacent neighborhoods, while preserving the most sensitive areas of the canyons. This development approach ~~It w~~ould serve to mitigate environmental impacts.

- *1 Dwelling Unit per acre.* ~~Vacant~~ land designated in this density ~~in the original General Plan was of is of~~ two primary types. Firstly, ~~(1)~~areas identified in the Conservation and Open Space ~~Natural Environment~~ Element having high slopes, wildlife habitats, natural vegetation, canyons

within the general area, some ancient landslide, plus some immediately adjacent areas included for continuity, are designated at this density. This density would tend to promote development which would have low environmental stress and be so designed under the use of overlay control districts that the physical and social impacts could be minimized. Much of the land originally designated at this density in these environmentally-sensitive areas has now been re-designated as Open Space Preservation, as discussed above. Exceptions include the undeveloped *Point View* and *Plumtree* properties within the City's Landslide Moratorium Area. Secondly, ~~(2)~~areas in the Coastal ~~region~~ Specific Plan District that were not yet committed to urban use ~~and within the region designated for a~~ at the time of the City's adoption of its first General Plan (which is further described under "Specific Plan Districts") was designated at this density ~~(which is further described later in this section)~~. Since the adoption of the first General Plan, most of this land has been committed to urban use, including the *Lunada Pointe* and *Oceanfront Estates* neighborhoods and the Trump National Golf Club. There currently remain only a few vacant lots within the Coastal Specific Plan District that are designated for future development at this density, mostly within the Trump National project.

- *1 to 2 Dwelling Units per Acre.* ~~Vacant~~ Land designated in this density range in the original General Plan had ~~has~~ low and moderate physical constraints, and social constraints, such as public views and vistas, which at this density could be controlled through subdivision design. This density is compatible with the Peninsula environment and with adjacent existing densities and/or a reasonable transition between lower and higher densities. There currently remain only a scattering of vacant lots to be developed at this density, mostly within the City's equestrian neighborhoods located within the *Portuguese Bend* community and along Palos Verdes Drive East and Via Campesina. ~~The amount of stress to the environment can be further reduced depending on the development and structural techniques used.~~

- *2 to 4 Dwelling Units per Acre.* ~~V~~acant Land designated in this density range in the original General Plan had ~~has~~ low and moderate physical and social constraints and the density was ~~is~~ compatible with the adjacent existing and future densities. There currently remain only a few, widely scattered larger parcels designated for this density that could be developed in the future. ~~Innovative development techniques can reduce the environmental impacts.~~

- *4 to 6 Dwelling Units per Acre.* ~~Vacant~~ Land designated in this density range ~~in the original General Plan had~~ has generally low physical and social constraints ~~by reason of its coastal location (and this is included in a Specific Plan designation for further analysis)~~. At the time of the adoption of the City's first General Plan, most of this land had already been committed to urban use. This includes the single-family neighborhoods in the formerly-unincorporated *Eastview* area that were annexed into the City of Rancho Palos Verdes in 1983. There currently remain only a scattering of small vacant lots to be developed at this density. ~~This density is proposed in several areas where existing higher densities have created severe adverse impacts and new development must be of a moderate density to mitigate the situation. The areas are large enough in most cases to allow for viable self-contained development types, such as townhouse clusters. Environmental impacts are increased.~~

- *6 to 12 Dwelling Units per Acre.* Land designated in this density range in the original General Plan had much the same determinants ~~exist for the land designated in this category~~ as that in the 4 to 6 dwelling units per acre range (above), but the vacant sites were small and almost completely surrounded by existing high-density uses. This includes the multi-family neighborhoods in the formerly-unincorporated *Eastview* area that were annexed into the City of Rancho Palos Verdes in 1983. No vacant parcels remain designated for this density that could be developed in the future. ~~The need for mitigation is the same, but the feasibility of a more moderate density development less. Environmental impacts are likely to be high.~~

- *12 to 22 Dwelling Units per Acre.* ~~No vacant~~ Land ~~is~~ designated in this density range in the original General Plan mainly encompassed existing, moderate- to high-density multi-family residential projects that were constructed prior to the City's incorporation. No vacant parcels remain designated for this density that could be developed in the future. ~~It is a reflection of an area with existing high density residential uses. No new development is proposed due to potential extreme environmental impacts.~~

4.2 Commercial

Commercial ~~Activity~~ Land Use Designations

~~Commercial uses in particular locations are covered thoroughly in the Urban Environment Element. The Land Use Plan specifically designates 65 acres for new commercial use, plus the potential of an additional neighborhood-scale commercial center in the southeastern section of the City to be analyzed a part of the Specific Plan District. Commercial activities would comprise 1.7% of the total land area, with most of a commercial/recreational type. While this is a very small amount of commercial use, it is based on the existence of major commercial facilities in neighboring cities and the need to preserve the character of the Peninsula. Commercial uses tend to have environmental impacts unless small in scale and very carefully designed. Several small existing commercial areas are not designated for commercial use in the Plan. These are scattered, poorly located, and do not contribute to good land use planning. It is proposed that these activities be made non-conforming and would continue until their economic life is completed.~~

The Land Use Element designates approximately 282 acres for commercial use (Figure 1), including the neighborhood-scale commercial centers along Western Avenue that were annexed to the City in 1983, and are analyzed as part of the Western Avenue Specific Plan Districts. Commercial activities would comprise 3.4% of the total land area, with mostly retail or office types. There is a total of 11 commercial shopping centers with approximately 240 tenants in the City. Most are single-story strip malls with an open parking lot and considered low density. There are four larger multi-story centers, two of which contains a mix of retail, office, and restaurant uses while the other two contain all office and medical uses. There is one larger hotel/resort (Terranea Resort) that is developed with sleeping accommodations, restaurants, banquet facilities, restaurants, retail shops, and golf on site.

Approximately 9 acres of vacant land are designated for new commercial office use. While this is a very small amount of commercial use, it is based on the existence of major commercial facilities in neighboring cities and the need to preserve the character of the Peninsula.

Over the course of the past 35 years, the community has become accustomed to and dependent upon certain commercial activities, which are located throughout the City. The locations of these commercial uses are on corner lots along the City's most predominant arterials or collector streets. Due to the length of time that these businesses have been in existence, and the community's demand for them, it is preferable that these sites should not revert to the surrounding land use, but rather that the sites should retain the flexibility to either continue the existing use or revert to the underlying land use as warranted by future economic and social conditions.

Existing Peninsula-Wide Commercial Uses

The major share of commercial activity on the ~~Palos Verdes~~ Peninsula occurs in Rolling Hills Estates, which contains the Peninsula Center and Town & Country shopping centers, which are sub-regional shopping centers with a variety of retail outlets; the Promenade at the Peninsula open-air mall, which includes several major national retailers and a 13-screen multiplex cinema; and numerous smaller freestanding and multi-tenant commercial and office buildings and centers. Since 1975, however, the amount of commercial development in ~~Rancho Palos Verdes~~ the City has increased, both as the result of new development of formerly-vacant or under-developed land, and the annexation of existing commercial districts in the formerly-unincorporated Eastview area.

Retail

~~Retail facilities in Rancho Palos Verdes are limited. There are a total of 36 licensed retail outlets in the City. The largest concentration of retail outlets is at the Golden Cove Center, containing 16 retails stores, including a supermarket and a variety of smaller stores. This facility totals approximately 86,000 square feet, of which approximately 66,000 square feet are devoted to retail outlets, with the remainder used for office space and service establishments.~~ The Terraces at South Bay is the largest commercial center in the City. The Terraces occupies a 10.95-acre site at 28901 Western Avenue that was extensively renovated during the late 1990s and in 2016. At this time, major tenants in The Terraces include LA Fitness, Marshall's department store, Trader Joe's market, and a six-screen multiplex cinema.

The second largest retail facility in the City is the 6.35-acre Golden Cove Center, located ~~on~~ at Hawthorne Boulevard and ~~contains 55,000 square feet of retail space, including a supermarket, bank, and a small department store.~~ Palos Verdes Drive West. The Golden Cove Center was also extensively renovated and expanded beginning in the late 1990s. Major tenants in the Golden Cove Center includes the Peninsula Montessori School, a Trader Joe's market, and the Admiral Risty restaurant. The three freestanding buildings along the Palos Verdes Drive West were constructed in 2001 and are occupied by a Starbucks coffee shop, a Subway sandwich shop, and other food/restaurant tenants. The existing two-story building on the site is occupied by a mix of ground-floor retail and upper-floor office and service businesses. Although not technically a part of the Golden Cove Center, there is a 7-11 convenience store and Citgo gasoline station at the corner of Hawthorne Boulevard and Palos Verdes Drive West.

Westmont Plaza is the third-largest multi-tenant retail center in the City. The 5.95-acre shopping center is located at the southeast corner of Western Avenue and Westmont Drive. The center has undergone modest renovation since the annexation of the Eastview area in 1983. Major tenants in

Westmont Plaza includes a Smart & Final store, a Wells Fargo bank, medical offices, retail (pet store), and service shops (e.g. nail salon, cleaners, etc.).

The fourth-largest commercial center in the City is the Ralphs supermarket, located on a 4.52-acre site at 30019 Hawthorne Boulevard. The building was renovated into an upscale "Ralphs Fresh Fair" supermarket in the early 2000s and includes a bank branch and a Starbucks coffee shop.

Other commercial centers in the City include:

- Miraleste Plaza, with several small retail ~~outlets, and two small convenience markets at other locations~~ and service businesses serving the neighborhood surrounding the intersection of Palos Verdes Drive East and Miraleste Drive;
- A small, multi-tenant commercial building anchored by a 7-11 convenience store at 28041 Hawthorne Boulevard;
- Several small, multi-tenant "strip" commercial centers and freestanding retail, service and restaurant businesses along Western Avenue; and,
- Six other automotive service stations at various locations in the City; and
- A stand-alone Veterinarian Hospital near the Golden Cove Center along Palos Verdes Drive West.

~~In addition, there are a total of ten service stations scattered throughout the City.~~

~~Table 7 shows retail sales in Palos Verdes Peninsula communities for the year 1973. As shown, the major share of retail activity on the Peninsula occurs in Rolling Hills Estates, which contains Peninsula Center, a sub-regional shopping center with a variety of retail outlets, including a department store. Annual retail sales for Rancho Palos Verdes were estimated at nearly $9 million for 1973 based on sales reported since incorporation in the fourth quarter of 1973 and the first quarter of 1974.~~

~~The residents of Rancho Palos Verdes generate a great deal more retail sales than are captures at the limited commercial facilities offered in the City. Table 8 presents a calculation of estimated retail sales generated by residents for 1973. With median incomes of over $25,000 in 1973 (1970 median income inflated at a 5.6 percent annual rate), total personal income is estimated at over $268 million. The Bureau of Labor Statistics has estimated that upper income families spend approximately one-third of their gross incomes for retail items. Total retail expenditures for 1973 of residents of Rancho Palos Verdes are thus estimated at nearly $90 million. Comparison of total retail sales generated by Rancho Palos Verdes residents with actual retail sales in the City shows the amount of retail dollars flowing to other areas, including Peninsula Center, indicating that only approximately 10 percent of the retail expenditures by residents are captured at local establishments.~~

Office Space Office space activities in the City ~~Rancho Palos Verdes consist of 35 service establishments, including 12 real estate offices, two savings and loans, and a bank~~ occur mainly in a strip of multi-tenant buildings along the north side of Silver Spur Road and on Western Avenue. ~~Of these 35 businesses, 13 are located in Golden Cove Center and 12 are located at Miraleste Plaza. There is also one small manufacturing firm at Golden Cove Center.~~ On Silver Spur, there is a 17.03-

acre area developed with 5 multistory office buildings constructed during the 1980s and 1990s. Office uses are also found in several existing commercial centers, particularly those that contain more than a single story. These include the Golden Cove Center, the 7-11 building at 28041 Hawthorne Boulevard, and the Harbor Cove shopping center at 28924 and 29000 Western Avenue.

~~Commercial office space is limited to real estate offices throughout the City and a small concentration of professional office space at Golden Cove Center. Golden Cove Center has approximately 15,000 square feet of office space currently.~~

Commercial Recreational

Commercial recreational activity in Rancho Palos Verdes consists of the 102-acre Terranea Resort along the coastline at 100 Terranea Way ~~large entertainment/recreation attraction at, Marineland. The Marineland complex, including the Oceanarium attraction, a restaurant and motel facilities, occupies 62 acres of an 84.7 acre site closed during the late 1970s and, after passing through the ownership of several different entities, the entire facility was closed in 1987. Marineland, which has experienced declining attendance in recent years, was recently leased to 20th Century Fox, Inc.~~ The resort includes 400-rooms, 50 casitas, 32 villa units, a 9-hole golf course, conference center, banquet facilities, spa, pools, restaurants, public trails and parks, public beach, public parking, and natural open space and habitat areas.

Industrial Activity

There are no industrial uses as the City does not have the ability to support traffic and site impacts that are associated with such use, unless it is of the research and development type, more closely related to office uses.

Cemetery. The unincorporated territory annexed by the City in 1983 included Green Hills Memorial Park, a 121.57-acre cemetery located at 27501 Western Avenue. Green Hills has been in operation on this site since 1948, and the oldest structures on the site were built beginning in the early 1950s. Existing uses and structures on the site include a mortuary and crematorium; administrative and consulting offices; a flower shop; a chapel; a maintenance yard; and several mausoleums, columbariums, and other interment structures.

~~Load-Induced~~ Future Commercial Activity

~~The addition of two retail activity areas is proposed in order to meet expected future retail demand. The first area would involve the opening for development of a seven-acre parcel adjacent to the Golden Cove Center. The second area is not specifically located, but would introduce a new neighborhood scale commercial center in the southeastern section of the City. As discussed above in Section LU.5.2.1, much of the existing commercial activity on the Palos Verdes Peninsula occurs outside of the City of Rancho Palos Verdes.~~ Since the adoption of the ~~City's~~ first General Plan, there has been limited, new commercial development within the City, primary as a result of the very limited amount of land designated for this purpose. This section discusses the opportunities for and constraints upon additional commercial development within the City ~~of Rancho Palos Verdes.~~

~~Expansion of Golden Cove~~

~~Site Location~~

~~The site is bounded by Golden Cove Shopping Center to the north, Hawthorne Boulevard to the east, the lower Nike Site (which is planned for a civic center) to the south, and Palos Verdes Drive West plus a church site on the north.~~

~~Proposed Site Use~~

~~In developing the General Plan, it was recognized that both the commercial center and civic center could be organized in such a manner as to create a community focal point. The use of this site adjacent to the Golden Cove Center could be handled in a way that would generate a strong tie between commercial and civic activities, while meeting future commercial demands for the City based on convenience and need. This area should be developed in a manner which is compatible with the existing facility.~~

~~Alternative Site Considerations~~

~~Residential~~

~~The site is impacted by two elements that are non-compatible with a residential use: the existence of two major arterials on the eastern and western boundaries, and existing commercial activity to the north. The ability of mitigating measures to effectively reduce these impacts is limited because of the small parcel size.~~

~~Industrial Uses~~

~~From a functional aspect, it is highly infeasible for industrial activities to take place on the site due to small parcel size and varying topographic conditions. Such activity would probably have an adverse environmental impact.~~

~~Public Uses~~

~~The adjacency of this site to the proposed civic center diminishes its value as a public activity area due to oversupply.~~

~~Site Development~~

~~It is recommended that a redesign of the existing Golden Cove Center be conducted in conjunction with development of the adjacent site, in order to create a more cohesive shopping area. Building relationships and visual character of both buildings and parking areas should be considered in the design, as well as pedestrian access and buffering from surrounding residential uses.~~

~~Proposed New Neighborhood Center~~

~~It is proposed that within the development of a Specific Plan for the coastal region study be made of the potential need for an additional commercial facility in the southeast portion of the City.~~

Retail As of 2018, no available vacant land exists within the City that will accommodate new retail development. However, in the future—given the age of many of the City's existing retail establishments—there may be opportunities for major renovations to existing retail developments, as was completed at the Golden Cove Center. One such opportunity is the City's recent efforts to improve the Western Avenue Corridor through the development of a new Western Avenue Vision

Plan, which when completed will form the foundation for a revision to the existing Western Avenue Specific Plans.

Office Space~~Additional office space would be provided for through the Golden Cove office area and development of presently vacant sites which are adjacent to the Peninsula Center. There is~~ Only one available vacant office space site of approximately 9.4 acres located off of Silver Spur Road. This site is heavily constrained by existing extreme slopes. Besides this site, there are no potential sites available to accommodate additional office space within the City. However, in the future—given the age of some of the City's existing office establishments—there may be opportunities for the renovation and remodeling of existing office developments

~~Golden Cove Office Area~~

~~It is important to note that in the expansion of Golden Cove Center some office space facilities might be added. These office space activities could develop in conjunction with the retail expansion and would, therefore, be placed under the same restraints.~~

~~Peninsula Center Area~~

~~Vacant sites oriented to Peninsula Center are proposed to develop under a light office space use. One small site on the northeast side of Silver Spur Road would be allowed to develop in a compatible scale with adjacent sites located to the west. The other area is discussed separately below, due to tis size and site conditions.~~

~~Site Location~~

~~This sloping 17-acre site lies on the north side of Silver Spur Road near Drybank Drive. Its northern boundary is defined by existing residential lots which front on Longhill Drive.~~

~~Proposed Site Use~~

~~It is intended for this site to develop into a light professional office space activity area. Access onto the site would be gained from Silver Spur Road. Due to access and site orientation, the development would relate strongly to Peninsula Center. This use should be of very light intensity due to the character of the site and to minimize traffic impacts.~~

~~Alternative Site Considerations~~

~~Residential~~

~~The site is oriented in a manner which would require a residential development to gain access from a road system which serves as the main ingress and egress route for Peninsula Center. Residential activities are considered to be a non-compatible use for this site, due to this strong interface contact between the site and Peninsula Center.~~

~~Industrial Uses~~

~~The sloping nature of the site (industrial activities require large, horizontal surfaces) and bordering residential activities make industrial activities infeasible. Such use would probably have an adverse environmental impact.~~

Public Use

The nature of the site's isolation from adjoining residential neighborhoods diminishes its value as a recreational site due to distance and access.

Site Development

The sloping nature of this site and its proximity to existing residential activity dictates the need for a site design which adequately addresses these conditions. The following list of mitigating measures could be used.

- Site development be well buffered from the existing residential neighborhood. This buffering could best be met by leaving natural land areas abutting residential lots undeveloped rather than placement of a wall along the property line.
- Structures and other site associated development be confined to areas which are adjacent to existing commercial activities and road access.
- Both parking and service areas be well hidden from the view of adjacent residential areas and Silver Spur Road
- Grading of the site be limited, with finish grading appearing to blend with the natural slope -

Both structures and landscaping not encroach on existing views enjoyed by adjacent residential activity.

Commercial Recreation

The expansion of Marineland is recognized by the General Plan, subject to Policies 5 and 7 found at the end of this section.

Recently the school district declared Abalone Cove intermediate school site as surplus. The General Plan designates this 17 acre undeveloped site to be used in a commercial recreational capacity. This decision is based largely on similar site activities which are taking place to the west and south of the site.

Additional limited scale commercial recreational uses are possible for various locations throughout the City. These include equestrian, golf, tennis, and other recreational activities, as appropriate to a particular location.

Service Stations A survey of The number of service stations in the City of Rancho Palos Verdes has decreased from ten service stations located within Rancho Palos Verdes was conducted in February 1975 to six in 2018. This survey revealed that an oversupply of these facilities exists along Crest Road and Palos Verdes Drive South in the vicinity of Marineland. None of the stations in the City appears to be over-impacted, and the Plan does not induce any new service stations. In order to ensure that the supply of automotive service stations in the City remains sufficient to provide for the needs of the City's residents, the City amended the General Plan in 1993 to adopt the Automotive Service Station Overlay Control (OC-4) District. This overlay control district is discussed in greater detail below.

Impact Controls

~~The primary focus of impact controls placed on commercial activities is to mitigate both nonconforming use situations and to reduce negative alterations in the Peninsula's environment. The following policies have been incorporated to give direction in the development and expansion of commercial facilities in order to accomplish the above aims.~~

~~Commercial~~

~~Commercial uses in particular locations are covered thoroughly in the Urban Environment Element. The Land Use Plan specifically designates 65 acres for new commercial use, plus the potential of an additional neighborhood-scale commercial center in the southeastern section of the City to be analyzed as part of the Specific Plan District. Commercial activities would comprise 1.7% of the total land area, with most of a commercial/recreational type. . While this is a very small amount of commercial use, it is based on the existence of major commercial facilities in neighboring cities and the need to preserve the character of the Peninsula.~~

~~Commercial uses tend to have environmental impacts unless small in scale and very carefully designed.~~

~~Several small existing commercial areas are not designated for commercial use in the Plan. These are scattered, poorly located, and do not contribute to good land use planning throughout the City. The locations of these commercial uses are on corner lots along the City's most predominant arterials or collector streets. Due to the length of time that these businesses have been in existence, and the community's demand for them, it is preferable that these sites should not revert to the surrounding land use, but rather that the sites should retain the flexibility to either continue the existing use or revert to the underlying land use as warranted by future economic and social conditions. It is proposed that these activities be made non-conforming and would continue until their economic life is completed.~~

4.3 Institutional

~~Institutional uses are described in the Urban Environment Element. They include public, educational, health, religious, and cultural activities. Recreational activities are generally compatible with institutional uses and are often part of such uses.~~Institutional land uses encompass public activities (primarily related to the provision of government and public safety services), educational activities (including public and private schools at all grade levels, as well as libraries) assisted living facilities, homes for the aged, and religious activities. Given the broad range of activities covered under the general heading of institutional uses, they are broadly distributed throughout the City.

The Land Use Element designates approximately 348 acres for institutional use, which makes up 4% of the City. Approximately 9.82 acres are vacant and may be proposed for new institutional use. Institutional uses include facilities for the public, educational, health, religious, and cultural activities. Recreational activities are generally compatible with institutional uses and are often part of such uses.

The major area designated for institutional use, the Crestridge Road/Indian Peak Road area, has generally moderate physical constraints and is centrally located in the Peninsula. The intent of concentrating institutional use in this area is to provide for a complex of such uses, rather than

allowing them to be located throughout the community, where they are sometimes incompatible with other uses. Within this area are the following three senior living facilities:

- Belmont Village is a 150-bed senior assisted-living facility on a 4.57-acre site at 5701 Crestridge Road. It was completed in 2003 and provides assisted living, skilled nursing, and Alzheimer's care for its residents.
- Mirandela is a 34-unit senior affordable housing apartment complex that was completed and fully occupied in 2010. It is located on a 19.63-acre site at 5555 Crestridge Road. The project was a joint venture of the City's former Redevelopment Agency and the affordable housing developer, AMCAL Multi-Housing Inc.
- Sol-y-Mar is a 60-unit age-restricted (55 years+) market-rate senior condominium complex that includes a clubhouse, resident services, three affordable housing units, and a public access trail through site. It is located on a 33.97-acre site at 5601 Crestridge Road.
- The Canterbury is a non-profit, nondenominational continuing care retirement community on a 5.2 acre lot at 5801 Crestridge Road that provides seniors independent living, assisted living, and memorial care. There are 98 independent living units and 60-bed assisted and memorial care living at the facility.

Another major area designated for institutional use is a portion of the current Point Vicente Park and Civic Center which was a former Nike missile site ~~which is proposed for~~ that was acquired from the U.S. government in 1976. Strategic planning is underway to improve the ~~a~~ civic center ~~and recreation area.~~ site with facilities that would support a City Hall, public safety, and recreation facilities and activities. ~~In considering the future development of institutional sites, environmental impacts must be mitigated through proper design.~~

The remaining areas designated for institutional use located throughout the City include the following uses: religious facilities, public and private schools, automotive repair shops, senior assisted living facilities, So Cal Edison, Cal Water offices and facilities, Palos Verdes Art Center, Mary & Joseph Retreat Center, U.S. Coast Guard station, Marymount California University, Salvation Army / Crestmont College, Fire Stations, Federally owned Radar Station, and City facilities. Most of these uses are on a single parcel with open parking areas.

Public Activities

City Facilities

The City is presently operating ~~primarily~~ as a contract city. Contracts with Los Angeles County include services for~~: sheriff, engineering, building and safety, recreation and parks, roads, and traffic~~ police and fire protection. ~~The present~~ City staff provides most other administrative and ~~planning~~ public services to the City's residents.

~~The present City Staff provides administrative and planning services. City offices are located on the Nike Missile Site under interim lease. The City's goal is to acquire this site when it is finally disposed of by the Federal Government. It is the City's intent to use the site for a civic center and parkland.~~ Since 1975, the City has acquired the old Nike missile sites for parkland (Del Cerro Park~~)~~ and the City Hall site. While the ~~Nike~~ City Hall site is not in the geographic center of the City, it has the potential for

becoming a strong focal point for the community. ~~A civic center planned in accord with the expansion of Golden Cove Center, the City's largest commercial center, and ringed by parkland, would be a good focus of the City. Other possible locations for a civic center are the upper Nike radar site near Crest and Crenshaw and the area above Peninsula Center.~~ The buildings at the City Hall site have undergone very simple and modest upgrades over the years to accommodate expanded City services that are nearing their life expectancy, ~~a City storage yard, Peninsula Seniors and Palos Verdes on the Net~~ (Figure 11, Public Facilities). Planning is underway to improve the civic center site with facilities that would support a City Hall, public safety, and recreation facilities and activitites. In the years since incorporation, the City has also acquired property for other City facilities from the County (Lower Point Vicente, Pelican Cove, Abalone Cove Park and Shoreline Park) and the Palos Verdes Peninsula Unified School District (Hesse Park, Ladera Linda Park and Grandview Park).

City Parks

The City has the following 18 public parks, improved with trails, benches, play equipment, dog park, and other amenities:

Abalone Cove Shoreline Park	Marilyn Ryan Sunset Point Park
Clovercliff Park	Martingale Trailhead Park
Del Cerro Park	Pelican Cove Park
Eastview Park/Dog Park	Point Vicente Interpretive Center
Founders Park	Point Vicente Park/Civic Center
Frank A. Vanderlip Park	Rancho Caninos Dog Park
Fred Hesse, Jr. Community Park	Rancho Palos Verdes Beach
Grandview Park	Robert E. Ryan Community Park
Ladera Linda Community Center	Vista Catalina Park

A detailed description of each park and its amenities are discussed in the Conservation and Open Space Element.

Fire Protection Facilities

~~Fire services are provided to the Peninsula, except Palos Verdes Estates, by Los Angeles County Fire District No. 5. The District has four stations, plus a limited facility at the Nike Site under sub-lease from the City.~~

~~The District's master plan indicates one additional station in the vicinity of Palos Verdes Drive South and Forrestal Drive, and relocating the Abalone Cove station to the western section of the City. The Nike Site is an excellent site for this relocation, and such a facility would be appropriate in the civic center.~~

~~The District is considering re-locating the Miraleste station.~~

Currently, the County of provides fire protection to the City through the operation of the fire stations listed in Table 2, two of which are located within the City.

Table 2
Fire Protection Facilities

Fire Station No. 53	
Address	6124 Palos Verdes Drive South, Rancho Palos Verdes
Equipment	1 Fire Engine, 3 Personnel
Fire Station No. 56	
Address	12 Crest Road West, Rolling Hills
Equipment	1 Fire Engine, 1 Patrol Unit, 4 Personnel
Fire Station No. 83	
Address	83 Miraleste Plaza, Rancho Palos Verdes
Equipment	2 Fire Engines (active and reserve), 1 Patrol, 4 Personnel
Fire Station No. 106	
Address	413 Indian Peak Road, Rolling Hills Estates
Equipment	1 Fire Engine, 1 Truck, 1 Paramedic Rescue Squad, 1 Battalion Chief, 1 Patrol, 1 Reserve Wagon, 1 Utility Vehicle, 12 Personnel

County Facilities

Aside from fire stations, ~~The~~ County of Los Angeles has no service facilities in the City. However, County-owned land within the City includes Los Verdes Country Club, ~~a fishing access, and several park sites, all of which are discussed the Recreational Activity section. The County also has~~, a portion of Friendship Park and a communications tower located south of the Peninsula Center area.

State Facilities

While, t~~T~~here are no State facilities or land in the City, the Abalone Cove contains a State Ecological Preserve with important natural marine resources at the bottom of the Portuguese Bend landslide area.

Federal Facilities

~~In addition to the upper and lower Nike Sites,~~ There are two Federal facilities in the City. These include the Point Vicente Lighthouse and Coast Guard Station (29 acres) and the United States Air Force and Federal Aviation Administration Radar Station (11 acres) on San Pedro Hill; and a WWII-area bunker and Coast Guard antenna site (4 acres) at City Hall.

Postal service~~s are headquartered in Rolling Hills Estates, with only a contract station in the Golden Cove Center. There is need for a full sub-station in the City. Good potential sites are the civic center or Golden Cove Center.~~ The City successfully petitioned the U.S. Postal Service to designated the "90275" zip code to the entire City in the early 1990s, which resulted in combining a portion of the 90274 zip code assigned to the rest of the Palos Verdes Peninsula with the portion of the 90732 zip code in San Pedro that had been assigned to the formerly unincorporated Eastview area. Postal services for the City are headquartered at the main post office in Rolling Hills Estates; there is no branch post office in the City.

Airport Facilities. There are no public or private airports or airstrips in the City.

Educational Activities

Public Schools - Palos Verdes Peninsula Unified School District The entire ~~Palos Verdes~~ Peninsula is served by the Palos Verdes Peninsula Unified School District (PVPUSD). ~~the District presently enrolls 17,626 enrolled approximately 11,839 students in 21 schools. This includes thirteen elementary, four intermediate, one continuation and opportunity high school, and three comprehensive high schools. The District has maintained an extremely high educational level. For example, for the past four years, the high school seniors have placed at the top of the Los Angeles County list on State tests in reading, language, and math, and 90% of the graduates go to college.~~ PVPUSD's reputation for having a high-quality education system attracts many families to this semi-rural area for its schools. Students of the Peninsula can attend 2 early childhood centers, 10 elementary schools, 3 intermediate schools, 2 comprehensive high schools, and 1 continuation school. PVPUSD owns no other property in the City with the exception of playing fields adjacent to the Ladera Linda Community Center site.

PVPUSD currently occupies the former site of the Malaga Cove Elementary School in the City of Palos Verdes Estates as its administrative offices. Until 2009, these offices were located at the former Valmonte Elementary School in the City of Palos Verdes Estates.

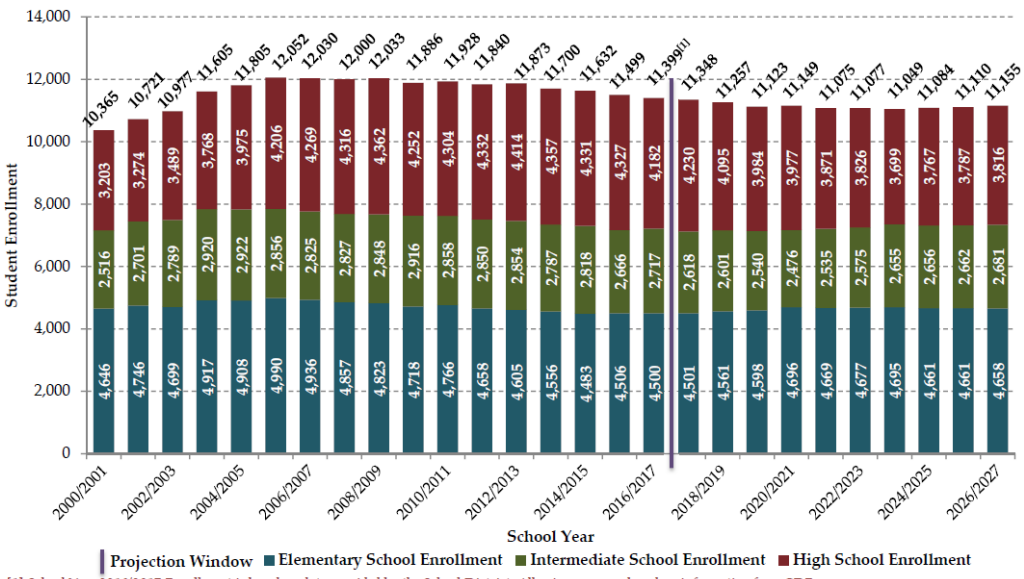
PVPUSD schools continue to be recognized for outstanding achievement at the local, state, and national level. Community and parent volunteers make significant contributions to the public schools. The Peninsula Education Foundation has been successful in raising local funds to meet and supplement classroom needs. Strong Parent-Teacher Association programs support and enrich school systems.

~~There are, within the boundaries of the City, eight elementary schools, one intermediate, and one high schools; however, attendance boundaries extend across city boundaries. The District owns three elementary and four intermediate school sites in the City. These have been declared unused by the State, and three intermediate sites have been declared surplus by the District. The City is purchasing two of these intermediate sites for parks no other property in the City with exception to playing fields adjacent to the Ladera Linda Community Center site.~~

The District PVPUSD grew most rapidly between 1955 and 1965, when fourteen of the ~~21~~ 18 schools were constructed. Enrollment later began to level off, but continued at the rate of 3% annually in the early 1970's. In the early 1980s, four elementary schools were closed due to declining enrollment. School enrollment reached a high of 17,836 in 1973–1974. There was a small "bump" in enrollment in 2005–2006, but the District's enrollment has declined over the years. As such, the demand for additional classrooms and classroom seats is not expected to increase in the foreseeable future. Below is a graph from the 2017 Enrollment Analysis for the Palos Verdes Peninsula School District. It shows the historical enrollment data from 2000 to 2017 and projected enrollment to 2027. This enrollment data is only for PVPUSD and does not include any data for private schools in the area.

ENROLLMENT PROJECTION

DISTRICTWIDE STUDENT ENROLLMENT PROJECTIONS BY SCHOOL YEAR[2]



[1] School Year 2016/2017 Enrollment is based on data provided by the School District. All prior years are based on information from CDE.
[2] Projected enrollment may not sum due to rounding.

~~With this increase and the failure of several bond elections, it was necessary for the District to acquire 115 portable classrooms. This cost comes from the operating budget. At the present time, one elementary school, Ladera Linda, is composed entirely of portable units. Point Vicente Elementary School has 39% portable class rooms , and Dapplegray Intermediate and Rolling Hills High School each 24%. While these portable units provide necessary classrooms, they overtax the fixed central facilities, such as libraries, locker rooms, eating areas, restrooms, etc.~~

~~Adding the portables has not solved the changing growth pattern problem, and the District has repeatedly re-drawn attendance boundaries. In many instances, children are required to travel rather long distances to school. The District discontinued~~ bussing service in 1964. Presently, Student bus transportation is ~~handled by a private carrier on a monthly charge to the student~~ provided by the Palos Verdes Peninsula Transit Authority, a joint powers authority serving the PVPUSD and all four cities on the Peninsula and beyond. The Transit Authority operates from PVPUSD-owned property in the City of Rolling Hills that was originally used as the district's administrative offices. ~~Consequently~~ Nevertheless, there is typically a large volume of vehicle trips ~~a large amount of automobile traffic~~ to and from all schools.

PVPUSD's ~~The District's~~ primary sources of income are property taxes and State funding. Because the Peninsula is a primarily residential community, an above-average school tax rate has been necessary. While expectations are high in this highly-educated community, and the citizens have generally supported tax increases in the past, the most recent revenue limit increase election was defeated. Consequently, the District is faced with cutting programs and other costs.

In the past, the greatest population increase ~~will~~ within the District was expected to be in ~~Rancho Palos Verdes, and~~ the City. With the adoption of the original General Plan, the residential densities previously proposed by the County were substantially reduced, particularly within the coastal portion of the City. The City's acquisition of undeveloped, open-space areas has also reduced the potential future "inventory" of new households within the District's boundaries. ~~It is concluded that, at minimum, the community is faced with continual enrollment boundary changes, t~~The City must continue to work closely with the District in planning, projections, and school needs. ~~While the Plan does not propose the densities previously proposed by the County, there will be need for either additional schools and/or expansion of existing facilities.~~

~~The conditions which currently exist at those schools which serve or might serve Rancho Palos Verdes children are indicated in Table 9.~~

~~When comparing capacities and enrollments, it is necessary to emphasize that neither the existing population nor projected population will produce a pupil population which is neatly grouped into the "proper class sizes." For example, one attendance area may not produce three classrooms of second graders, i.e. 90 pupils (3 x 30 pupils/classroom). It may produce 75 second graders, which could mean three rooms of 25 each, making the school appear under-enrolled, or two rooms of 37-1/2, overcrowding the rooms. Elementary schools are particularly prone to this phenomenon because of the greater breakdown of class type by age. One educational technique which is used to help alleviate this problem is grouping of two or more age levels. At other school levels, the problem is manifested in distribution of specialized cl as s sizes. For example, a Latin class may have only 20 pupils, while a typing class may have 70 pupils. Because of the larger numbers of pupils, however, the totals tend to even out. This is evidenced in Table 9 in the "class distribution spread factor", which indicates that elementary schools have a factor of .846 of existing theoretical capacity, intermediate .914, and high school 1.005.~~

~~The District's standards for school sizes are~~:

~~In the Long-range Comprehensive Master Plan published by the District in 1973, projections were made for classroom needs for 1974 to 1979, based on the densities then projected for the Peninsula. The need was projected for a total of 50 additional classrooms at the elementary level, four less at the intermediate level, and 22 additional at the high school level. This projection was for classrooms, in addition to using the portables which would have been moved from school to school as enrollments changed. The four new schools projected during that five year period would probably have consisted primarily of portable classrooms. A total of 49 additional classrooms was projected between 1979 and maturation (1984-85), a grand total additional classrooms of 117. The projected enrollment at maturation was 21,528.~~

~~Based on discussions with representatives of the District and the General Plan densities and projected school population, the following school needs are projected:~~

~~This projection is based on the data and compilation contained in Table 10.~~

~~The greatest impact on the schools would arise from very rapid growth. This impact can be mitigated by a slower growth rate and by very careful analysis of development proposals. Based on the residential units induced by the Plan, the following text table indicates three different growth rates and the generalized total projected need. As was indicated previously, class distribution can make actual need very different from generalized totals.~~

~~The existing schools which will be most affected by the growth induced by the Plan, as the attendance boundaries are now generally drawn, are: La Cresta, Ladera Linda, and Pt. Vicente elementary schools, Margate and Ridgecrest intermediate schools, and all of the high schools.~~

~~Another issue of significance to the public schools is the impact which could occur if large numbers of pupils were withdrawn from private schools, or private schools closed. This situation is potential concerning Marymount School. There are 150 pupils, approximately 90% of whom live in the District, who could be enrolled in the public schools. This would be a more immediate and unanticipated impact than new residential construction. The District is attempting to prepare for this potential impact.~~

~~Even when funds are available, new construction cannot be completed for two to three years. In addition, under existing State school district financing regulations, the added assessed value from new homes does not provide added revenue to the district, but simply lowers the tax rate.~~

~~Ideally, all portable classrooms would be removed, existing schools would either be restored to permanent facility capacity or permanent rooms added, and new schools would be constructed to provide the necessary space and be compatible with the "neighborhood school" objective. It appears unlikely that this ideal will be realized in the foreseeable future under present financing regulations.~~

~~School Administration Facilities~~

~~The District currently occupies a site in the City of Rolling Hills. The buildings were constructed in the early 1940's, by the Army, as temporary structures. The District has moved part of its administrative staff to an existing building on the Nike Site under a sublease from the City. . The City supports a permanent joint-use facility and proposes to share a Council/Board meeting room in the District used building on the Nike site in the City as a part of a future civic center complex.~~

Public Schools - Los Angeles Unified School District The Eastview area of the City falls within the jurisdiction of the Los Angeles Unified School District (LAUSD). LAUSD is among the largest urban school districts in the country. The Eastview area falls within LAUSD Local District 8, which serves San Pedro, Lomita, Harbor City, Wilmington, Carson, Gardena, and other nearby communities. In 2010, district-wide enrollment for LAUSD exceeded 617,000 students. Within the boundary of the City, LAUSD has two facilities: Crestwood Elementary School and Dodson Middle School.

Since 1983, the City has attempted unsuccessfully to "annex" the Eastview area of the City into the PVPUSD. As a result, property owners in the Eastview area continue to pay for property taxes, bonded indebtedness, and development fees for new construction to LAUSD. Since 1998, thanks to the help of local state legislators, citizens who reside within the LAUSD have the option to send their children to PVPUSD schools.

Private Schools The Peninsula contains several private schools: Chadwick School ~~(K-12), Creative Learning Center (K-12), Montessori de Palos Verdes (K-8),~~ Peninsula Montessori School, Rolling Hills Country Day School ~~(K-8),~~ and St. John Fisher (1-8), plus ~~thirteen~~ several nursery schools and day care centers. ~~Marymount School is presently moving to another location.~~ While the enrollment for PVPUSD is experiencing a decline and is projected to further decline over the next 10 years, the growing demand for private pre-school child care centers and nursery schools has generated a need to ~~the problem of~~ ensure~~ing~~ such facilities are adequately available in accessible locations. ~~private organizations with adequate site locations. Efforts to provide sites in conjunction with new developments and solving locational problems in existing areas will alleviate the need for this activity to locate in unsuitable areas which are not designed to adequately facilitate their needs.~~

Colleges The ~~junior~~ community college district serving the Peninsula is the Los Angeles ~~Junior~~ Community College District. The nearest ~~junior~~ community college is Los Angeles Harbor College located in Wilmington neighborhood of the City of Los Angeles. Marymount Palos Verdes College has been in Rancho Palos Verdes since 1958 and ~~It is presently moving to another location~~ offers 4-year Bachelor's degree programs. The previous Marymount campus on Hawthorne Boulevard is now occupied by Crestmont College, which is a training academy for the Salvation Army.

Libraries The Palos Verdes Library District serves the entire Peninsula with There ~~are~~ three ~~existing~~ library facilities: Malaga Cove in Palos Verdes Estates, Peninsula Center in Rolling Hills Estates, and Miraleste in Rancho Palos Verdes. These branches currently have an annual circulation of ~~1,100,000~~ 1,000,000 books, which is extremely high for the Peninsula's population. The Palos Verdes Library District has plans for improving these existing facilities, but not for additional facilities at this time. If a new facility is proposed in the future, it would be appropriate geographically, and from a population distribution point-of-view, for it to be in the southern portion of the Peninsula, in Rancho Palos Verdes. ~~One possible location would be the Nike Site, as part of the civic center of the City.~~

Religious Activities There are twenty churches and one synagogue on the Peninsula. Ten churches are based in the City; ~~seven~~ 7 have their own physical facilities. Several of these religious facilities are located along Crestridge Road, between Indian Peak Road and Crenshaw Blvd. on property designated ~~churches also have nursery schools, either their own or private using their facilities all week. The Plan designates an area~~ for religious and institutional ~~other~~ activities. ~~, centrally located, with good access, and buffered from residential neighborhoods.~~ This area~~, between Crestridge Road and Indian Peak Road,~~ is also appropriate for other united institutional, cultural, and recreational activities.

4.4 Recreational

Recreational activity areas ~~in this section~~ 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 this section briefly covers recreational activity areas. Conservation and Open Space Element provides, a detailed discussion of the available active and passive recreational activity areas in the City. Additionally, path and trail networks, systems which involve linear right-of-

way for the purpose of transportation or recreation, are addressed within the ~~Infrastructure section~~ Circulation Element. ~~The purpose of this section is to provide open space for recreational purposes.~~

Approximately 413 acres are designated for recreational use. Recreational land are held by public agencies and developed or proposed for development for active or passive recreational activity. Additional recreational land may be designated after a more specific study is made of community needs and, as new development creates an additional demand. The Municipal Code requires new development to provide parkland land.

As authorized by the Subdivision Map Act, the Municipal Code requires the dedication of parkland or the payment of in-lieu fees (known as "Quimby fees") by the developers of new residential projects. These fees are earmarked for the provision of new and/or expanded park facilities to serve the City's residents. Although the General Plan does not delineate specific additional recreational areas, it is intended that facilities may be added in conjunction with proposed developments, and through further study of existing neighborhoods. Additionally, some existing facilities may be changed to either increase or decrease their recreational opportunities.

The City has established a City-wide park acreage standard of 4 acres per 1,000 population. Based on the City's 2016 census population of 42,435 persons, this equates to a park acreage standard of 169.74 acres. Currently, the City owns and/or operates approximately 413 acres of public park facilities, which equates to roughly 9.92 acres per 1,000 population. This total does not include other publicly accessible recreational facilities such as the Palos Verdes Nature Preserve (which provides 1,400 acres of open space and passive recreation), golf courses, private recreational facilities, public school playing fields, and the property owned and managed by the Miraleste Recreation and Park District.

Dog Parks

The city opened its 1st dog park November 8, 2012. The half-acre, temporary facility is located within Point Vicente Park / Civic Center adjacent to the tennis court. It is separated into small and large dog areas and has a cedar chip surface. The park is named Rancho Caninos, and the city was granted permission by the Ruth Family to use the swinging heart cattle brand for the park logo, which is historically significant to Rancho Palos Verdes. The park has shaded areas, seating, water faucets and bowls for dogs, a restroom and hand wash station and adjacent parking. The park is also ADA accessible. The second dog park is a 9.9 acre site including a children's playground, picnic tables, walking path, permanent restroom, and an off-street parking lot at Eastview Park

~~Recreational Land Use Designations~~

~~Recreational uses designated on the Land Use Plan are those areas already held by public agencies and developed or proposed for development for active or passive recreational activity. As stated in the Urban Environment Element, Additional recreational land may be designated after more specific study is made of subcommunity needs and, as new development creates additional demand, new development will be required to provide land and/or fees to meet its share of that demand environmental impacts should be low.~~

4.5 Agricultural

~~Once the most predominant land activity on the Peninsula, agriculture has now been diminished to only a few remaining areas. A majority of these agricultural areas lie within Rancho Palos Verdes' jurisdiction, where there is strong support for its preservation as open space for the managed production of resources. The primary aim of the General Plan, in relationship to agriculture, is to evaluate existing agricultural activities and determine which of these areas is both compatible with its future surroundings and of a nature that makes it economically feasible to maintain. Existing, agriculture is of three main types: grain, special crops, and flower farming. Grain farming requires large sites in order to remain economically feasible, while specialty crops and flower farming are of a higher economic yield, which allows them to exist on smaller sites.~~

~~Agricultural Activity Areas to be Preserved~~

~~Two major areas are incorporated into the Plan; these are of a nature compatible to adjacent surroundings and of a scale which would allow them to produce profitable crops.~~

~~A portion of the Portuguese Bend slide area is the first major agricultural area. existing agricultural practices includ primarily specialty crops. This activity was considered to be one of the few compatible uses for the slide area. In order for agriculture to be completely compatible in this area, crops which require little or no water must be grown. This is to eliminate as much water intrusion as possible on the active slide area, because of water's tendency to act as a lubricating medium.~~

There are no land uses ~~The second area is not~~ designated for Agriculture. However, non-commercial agricultural use is permitted in all single-family residential and certain open space land use designations. There is one ~~on the Land Use Plan but consists of two~~ farm~~ing sites~~ located on a ~~opposite sides of Palos Verdes Drive South near Marineland Point Vicente. Both of the farms are located on~~ leased portions of City-owned Alta Vicente Reserve, which ~~sites which are used for other activities. It is felt that both areas~~ could be maintained as a visual accent~~s~~ ~~on these sites~~ without placing a major limitation on the use~~s~~ which share the site~~s~~.

~~All agricultural activities not indicated above should continue until surrounding areas have developed to their capacities. Only when these agricultural areas can no longer maintain reasonable productivity should they be converted to uses indicated by the Plan.~~

~~Agriculturally-Related Commercial Activity~~

~~There presently exist several produce and flower stands along Palos Verdes Drive South. A specific policy has been incorporated into the General Plan which is directed at upgrading and preserving this activity in concept due to its cultural significance.~~

Timberland Production Activity

The City has no land which is devoted to and used for growing and harvesting timber. Therefore, there is no designated land use category that provides for timber production.

4.6 Military Readiness Impacts

The California Military Land Use Compatibility Analyst does not identify military operations (e.g. military bases, installations, etc.) or military aviation routes and airspace over the City. However, the

United States Coast Guard is located next to the Point Vicente Interpretive Center at Lower Point Vicente. The U.S. Coast Guard often utilize the coastal cliffs at Lower Point Vicente and City Hall to conduct training exercises.

~~Utility I~~Infrastructure Facility

~~This designates~~ Approximately 21 acres are designated for infrastructure facility use. This designation includes existing public utility uses and facilities. ~~Some small facilities are not indicated because they are too specific for the General Plan. The details of utility infrastructure and potential environmental impacts are described in the Urban Environment Element.~~ Designated facilities include reservoirs and electric utility substations.

Solid and Liquid Waste Disposal Facilities

There are no existing solid and liquid waste disposal facilities within the City. However, the collection of refuse in the City is a service that is carried out by two private companies, which is described in more detail under Disposal and Recovery systems in the Circulation Element.

5 Population Projections

~~The Land Use Plan designates 1,716~~ Approximately ~~3~~399.48 acres are designated for new residential development. Table 3 ~~below~~ provides a breakdown by land use category of where new residential development is expected. ~~In addition to this acreage, there are some potential "infill areas," i.e., areas where there are larger parcels which could be divided under the density designations of this Plan. It is difficult to project this potential "infill area" population, since some parcels may never be divided, either because the owners do not desire to do so or because such division does not meet the intent of the General Plan on grounds other than density. The best estimate at this time (prior to a detailed property and land use survey) is a maximum of 100 "infill" dwelling units and 350 persons.~~

Table 3
Capacity of Residential Acreage by Density by 2030

Density Range	Developed (Acres)	Proposed (Acres)	Total (Acres)	Percent Total Residential
1 d.u./5 acres	0	25.16	25.16	0.60
≤ 1 d.u./acre	115	145.93	260.93	6.21
1–2 d.u./acre	1,262	130.87	1,438.79	34.23
1–2 d.u./acre/Hazard Area*		45.92		
2–4 d.u./acre	2,208	40.07	2,248.07	53.48
4–6 d.u./acre	44	0.48	44.48	1.06
6–12 d.u./acre	135	0.00	135.00	3.21
12–22 d.u./acre	40	1.23	41.23	0.98
Institutional	0	9.82	9.82	0.23
TOTAL	3,804	399.48	4,203.48	100.00

Notes: * This combined land use designation occurs within the active Portuguese Bend landslide area.
d.u. = dwelling unit

Although it ~~is very~~ was difficult to estimate existing dwelling units and population in the City at the time that the General Plan was originally adopted in 1975, there have subsequently been decennial

U.S. censuses in 1980, 1990, 2000 and 2010 to help further refine these estimates. Table 4 reflects the ~~1970~~ most recent U.S. census ~~included other areas than what is now incorporated as Rancho Palos Verdes, and may not have been completely accurate~~ figures and Department of Finance estimates; showing that the population in 2010 was 41,643. The table also shows that the total "build-out" population estimate is 43,570 in 2030, , which is based upon Table 5's estimate of the total number of "build-out" dwelling units being 16,935 in 2030. ~~In addition, it was not feasible to get an accurate count of building and occupancy permits issued between the Census and the date of incorporation without sorting through the individual address files of the Building and Safety Division. Beyond these difficulties, different estimating agencies use different methods. Some project on building permits issued; some on units completed. They also categorize types of units differently between single family and multifamily.~~

Table 4
Dwelling Units by Type and Total Population, 1980–2030

	Census 1980	Census 1990	Census 2000	Census 2010	Projected 2020	Projected 2030
Single-family	9,347	13,312	13,379	13,534	13,868	14,202
Multifamily	2,934	2,156	2,290	2,645	2,673	2,733
Total Units	12,281	15,468	15,669	16,179	16,541	16,935
Total Population	36,577	41,667	41,145	41,643	42,168	43,570

Most of the new dwelling units to be constructed in the City by 2030 are expected to be single-family residences, as depicted in Tables 5 and 6. The greatest increases in population are expected within areas of the City designated for development at a density of less than 4 d.u./acre, which for the most part tend to be in-fill lots

Table 5
Capacity of Residential Dwelling Units by Type by 2030

	Existing (d.u.)	Existing (%)	Proposed (d.u.)	Proposed (%)	Total (d.u.)	Total (%)
Single-Family	13,534	83.65	668	88.36	14,202	83.86
Multifamily*	2,645	16.35	88*	11.64	2,733	16.14
TOTAL	16,179	100.00	756	100.00	16,935	100.00

Notes:
* "Multifamily – Proposed (d.u.)" is defined as a density of more than 6 d.u./acre (regardless of type of ownership) as well as Institutional land uses.
d.u. = dwelling unit.

Table 6
Projected New Residential Units and Population Increase by Density Range by 2030

Density Ranges	Undeveloped Acreage	Projected Dwelling Units	Projected Additional Population**
1 d.u./5 acres	25.16	5	13
≤ 1 d.u./acre	145.93	146	372
1–2 d.u./acre	130.87	262	668
1–2 d.u./acre/ Hazard Area*	45.92	92	234

Table 6
Projected New Residential Units and Population Increase by Density Range by 2030

Density Ranges	Undeveloped Acreage	Projected Dwelling Units	Projected Additional Population**
2–4 d.u./acre	40.07	160	408
4–6 d.u./acre	0.48	3	8
6–12 d.u./acre	0.00	0	0
12–22 d.u./acre	1.23	28	71
Institutional	9.82	60	153
TOTAL	399.48	756	1,927

Notes:
* This combined land use designation occurs within the active Portuguese Bend landslide area.
** Population projections assume 2.65 persons/d.u. and 3.80% vacancy rate, based upon State Department of Finance estimates (2010).
d.u. = dwelling unit

~~The method used for estimates is the following: (1) the base is the County estimate for January 1974; (2) approximately 550 multi-family units were under construction at that time and added to the base; (3) approximately 90 single family units were under construction or have been issued permits by January 1974; and (4) the unit type was redistributed based on a factual count of multi-family. The following table reflects this methodology.~~

~~The "build-out" population estimate in January, 1974 was 39,887. Using family sizes of 3.7 persons per single-family dwelling unit and 2.0 persons per multi-family dwelling unit, the additional units have added 1,811 persons. This made a total population estimate of 41,700 in May, 1975.~~

~~Based on the projected population for the density designations of the Plan, including the "infill" areas, plus the estimate of base population, including the difficulties of estimating family size, it is appropriate to project a range of 8,000-9,000 additional population and total capacity population of 49,700–50,700.~~

~~The projected maximum capacity population of the Peninsula, based on projections of the cities and unincorporated area, is approximately 93,500.~~

~~Rancho Palos Verdes~~	~~50,700~~
~~Palos Verdes Estates~~	~~18,600~~
~~Rolling Hills~~	~~3,900~~
~~Rolling Hills Estates~~	~~10,220~~
~~Unincorporated*~~	~~10,000~~
~~TOTAL:~~	~~93,420~~

~~*Including Western Avenue area~~

~~The County estimate for its entire Statistical Area No. 23, which includes the four cities, unincorporated area, Lomita, and part of Torrance is 195,244 as of January 1974, and a projection to 1990 of 205,000. This is a projected increase of less than 10,000 persons. If this projection is accurate,~~

~~the projection for Rancho Palos Verdes may be quite high, at least for 1990 as a capacity year, since the other three Peninsula cities are projecting almost 9,000 additional persons by that time and Lomita is projecting 5,000-6,000 persons. Assuming the County projection is accurate, the various cities are allowing more housing than will be needed for the projected population by 1990.~~

6 Overlay Control Districts

The purpose of Overlay Control Districts ~~are incorporated into the General Plan in order~~ is to further reduce impacts ~~that could be induced by~~ resulting from proposed and existing developments in sensitive areas. Although the developable areas are not of an extremely critical condition which could endanger future residents (~~those~~ areas ~~possessing~~ with extreme conditions ~~were placed in~~ are restricted to open space uses), ~~it is concluded that~~ major disruptive treatment of these land areas would alter features which form the City's character and environment. ~~These features include significant natural, urban, and socio/cultural characteristics. Control districts are placed on those land areas found, through analyses in the various elements (Natural Environment Element, Socio/Cultural Element, and Urban Environment Element), to possess special features, and have been incorporated for the following reasons:~~ Overlay Control Districts perform the following functions:

- To guide developments in order to make wise and prudent use of Rancho Palos Verdes' natural environment, urban environment, and socio/cultural factors.
- To regulate the manner in which lands are urbanized and maintained in order to ensure a proper relationship between special features and urban uses.
- To enhance watershed management, ground water recharge, and water quality to ensure a continuing supply of safe water.
- To maintain and enhance land areas necessary for continued survival of valuable wildlife and vegetation habitats.
- To maintain and promote the historic and archaeological heritage of the community.
- To preserve the continued availability of significant land areas which are used for the production of food and enjoyment of scenic beauty.

The use of overlaying control districts on land areas is initiated so that more flexibility may be employed in mitigating site specific conditions. The proposed use of any one development technique, such as cluster development, is considered an ineffective way of dealing with all the varied site conditions within the City. This flexibility also allows for the City's housing supply to contain a variety of development treatments (conventional lot designs, cluster lot designs, etc.). The control districts are grouped into categories which reflect their respective elements, and detailed factors involving sub-breakdowns are presented. The location and extent of the Overlay Control Districts are depicted on the General Plan Land Use Map (Figure 1).

6.1 Control Districts Applying to Natural Factors

The Natural Design control district applies to the entire coastal zone (all properties seaward of PVDS and PVDW) and portions of low density zoning districts (RS-A-5[1], ~~-~~RS-1 [2]and RS-2[1]). ~~A detailed factor~~

[1] Single Family Residential Zoning District, 1 d.u./5 ac.
[2] Single Family Residential Zoning District, 1 d.u./1 ac.

~~by-factor delineation is presented in the Natural Environment section of this report.~~ Areas delineated within this control district ~~shall~~ are developed under the following conditions:

- Site activities shall protect, conserve, and maintain land and water areas which possess, affect, or encompass significant natural factors (such as vegetation, wildlife, minerals, and soils) whose use or recovery can best be realized by restricting and regulating the use of land.
- Site activities shall protect the function of natural and existing water courses as a part of the system for surface water collection and dispersal.
- Site activities shall maintain the quality of surface and marine water as a valuable public resource.
- Site activities shall regulate the modification of water runoff characteristics.
- Site activities shall maintain the characteristics of land areas which contribute to ground water recharge, storm water storage, silt retention, and marine water quality.
- Site activities shall regulate use, development, and alteration of land in slope areas, so that essential natural characteristics, such as land form, vegetation and wildlife communities, ground water recharge, scenic qualities, and open space can be substantially maintained.
- Site activities shall preserve unique and significant geologic, biologic, and hydrologic features of public value.
- Site activities in hill areas shall use alternative approaches to conventional flatland construction practices.

6.2 Control Districts Applying to Socio/Cultural Factors

~~Land areas within this District shall~~ The Socio-Cultural control district applies to the entire coastal zone (all properties seaward of PVDS and PVDW). The purpose of this type of overlay district is to preserve, protect, and maintain land and water areas and improvements which have significant historical, archaeological, or cultural importance to the public.

6.3 Control Districts Applying to Urban Activities

The Urban Design control district applies to the entire coastal zone (all properties seaward of PVDS and PVDW) and portions of low density zoning districts (RS-A-5, RS-1 and RS-2). This control district is established ~~in order~~ to ensure that developments conform to the following:

- Site activities shall ensure the continuing availability of land particularly suited to food and flower production.
- Site activities shall preserve, protect, conserve, and maintain land and water areas which are of significant value to the public because of their recreational, aesthetic, and scenic qualities.
- Site activities shall achieve land use concentrations that are consistent with the natural characteristics of hill areas, such as slope, land form, vegetation, and scenic quality.
- Site activities shall protect predominant view of and from slope areas in order to maintain the identity, image, and environmental quality of the City.

[1] Single Family Residential Zoning District, 2 d.u./1 ac.

6.4 Control Districts Applying to Automotive Service Uses

The Automotive Service Overlay Control District is established to preserve existing automotive commercial services, which are essential to the residents of the City. There are eight specific parcels in the City with this overlay district. Four of them are gas stations, two are automobile repair facilities, and one is a tire shop. One of the sites on Crest Road was recently developed with two single-family residences.

The development criteria for such projects shall require that the design of the project reduce adverse impacts on adjoining residential areas.

In evaluating the development criteria for such projects, the City shall consider the characteristics of the particular site and the surrounding area, and shall attempt to achieve a reasonable balance between the optimum design for the commercial automotive use and the environmental, social, and aesthetic impacts of the proposed use on the existing surrounding uses. The specific locations of the properties affected by the Automotive Service Overlay Control District are identified in the City's Zoning Code.

6.5 Control Districts Applying to the Mira Vista Neighborhood (Tract No. 16010)

Tract No. 16010 (*Mira Vista*) is the oldest subdivided neighborhood in the Eastview area of the City, which was annexed in 1983. The 215-home neighborhood was subdivided and developed just after World War II. By modern standards, the existing dwelling units are very small and often have substandard parking and setbacks.

The purpose of the *Mira Vista* Overlay Control District is to:

- Acknowledge the unique qualities of the overlay area, which is generally characterized by very small homes on small lots, with substandard or no off-street parking facilities; and,
- Allow for the modernization and enlargement of the homes in the overlay area, in a manner compatible with the unique character of the neighborhood, and with the needs and desires of current property owners.

The specific location and extent of the neighborhood affected by the Mira Vista Overlay Control District is identified in the City's Zoning Code.

6.6 Control Districts Applying to the Keeping of Large Domestic Animals

There are four (4) established Equestrian Overlay (Q) Districts in the City. They include the *Portuguese Bend* community; the residential neighborhoods along Palos Verdes Drive East between Coral Ridge Road to the south and the City of Rolling Hills Estates to the north; the residential neighborhoods along Via Campesina abutting the City of Palos Verdes Estates, including Rollingridge Road and Yellow Brick Road; and thirty-four (34) lots in the easterly portion of the *Ridgecrest* community abutting the City of Rolling Hills. These neighborhoods share a semi-rural character and are generally located adjacent to areas of the Peninsula that are served by existing equestrian trails. "Large domestic animals" include horses (and other equines), sheep (and other ovines) and goats (and other caprines), as well as cows (and other bovines).

The purpose of the Equestrian Overlay (Q) District is to:

- Allow property within the District to be used for the keeping of horses, other large domestic animals and cows, subject to all applicable requirements of the Municipal Code;

- Regulate the keeping of horses and other large domestic animals by property owners or lessees within the District, where such use is clearly accessory to the allowable use of the land, as provided for by the underlying land use designation;

- Impose reasonable regulations and standards upon animal owner so as to preserve the rights of neighbors by maintaining and controlling animals in a safe, sanitary and healthy manner at appropriate locations;

- Prohibit the creation or maintenance of any private or public nuisance related to the keeping of large domestic animals; and,

- Provide development incentives to property owners within the District to continue to provide opportunities for the future keeping of large domestic animals on privately-owned property.

7 Specific Plan Districts

The purpose of a Specific Plan District is to designate functionally interrelated geographic areas where detailed planning studies may be conducted. These studies shall provide the means for coordinating, balancing and regulating the development of property within a Specific Plan District in order to provide consistency with the goals of the General Plan.

The City of Rancho Palos Verdes has established ~~two~~ five specific plan districts, one within its coastal region (Coastal Specific Plan District) and ~~another~~ four others located in inland areas of the City (Western Avenue Specific Plan District Nos. 1, 2 and 3, and the Eastview Park Specific Plan District). The three specific plan districts along Western Avenue were consolidated into a single document in June 2001, although they remain separate districts. The procedure for establishing specific plan districts is provided for under Section 65450 of the ~~State Laws Relating to Conservation and Planning~~ Government Code. Other specific plans may also be initiated in the future and it is not necessary for them to be designated in the General Plan for the City to do so. ~~The coastal region is defined by the City boundaries at both extremities and contains the land area from the mean high tide line to Palos Verdes Drives West and South. This district has been established for the following reasons:~~

~~- Further studies of earth sciences, hydrology, and biotic resources in this region are necessary in order to more accurately assess these factors as to their specific location. These studies shall determine uses in the coastal region in order to preserve and maintain resource areas, while restricting future developments from hazardous areas.~~
~~- The regional resource importance of this area requires precise and well-defined plans for both use and specific resource value of land areas.~~

~~- Existing legislation over governmental agency powers is, at this time, undetermined and will be defined later. Due to this unsettled condition, it would be premature to allow intensive development in this region until the Coastal Commission powers and plans are more defined. It is not anticipated that final State action would necessarily be waited for.~~

~~The City will be initiating and receiving studies which supply additional input on proper treatment of the coastal region. Under State law, section 65451 defines specific plans as including:~~

~~"...detailed regulations, programs and proposed legislation which shall be necessary or convenient for the systematic implementation of each element of the general plan listed inSection 65302..."~~

~~Based on this specific plan, decisions may be reached which alter use or intensity of urban activities. Through these studies, information will be conveyed which will help to better define bluff regions and holding capacities in coastal areas. This specific plan will be completed as soon as practical.~~

~~The other area is bounded by Hawthorne Boulevard, Rancho Palos Verdes Park, and the Los Verdes Golf Course. This is a unique parcel of land which requires further study to determine its use and intensity capacity.~~

~~Other specific plans may also be initiated in the future and it is not necessary for them to be designated in the General Plan for the City to do so.~~

7.1 Coastal Specific Plan District

The Coastal Specific Plan district comprises all land seaward of Palos Verdes Drive South and Palos Verdes Drive West and is separated into three areas (in addition to the base districts) as indicated on the City's official Zoning Map: the coastal zone, the coastal structure setback zone, and the coastal setback zone. Within these zones are designated areas which development therein is nonappealable or appealable, from a City decision, to the California Coastal Commission. Appealable areas are those areas which are located between the mean high tide line and the first public road; and nonappealable areas are those areas which are located landward of the first public road to Palos Verdes Drive South and Palos Verdes Drive West. Development and uses in the Coastal Specific Plan District must conform with the City's Coastal Specific Plan and state regulations.

The Coastal Specific Plan District is divided into 8 subregions, each area sharing common characteristics using the criteria established in the General Plan. These subregions have different development patterns and varied levels of activities (i.e. residential, recreational, commercial, etc.). Each subregion has its own set of policies customized for that area.

7.2 Western Avenue Specific Plans

There are three separate Western Avenue Specific Plans covering three distinct districts, as discussed below. The City has begun efforts to improve the Western Avenue Corridor through the development of a new Western Avenue Vision Plan, which, when completed, will form the foundation for a revision to the existing Western Avenue Specific Plans.

- District No. 1: The Plan area includes The Terraces commercial center, located at the southwest corner of Caddington Drive and Western Avenue (28901 Western Avenue). The Plan strives to provide a safe, convenient, and attractive commercial development related to the needs of the area. Any project in this area should be oriented towards Western Avenue with a secondary access from Caddington Drive. A Mediterranean theme to provide identity and cohesiveness is established. Architecture, landscaping, and accessories should complement each other and be consistent with the theme. Western Avenue Specific Plan District No. 1 was adopted by the City in January 1986.
- District No. 2: The Plan area includes the southwest corner of Crestwood Street and Western Avenue, and extends southward to the City boundary near Summerland Street. The Plan area encompasses street addresses ranging from 29505 to 29701 Western Avenue, including the nonconforming, 70-unit Eastview Townhouse condominiums located at 29641 Western Avenue. The Plan strives to provide a safe, convenient, and attractive commercial development related to the needs of the area. Any project should be oriented toward Western Avenue. General use of the Summerland Street driveway is discouraged. A Mediterranean theme to provide identity and cohesiveness is established. Architecture, landscaping, and accessories should complement each other and be consistent with the theme. Western Avenue Specific Plan District No. 2 was adopted by the City in October 1986.
- District No. 3: The Plan area includes all properties that front along the west side of Western Avenue from and including 29019 to 29421 Western Avenue. It should be noted that a sliver of the parking lot and some existing freestanding signage for the Western Plaza shopping center (29105 to 29229 Western Avenue) is located outside of the City limits and is not covered by the Plan. The Plan is for retail/service commercial use. The City would like to encourage merging lots held in common ownership to encourage master plan development. Pedestrian access to the commercial use is encouraged. The Plan seeks to improve the existing access to the area and to provide for safe pedestrian, bicycle, vehicular, and transit access to the area. The Plan is directed toward protecting views of surrounding residences while minimizing adverse sensory impacts of the area through effective buffering. A Mediterranean theme is required. Western Avenue Specific Plan District No. 3 was adopted by the City in October 1987.

7.3 Eastview Park Specific Plan District

Eastview Park is a 10-acre park located at 1700 Westmont Drive. The property is owned by the Los Angeles County Sanitation Districts and provides a secure access point for the Districts' Joint Outfall System sewer lines. The City leases the property from the Districts for park purposes. With the annexation of the Eastview area in 1983, the park was designated by the City as a specific plan area. The intent of the plan is to ensure that the park is maintained and developed for passive recreational use that is compatible with the surrounding residential and commercial land~~s~~ uses, and that preserves the Districts' rights and ability to access and maintain the underground sewer lines. Eastview Park Specific Plan District was adopted by the City in November 1989.

8 Former Redevelopment Project Area

The City's Redevelopment Agency (RDA) was established in 1984 with the primary purpose of providing mitigation measures to stabilize landslides in the Abalone Cove and Portuguese Bend areas of the City. The RDA project area encompassed roughly 1,100 acres along the south-central coastline of the City, and included the Portuguese Bend and Portuguese Bend Club communities, 36 homes located at the west end of the Seaview community, the City's Abalone Cove Shoreline Park and

Portuguese Bend Reserve (a subarea of the Palos Verdes Nature Preserve), the Lloyd Wright-designed Wayfarers Chapel, and the coastal bluff-face along Sea Cove Drive in the Abalone Cove community.

The City and RDA had carried out an active and successful redevelopment program since the activation of the RDA in 1984. However, on October 1, 2011, ABX126 dissolved all existing redevelopment agencies in California, designated successor agencies as successor entities to the former redevelopment agencies, imposed numerous requirements on the successor agencies, and subjected successor agency actions to the review of oversight boards established under the new law. On January 31, 2012, the City's RDA was formally dissolved and the Successor Agency to the RDA was formed pursuant to state law.

Other than the City Council's election to retain the housing assets and function of the former RDA, which resulted in a transfer of approximately $5.5 million of assets to the City, all actions of the Successor Agency and its Oversight Board have been required by state law. The Successor Agency continues to wind down the affairs of the former RDA in accordance with state law.

9 Landslide Moratorium Area

Roughly contiguous with the former RDA project area is the City's Landslide Moratorium Area (LMA). The LMA was originally established in 1978 in response to potentially unstable soil conditions and active landslide movement. Since 1978, development activity has been strictly limited within the LMA. In 1993, a former City Geologist (Dr. Perry Ehlig) investigated the possibility of allowing development of certain areas within the boundaries of the LMA by establishing overlay zones. Dr. Ehlig divided the LMA into 8 separate zones and provided suggested guidelines for permitting development in each area based on geologic characteristics. The City considered Dr. Ehlig's findings, but decided not to proceed with establishing overlay zones.

The specific restrictions imposed within the LMA are described in the City's Landslide Moratorium Ordinance (Chapter 15.20 of the City's Municipal Code). In general, properties in the LMA that are currently developed with residential structures are permitted to make limited improvements if the City grants a Landslide Moratorium Exception (Exception). New construction is not permitted on properties in the LMA that are not currently developed with residential structures unless a Moratorium Exclusion (Exclusion) is granted, which would effectively remove the subject properties from the LMA.

In 2002, a group of Portuguese Bend property owners filed an Exclusion application to exclude their undeveloped lots within the area known as "Zone 2" from the LMA. Zone 2 is a portion of the LMA that had been designated by the late Dr. Perry Ehlig in 1993 as being potentially suitable for development. Shortly after this Exclusion application was deemed incomplete for processing, the applicants filed suit against the City. Eventually, the case (*Monks v. Rancho Palos Verdes* (2008) 167 Cal.App.4th 263) was decided in the applicants'/plaintiffs' favor in December 2008, the City being found to have taken the plaintiffs' property by virtue of preventing the development of their undeveloped lots. The City has been ordered to remove regulatory impediments in its Municipal

Code that prevent the development of the 16 *Monks* plaintiffs' lots. The City began this process with the adoption of Ordinance 498 in 2009 to allow the *Monks* plaintiffs to apply for Exceptions for their lots. The City began issuing Exception permits for these properties in 2010. At the same time, the City was considering broader revisions to the Landslide Moratorium Ordinance that could also permit the owners of the other undeveloped lots in Zone 2 to be developed with new residences. Although this discussion has been tabled at this time, if enacted, this would result in the possible future development of new residences on existing legal lots in Zone 2 within the Portuguese Bend community. Additionally, in early 2016, a code amendment was adopted, revising the Landslide Moratorium Ordinance that allows the property owners of the 94-acre Point View property and the 28-acre Plumtree property to be developed with one dwelling unit on each lot plus ancillary structures.

In addition to the consideration of new development on existing vacant lots in the LMA, there have been inquiries through the years to consider excluding certain larger undeveloped properties from the LMA to allow for future development. The City has yet to act upon a request for an Exemption.

10 Flood Hazard Areas

Government Code Section 65302(a) requires general plans for cities and counties to consider those areas covered by the plan that are subject to flooding identified by floodplain mapping prepared by FEMA (Federal Emergency Management Agency) or the Department of Water Resources. The Flood Insurance Rate Maps prepared by FEMA indicate that most of the City falls within "Zone X," which is not a designated flood hazard area. Other portions of the City fall within "Zone D," which are identified as areas where flood hazards are possible but not yet determined. Areas of the City included within "Zone D" include Lunada and Agua Amarga canyons, the Portuguese Bend and Forrestal Reserves, and other public and private properties. Much of this property is designated as Hazard Area or Open Space Preservation in the Land Use Element. Therefore, the development potential within "Zone D" is generally limited, as is the risk of the exposure of the general public to flood hazards. However, in accordance with the requirements of the Government Code, the City will annually monitor the portions of the City designated within "Zone D" for any changes in flood hazard status, as determined by FEMA. For additional information about flood hazards, see the Safety Element (Chapter 6).

11 Compatibility of Adjacent Activity Areas to ~~Rancho Palos Verdes~~

~~Urban activity areas consist of sites that have been set aside for some structured use which, either directly (primary activity areas) or indirectly (secondary activity areas) serve a function oriented toward urbanization. Primary activity areas are those sites where residential, commercial, industrial, recreational, or institutional activities take place. Secondary activity areas are those sites that are used in infrastructure activities which provide service to primary urban activity areas. Since secondary activity areas were considered to be a reflection of infrastructure, they are, therefore, included in the infrastructure section of this General Plan. The following section deals with both existing and proposed primary urban activity areas.~~

In evaluating the impacts of adjacent activity areas outside of the City ~~on Rancho Palos Verdes,~~ the major concern is compatibility of these activities with adjoining areas in the City. Compatibility is primarily reflected in use and intensity of the adjacent activities.

In the past, the main areas of concern to the City are two sections of Rolling Hills Estates which are nearly landlocked by Rancho Palos Verdes. The southernmost area (bounded by city boundaries on both the north and east, Crest Road to the south, and Hawthorne Boulevard on the west) previously contains~~ed existing condominium, scientific~~ Northrop's research and development ~~industry~~ facility, a ~~garden~~ small nursery, and large amounts of undeveloped land, a portion of which ~~is~~ was then ~~presently~~ in agricultural use. In recent years, nearly all of these sites ~~these existing activities~~ have been ~~planned and~~ developed or redeveloped, ~~in a manner which is generally compatible with surrounding activities in Rancho Palos Verdes~~ with the exception of the former nursery at the northeast corner of Crest Road and Highridge Road. ~~Rolling Hills Estates' General Plan for this area indicates that presently vacant lands will be devoted to commercial and residential activities. The proposed residential area will be developed at a density of 2 dwelling units per acre, which is a compatible intensity to adjacent Rancho Palos Verdes areas.~~ The City of Rolling Hills Estates is considering residential development on this property. The northern area consists of residential condominium developments along Highridge Road and the Peninsula Center commercial district. The ~~City's primary~~ major concern ~~about this proposed residential development will lie in the treatment of Aqua Armaga Canyon~~ here was the degree of intensity to which vacant commercial lands might develop in the future. ~~Due to the unique character of this canyon, it must be left undisturbed in order to function in its natural state, as previously described in the Natural Environment section.~~ Major new development in the Peninsula Center commercial district during the 1980s and 1990s included the construction of the (then enclosed) Peninsula Center mall, the main library for the Palos Verdes Library District and the main post office serving the ~~Palos Verdes~~ Peninsula.

~~There is a strong possibility for negative impacts from a proposed commercial center at the northeast corner of Crest Road and Hawthorne Boulevard. Such development should be reviewed carefully. Efforts to diminish impact loads generated by commercial activity need to be addressed in order that functional and aesthetic aspects of the Crest Road and Hawthorne Boulevard intersection be enhanced. The proposed use is also questioned in light of the existing commercial in Rancho Palos Verdes.~~

~~The northern area consists of a residential condominium development known as the Terraces, another condominium, and Peninsula Center. The major concern here is the degree of intensity to which vacant commercial lands might develop in the future. Peninsula Center gains most of its access through a circulation system which falls under the jurisdiction of Rancho Palos Verdes. It is important that in order to avoid negative impacts on Rancho Palos Verdes' circulation system, all proposed commercial activities in this area not only be compatible with existing supply streets but that they also mitigate potential negative impacts which could be incurred on adjacent residential areas.~~

With the annexation of the Eastview area in 1983, new development activity within San Pedro along the Western Avenue commercial corridor also became a concern to the City and its new residents. Since the mid-1990s, a primary focus of these concerns has been the reuse of the former Navy

housing facilities on Western Avenue and Palos Verdes Drive North (now known as Ponte Vista). Although the City and its residents became involved in the development of a reuse plan for these sites, the City continued to address the impacts of development in adjacent jurisdictions upon the City and its residents on an *ad hoc* basis until the early 2000s.

Beginning in 2002, the City Council began to receive regular monthly reports on so-called "border issues," which were identified as projects in surrounding jurisdictions having potential adverse effects upon the City and its residents. Typically, the City's involvement in these border issues has been to submit written and oral comments to decision makers as a part of a project's California Environmental Quality Act (CEQA) and/or entitlement process. Since 2002, the City has offered its input on a number of controversial proposals in surrounding jurisdictions, including:

- The Highpark project at the former Navy housing site on Western Avenue in San Pedro;
- A proposed County golf course to be developed on the site of the former Palos Verdes Landfill in Rolling Hills Estates;
- The proposed "Peninsula Village Overlay Zone" in Rolling Hills Estates, which would have increased the density and intensity of residential development allowed in the Peninsula Center commercial district;
- A number of proposals for the expansion of container terminals and other facilities in the Port of Los Angeles.

The City will continue to monitor development in nearby communities to ensure that adverse impacts upon the City and its residents are avoided or minimized.

11.1 Unincorporated Island, Fringe or Legacy Communities

There are no disadvantaged unincorporated fringe, island, and legacy communities that are within the City's sphere of influence. The City is surrounded by the Cities of Los Angeles, Palos Verdes Estates, Rolling Hills Estates, and Rolling Hills.

DRAFT NOISE ELEMENT
comparison to current General Plan Noise Element
4/26/2018 version

Note: This document compares the proposed Draft Noise Element with the current Noise section of the Sensory Environment Element of the General Plan. Changes are shown as follows: underline text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

~~SENSORY ENVIRONMENT~~ NOISE ELEMENT

The Noise Element is intended to identify existing and potential future sources of noise within the community; and to identify strategies to limit the exposure of the community to excessive noise levels. To set the context for this Element, its goal is as follows:

Goal

1. ~~It shall be the goal of the City of Rancho Palos Verdes,~~ Through proper land use planning and regulations, to provide for a quiet and serene residential community with a minimum of restriction on citizen activity.
2. ~~Palos Verdes Peninsula is graced with views and vistas of the surrounding Los Angeles basin and coastal region. Because of its unique geographic form and coastal resources, these views and vistas are a significant resource to residents and to many visitors, as they provide a rare means of experiencing the beauty of the peninsula and the Los Angeles region. It is the responsibility of the City to preserve these views and vistas for the public benefit and, where appropriate, the City should strive to enhance and restore these resources, the visual character of the City, and provide and maintain access for the benefit and enjoyment of the public.~~

The Noise Element continues by identifying the fundamentals of noise and its effects upon human beings. The methods for measuring existing noise levels and projecting future noise levels in the community are then discussed. From these discussions, mitigation measures are identified in the Noise Element to minimize the exposure of community residents to excessive levels of noise. Finally, the Element enumerates the Noise Policies.

Measures to Reduce Potential Construction Noise Impacts

Construction will be limited in accordance with the City's Municipal Code requirements.

The following measures can be implemented to reduce potential construction noise impacts on sensitive receptors adjacent to a project development area:

1. Use noise attenuating shields, shrouds, or portable barriers or encloses to reduce operating noise of noise producing equipment, such as jackhammers and pavement breakers.
2. Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site. Non-noise producing equipment, such as trailers, may be located as a sound barrier between the stationary noise sources and sensitive receptors.

3. Locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors during all project construction.
4. Construct a temporary sound barrier/wall. The temporary construction barriers can use particle boards or gypsum boards, with no gaps or holes in them that could potentially deteriorate the noise attenuation effect.
5. Unless safety provisions require otherwise, adjust all audible back-up alarms at the lowest volume appropriate for safety purposes.
6. Include sound-deadening material (e.g., apply wood or rubber liners to metal bin impact surfaces) to line or cover hoppers, storage bins, and chutes.
7. During demolition, construction and/or grading operations, trucks shall not park, queue and/or idle at the project site or in the adjoining street rights-of-way in accordance with the permitted hours of construction.
8. When feasible to do so, the construction contractor shall provide staging areas on-site to minimize off-site transportation of heavy construction equipment. These areas shall be located to maximize the distance between staging activities and neighboring properties.

Policies

Transportation Noise

1. Encourage ~~Contain t~~hrough traffic to existing arterials and collectors so that local roads are not used as by-passes or short-cuts in order ~~so as t~~o minimize noise.
2. Control traffic flows of heavy construction vehicles en route to and from construction sites to minimize noise.
3. Encourage the State and Federal governments to actively control and reduce vehicle noise emissions.
4. Encourage State law enforcement agencies ~~such as the California Highway Patrol~~ to vigorously enforce all laws which call for the control and/or reduction of noise emissions.

Community Noise

5. Develop an ordinance to control noise commensurate with local ambiance.
6. Maintain current and up-to-date information on noise control measures, on both fixed point and vehicular noise sources.
7. Coordinate with all public agencies, especially our adjoining ~~neighbors, who might wish to enter into a joint effort~~ jurisdictions to study and/or control noise emissions.

Land Use Planning and Noise Control

8. Mitigate impacts generated by steady state noise intrusion (e.g., with land strip buffers, landscaping, and site design).
9. Regulate land use so that there is a minimal degree of noise impact on adjacent land uses.
10. Require strict noise attenuation measures where appropriate ~~be taken in all multi-family residential units~~.
11. Review noise attenuation measures applicable to home, apartment, and office building construction, make appropriate proposals for the City zoning ordinance, and make appropriate recommendations for modifying the Los Angeles County Building Code as it applies to the City.

12. Require ~~residential uses in the 70dB(A) location range to provide regulatory~~ the minimization of noise emissions from commercial activities by screening and buffering techniques ~~or some other noise inhibiting agent to ensure compliance with the noise ordinance.~~

3 Fundamentals of Noise

~~By definition, noise is unwanted sound; however, what is unwanted sound becomes a matter of situational interpretation. The youth, listening to rock music, experiences this sound as music; however, a neighbor, trying to relax and read a book, experiences the same sound as noise.~~ ~~For~~ the purposes of this section of the General Plan, noise means any loud sound. Sound has physical properties that are not only heard but can be measured and felt. The decibel (dB) is a conventional unit for measuring the amplitude of sound, as it accounts for the large variations in sound pressure amplitude, and reflects the way people perceive changes in sound. When describing sound and its effect on humans, A-weighted (dBA) sound levels are typically used to account for the response of the human ear. The term "A-weighted" refers to a filtering of the noise signal in a manner corresponding to the way the human ear perceives sound. Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in the figure to the right.

~~Sound has physical properties which are not only heard but can be measured and felt. For the human ear, sound has two significant properties: intensity, or loudness; and frequency, or pitch. Intensity can be measured in decibels using a sound meter. The sound meter measures pressure that the sound's energy exerts. This is called acoustic energy. The frequency of the sound is measured in hertz, representing one cycle per second, and is abbreviated Hz. This frequency can be visually displayed with the aid of an oscilloscope. Unlike intensity, the frequency of any given sound source remains constant, because it is a function of the mass or density and elasticity of the vibrating object or sound source. Therefore, when one strikes an object the pitch (frequency) remains the same although the loudness or intensity will vary, depending upon how hard the object is struck.~~

~~Sound does not exist in a vacuum; its acoustic energy must have an object to strike in order to produce vibrations which are interpreted as sound. The vibration-production function of sound is one of the major reasons sound or noise controls are necessary. Sound moves in wave patterns like the ocean. The waves are alternate rings of compressed and rarefied air moving away from a control source. As the waves encounter an object, the force exerted is a push, then a pull, on the object. This is why sound can break glass or cause a window screen to vibrate.~~

~~Sound, in modest proportions, is desirable, for it reassures us that we are still alive and that there is still life around us. However, as sound intensity increases, these utilitarian functions soon become dysfunctions, and sound~~ it ~~degenerates into noise. Given the properties of sound as discussed above, too much noise is not only psychologically disturbing, but it also has the potential of doing physical harm to man and man's and the environment.~~

~~Sound (or more precisely, sound pressure) is measured in units of decibels. The ear hears or responds to these decibels on a logarithmic scale, and not at a 1-to-1 ratio. Therefore, doubling the decibel or sound pressure does not double the volume. Ten decibels is ten times more intense than 1 decibel, 20 decibels is 100 times the intensity, and 30 decibels is 1000 times the intensity. This feature~~

of the human ear allows us to hear a wide range of sound volumes. This range stretches from about 10 decibels to well above 120 decibels. However, 10dB(A) is just audible, whereas at 120dB(A) and above, the ear begins to feel pain.

The (A) in dB(A) denotes that the decibel reading was taken on the A weighting scale. The A weighting scale is recommended for use in noise elements Section 65302(g) of the California State Government Code. The A scale is generally used because, unlike the C scale—which does not discriminate sound pressure levels over various frequencies—the A scale does discriminate, and in so doing, it comes closer to approximating the audibility range of the human ear.

Effects of Noise on Man Humans

According to a report issued by the U.S. Environmental Protection Agency, impairment to the human ear begins at about 70dB(A). This 70dB(A) is tantamount in volume to freeway traffic 50 feet away, or loud conversation 2 feet away. Hearing damage occurs at 90dB(A) if this volume is sustained over several hours of the working day. Ninety dB(A) is about the same loudness as a heavy truck going past at about 50 feet away. Surprisingly enough, many kitchens have sound levels of 90dB(A) when the radio is on and pots and pans are being banged around. The following chart indicates the relative levels of noise producers and their effects.

The human ear is so constructed that we can hear or be exposed to a wide range of frequencies and intensities without damaging the delicate components of our inner ear. However, if excessively loud noises are frequent or sustained, the damage may be permanent, and such noise-induced hearing loss cannot be restored, either through surgical procedures or hearing aids.

The ear contains a chamber which is filled with tiny hair follicles. As the sound waves enter this chamber, they cause these hairs to sway back and forth, much like seaweed at the bottom of the ocean sways with the ocean currents. This swaying causes impulses to be sent to the brain, which are interpreted as sound. When a very loud sound occurs, it causes strong and violent waves; and just as seaweed gets torn from the ocean floor by turbulent currents, then sound waves can tear the hair follicles from the floor of the ear chamber, resulting in pain and hearing impairment.

There are other considerations besides the potential physical damage to the ear in assessing the effect of noise on humans. Varying degrees of noise affect man in different ways. Noise above 35-45 decibels will disturb a sleeping person; decibels between 50-60 decibels makes it difficult to carry on a quiet conversation; and with noise above 85 decibels, stress reactions can be expected. Stress reactions include such things as increased heart and pulse rates, increased adrenalin flow, and the tightening of stomach muscles. Most sudden, loud, or unexpected noises are instinctively interpreted as danger and produce these stress reactions. This occurs several times a day, but the occurrences generally go unnoticed. When one is exposed to loud noise for long periods of time, these stress reactions occur more frequently, producing both an emotional and physical strain on the body. This stress has been known to lead to increased tension, ulcers, indigestion, "heartburn," gastro-intestinal malfunctions, and heart disease.

~~A study of steelworkers indicated that those who worked in noisy environments are more aggressive, distrustful and irritable than workers in quieter environments. In addition, an even more recent study has led doctors to believe that noise affects the health of unborn children. All of these realizations suggest, that if we are to remain healthy as we continue to expand and develop our "civilization," noise must be controlled and planned for, and not just planned on.~~

4 MEASUREMENT OF NOISE WITHIN THE CITY

Pursuant to Section 65302(f) of the Government Code, a noise contour map was created to characterize the existing ambient noise environment throughout the City (Figure 1). ESA conducted 24 short-term (15-minute duration) ambient noise measurements at various residences along various roadways. Average noise levels range from 58 to 74.2 dBA L_{eq}. The dominant noise source in the City is traffic noise disseminating from the roadways. Other noise sources include yard equipment, car alarms, construction activity, emergency vehicle sirens, airplane and helicopter flyovers, and air conditioning units.

In creating the noise contour map, the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions along major arterials within City limits. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the community noise equivalent level (CNEL) values. Traffic noise would be considered low if the 70, 65, and 60 dBA CNEL contours are all confined within the roadway right-of-way; moderate if the 70 dBA CNEL contour is confined within the roadway right-of-way but the 65 and 60 dBA CNEL contours extend to beyond the right-of-way; and high if the 70, 65, and 60 dBA CNEL contours all extend beyond the roadway right-of-way. As depicted in the noise contour map (Figure 1), traffic noise along the major arterials within the City range from moderate (Highridge Road, Indian Peak Road, Miraleste Drive, Palos Verdes Drive East, Palos Verdes Drive South, Palos Verdes Drive West, Silver Spur Road, Crest Road, Crestridge Road, and a portion of Crenshaw Boulevard and Hawthorne Boulevard) to high (Hawthorne Boulevard, the majority of Crenshaw Boulevard, and Western Avenue).

5 CURRENT NOISE LEVELS IN THE CITY

In urbanized areas such as the City of Rancho Palos Verdes, the noise environment generally includes two major components: transportation noise and community noise sources. Sensitive noise receptors include residences, schools, medical facilities, and similar uses. In general, the City's residential communities are spread throughout the entire City. These sensitive land uses, along with schools, medical buildings, nursing homes, and churches, may be potentially affected by the noise associated with increased traffic on the City's major arterial roadways, as well as the construction and operation of future development projects in the community. Finally, the transmission of sound and vibration through the common walls and/or floors of condominiums, apartments, hotel rooms, and other non-detached single-family structures are critical components of the enjoyment of quiet interior environments.

The following is a discussion of the three major components of the noise environments within the City: transportation noise sources, community noise sources, and structural transmission of sound and vibration.

5.1 Transportation Noise Sources

Primary Arterials and Major Local Streets

~~Standard sections on noise sources address themselves to automobiles, trucks, motorcycles, buses, trains, and planes. Rancho Palos Verdes has no railroad lines either in or abutting the City, and there are no regularly scheduled flight paths or aircraft over the City. This is true of aircraft taking off or landing at Los Angeles International Airport, Long Beach, or Torrance airfields.~~

Transportation Noise Sources include automobiles, trucks, motorcycles, buses, trains, helicopters and planes. The predominant noise sources in the City include roadway traffic noise on major arterials, such as Hawthorne Blvd., Crenshaw Blvd., Palos Verdes Drive, Crest Road, Crestridge Road, Silver Spur Road, Western Ave., Highridge Road, Indian Peak Road, Miraleste Drive, and Montemalaga Drive. Secondary noise sources include activities related to the operation of commercial businesses in the area including loading area/delivery truck activities, trash compaction, and refuse collection. Table 3 of ESA's Noise and Vibration Study Technical Report provides the existing traffic noise levels 50 feet from the centerline of the outermost lane of 36 roadway segments with average daily traffic volumes provided in the Traffic Impact Analysis (Translutions, August 15, 2017). These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the adjacent properties. The existing land uses along certain roadways are potentially exposed to existing traffic noise levels. The effect of vehicular noise as emitted from the City's arterials and major collectors are reflected in the noise contour map (Figure 1).

Railroad and Rapid Transit Systems

The City has no passenger or freight railroad operations within or abutting the City. ~~Rancho Palos Verdes has no railroad lines either in or abutting the City.~~ Rail traffic in the Port of Los Angeles may be audible at times to residents on the east side of the City, but does not pose a substantial impediment to residents' quiet enjoyment of their property.

Rancho Palos Verdes is served by three regularly scheduled regional and sub-regional transit providers: the Los Angeles Metropolitan Transit Authority (Metro or MTA), the Palos Verdes Peninsula Transit Authority (PVPTA), and the Los Angeles Department of Transportation (LADOT). The routes and services provided by these transit agencies are discussed in detail in Chapter 4, Circulation Element. Marymount College Palos Verdes also operates shuttle buses between its Palos Verdes Drive East campus and its two off-campus housing complexes in San Pedro.

Airport Operations

There are no airport operations in the City or designated airport take-off or jet approach paths over the City. ~~This is true of aircraft taking off from or landing~~ The three airports nearest to the City are ~~at~~ Los Angeles International Airport (LAX – 8 miles), Long Beach Daugherty Field (LGB – 11 miles), ~~or~~ and Torrance Zamperini Field (TOA – 1.5 miles), ~~which are the three (3) airfields nearest to the City~~. The City is outside of the 60 dBA CNEL contours for all of the airports. However, over the years the City's residents have increasingly reported noise complaints regarding commercial and general aviation aircraft flying over and just off-shore from the Palos Verdes Peninsula. This includes commercial turbopropeller freight aircraft departing LAX for points east over the Peninsula; high altitude commercial jets departing LAX and "looping" counterclockwise around the Peninsula to head

east, but are vectored from their flight path over the Peninsula; small planes towing advertising banners; pilot training (i.e. LA County Sherriff, LAPD, Coast Guard), test flights and aerobatics; small planes carrying tourissts; WWII vintage planes; and ultralight "flying lawnmotor" aircrafts ~~high-altitude commercial jet over-flights.~~ Table 1 below summarizes average daily operations at several nearby airfields.

Table 1

Nearby Public Airfield Operations

Airfield	Average Daily Operations (Annual)			
	Total	Commercial	General Aviation	Other
Los Angeles (LAX)	1,745	89%	4%	7%
Long Beach (LGB)	808	8%	89%	3%
Torrance (TOA)	326	<1%	99%	<1%
Hawthorne (HHR)	220	0%	99%	1%
Compton (CPM)	181	0%	100%	0%
Catalina (AVX)	45	0%	86%	14%

Notes: Average daily operations based upon data reported for a 12-month period, ending November 30, 2016. "Other operations" include military aircraft and air taxi services. Source: AirNav LLC 2018.

Since 2010, the City has also been involved with issues related to helicopter routes to and from Torrance airport. In 2011, the so-called "South Crenshaw" helicopter route was approved by the Torrance City Council, based in part upon input from our City. This route avoids subjecting sensitive receptors—such as the Terranea Resort, Abalone Cove Shoreline Park and residences in the *Portuguese Bend* community—to helicopter noise.

The City is part of the LAX Community Noise Roundtable, which was created to mitigate adverse aircraft noise impacts on nearby cities. The Roundtable communicates noise impacts to the Federal Aviation Administration (FAA). The Roundtable meetings are open to the public and are held every other month.

Industrial Plants

The City does not have industrial operations in the City, including, but not limited to, railroad classification yards.

~~Rancho Palos Verdes is served (somewhat) by the Southern California Rapid Transit District (SCRTD). SCRTD has only one regular bus route in our City, Route 125. This route runs mainly along Hawthorne Boulevard on its way to and from downtown Los Angeles. This line runs four buses in the early morning and then four on the return trip in the late afternoon, beginning at 4:00 p.m. until 5:25 p.m. At no time are there more than three SCRTD buses in Rancho Palos Verdes at any one time.~~

~~Given the above, it is apparent that discussing the noise producing impact of trains, buses and planes in Rancho Palos Verdes would be unwarranted; therefore, further discussion of these issues have been omitted. It should be noted that the minimal impact of buses on noise levels in Rancho Palos Verdes will be reflected in the contour map. The effect of vehicular noise as emitted from our arterials and major collectors is also reflected in this contour map.~~

Methodology for Developing Current Noise Level Contours

Pursuant to Section 65302(g) of the California Government Code, a contour map has been prepared. There are two decibel locations delineated on the map. The first shows the 60 decibel locations measured on the A weighting scale, as emitted from the City's arterials and selected major collectors. The second contour shows the impact that these arterials and collectors have on adjacent schools and outdoor recreation areas down to 45 dB(A). The location of these two contours on the map indicates the overall effect sound emissions from our arterials and collectors have on the Rancho Palos Verdes community.

For the most part, the data used to calculate the noise contours was obtained through field investigations. Selected sites were monitored with a noise meter during the period of highest traffic volume. This period was determined based on data obtained from the 1972 and 1973 Traffic Counts, as published by the Los Angeles County Road Department Traffic and Lighting Section.

The investigator went to selected locations along the arterials and major collectors at these designated times. Beginning at curbside, with a noise meter, the investigator moved away from the street during heavy traffic flows until the needle held its position at 60 decibels on the A weighting scale. Once the 60 dB(A) location was found, the meter was monitored for approximately fifteen minutes, and each deviation over 66 dB(A) was recorded. The investigator then measured the distance between the location and curbside. The ambient noise level was also taken from this 60 dB(A) location.

The contours showing the 45 dB(A) locations, adjacent to outdoor recreation areas and schools, were calculated using the inverse square law, and based on the decibel reading taken at the 60 dB(A) location. The inverse square law is a principle concerning sound and decibel computation which states that the mean-square sound pressure changes in inverse proportion to the square of the distance from the sound source. Under this condition, the sound pressure level decreases 6 decibels for each doubling of distance from the source.

Sound behaves in very predictable ways in any given setting, but changing any element of the setting may change the way sound behaves. Some settings absorb acoustical energy, which limits the distance sound can travel; some settings (like steep grades) reflect and project acoustical energy upward, causing sound to carry farther. Since the calculations for the 45 dB(A) contours were based on the readings taken at the 60 dB(A) locations, they automatically control for the changes in acoustical settings which differed at each reading location. Therefore, even though these contours are only calculated estimates, they are more accurate than calculations which may be based only on curbside readings or projections based on average (ADT) and its percentage of trucks.

~~Projected Noise Growth~~

~~The most severe prediction relative to noise growth, made by the Environmental Protection Agency, is that the ambient noise level in our environment is increasing at the rate of 10 decibels per year. Should this dire prediction hold true, the goal of a quiet and serene community would be unobtainable.~~

~~The General Plan calls for a moderate population increase. The bulk of this increase will be reflected in low density residential development, therefore not requiring the use of heavy trucks that commercial, industrial, or other land uses might induce. Heavy trucks are a major contributor to increased noise levels in the environment.~~

~~In addition to the low density residential growth which will characterize Rancho Palos Verdes' future development, the State of California has set noise standards for diesel trucks, motorcycles, and all other motor vehicles manufactured after 1987. Diesel trucks must not exceed 70dB(A) after 1988. The State has also set a noise standard of 80dB(A) measured at 50 feet from street centerline for all other motor vehicles manufactured after 1987. These standards are more restrictive than what State law currently allows for vehicle noise emissions.~~

~~Since the State regulates noise emissions from motor vehicles, the major source of noise in Rancho Palos Verdes, the City is pre-empted from passing any laws or ordinances calling for stricter regulations or enforcement. For this reason, the City is highly dependent on the State for the control and the enforcement in this area. Therefore, the City should encourage the State Legislature and the State law enforcement agencies, such as the California Highway Patrol, to actively pursue legislation to reduce and control vehicle noise emissions and to vigorously enforce all such laws.~~

~~Active enforcement on the part of State agencies, coupled with a viable City ordinance controlling community noise will ensure that Rancho Palos Verdes' future environment will be free of abusive sound and unnecessary noise.~~

5.2 Community Noise Sources

Community noise has two basic components: steady state or constant level noise; and intermittent, single-event noise. These two types of noise affect the outdoor noise level, causing it to rise above the ambient noise level. Ambient noise is the all-encompassing noise within a given environment. Ambient noise levels range from approximately 58 to 74 dBA L_{eq} near residential properties (ESA 2017 Noise and Vibration Report).

Steady State Noise

In Rancho Palos Verdes, steady state noise would include noise generated from traffic flows ~~on major arterials~~, activities around ~~automotive~~ service stations, ~~major commercial centers~~ shopping centers, and other non-residential uses in the community. A neighbor's air conditioner or pool equipment might also be considered as contributors to steady state or quasi-steady state noise intruders.

For the most part, the impact of these steady state noise intruders can be mitigated through the use of land strip buffers, landscaping, berms and site design. These solutions would be quite effective in mitigating noise intrusion for both traffic and non-residential steady state noise generators.

Controlling noise intrusion emitted by residential steady state noise producers will require an ordinance which will prescribe setbacks and quantifiable permissible noise level limits.

Single-Event or Intermittent Noise

Although of shorter duration, the intermittent or single event noises are often more annoying than the steady state constant level noise. These include such noise as a plane flying overhead, a neighbor with ~~his~~ the stereo or television turned up too loud, barking dogs, ~~or~~ a roaring motorcycle, and special events permitted by the City.

~~In Rancho Palos Verdes, the roaring motorcycle must be the most annoying of the intermittent or single event traffic noise producers. During the noise survey which was performed in October 1974, along Rancho Palos Verdes' major collectors and arterials, the number of significant deviations which occurred at the 60 dB(A) location were recorded, noting the number of occurrences and the producer. Although motorcycles were exceeded in this category by trucks, the truck traffic is generally limited to major collectors and arterials, and their occurrence sharply diminishes at night. Unlike the trucks, motorcycles do not limit themselves to the major streets, and are operated at all hours. Because of this, their occurrence is more noticeable, hence more annoying than other intermittent vehicle noise producers.~~

~~In a source quoted in The Economic Impact of Noise prepared by the National Bureau of Standards, December 31, 1971, a table was prepared which gives a rank ordering of noise annoyances by source and income level. This table combined response for persons in Los Angeles, Boston, and New York.~~

The annoyance caused by intermittent sources is heightened because of the difficulty in controlling such noise intrusion. The intermittent nature of the noise makes the enforcement of noise control ordinances extremely difficult. Even after the development of a noise ordinance, which could set quantifiable permissible noise level limits, it can only be enforced if the enforcing official is present at the time the permissible noise level is being exceeded. ~~For these types of noise intrusions, courtesy and respect for one's neighbor is the most efficient mitigating measure that can be~~ exercised.

Although ~~we dismissed~~ the industry component of noise is ~~as being~~ inapplicable to Rancho Palos Verdes ~~in this table~~, it should be noted that noise from the construction of new homes is definitely industry related. Unlike other single event noises ~~the table includes~~, construction noises tend to be steady state noise. The operation of bulldozers, heavy trucks, and the non-rhythmic pounding of hammers present a continuous noise intrusion violating the peace, quiet, and serene nature of any community in Rancho Palos Verdes.

~~Such noise intrusions are generally dismissed as necessary and temporary, and they result in few complaints. However, once the General Plan and Zoning Ordinance are adopted and the~~

~~moratorium is lifted, Rancho Palos Verdes may experience considerable construction of new homes. This increase in construction could make industry-related noise intrusions an on-going problem.~~

The City ~~should take steps to minimize the noise impact these intrusions will make.~~ controls construction noise by setting constraints and guidelines in the building permit process. Some methods to accomplish this include: (1) Controlling hours of operation; (2) Designating the routes trucks and other construction-related vehicles are to use in traveling to and from the various project sites; and (3) In some areas, where several parcels are involved in close proximity to existing residents, temporary screening measures should be considered.

~~Solutions~~

~~*Sound Attenuation*~~

~~Mitigating the impact of noise takes five principal forms: insulation of houses and buildings along busy freeways and busy streets, screening highways with trees or walls, land use planning for property bordering on heavily traveled roads, use of easements, and adequate setbacks. Before dealing with applicability of each of these forms as they relate to noise controls in Rancho Palos Verdes, it would be well to discuss some basic characteristics of sound attenuation, since attenuation is the goal in all four forms.~~

~~The two functions most closely associated with sound attenuation are inhibiting transmission and the absorption of sounds' energy. By inhibiting the transmission of sounds' energy and/or absorbing sounds' energy at or near a material's surface, the volume of noise perceived is reduced. The reduction of perceived noise volumes by either or both functions is called attenuation. It should be noted that the material used to achieve these functions are often mutually exclusive. Materials used to inhibit transmission are not good absorbers, and materials used for absorption are virtually useless in inhibiting sound energy transmission.~~

~~In inhibiting sound energy transmission, the more dense or massive the material, the less energy will be transmitted by and through the material. For absorption, the exact opposite is generally true. Most absorption materials are quite porous and, as such, they are able to trap and absorb sounds' energy within their air pockets. Absorption materials are generally useless unless they are used in conjunction with materials capable of inhibiting sounds' energy transmission.~~

~~As a simplified example of this relationship, the exterior walls of a house serve to inhibit the transmission of sound energy from exterior sources. As the sound energy strikes the exterior walls, much of it is reflected. This reduces the amount of sound energy transmitted from the source to the interior of the house, resulting in lower perceived noise volume. If sound absorbing materials are used with the more dense exterior walls, the result is both a reduction in sound energy transmission and in the absorption of the energy which manages to penetrate the wall. The end result is a greater attenuation of noise.~~

~~These same principles apply to noise that originates from within the home as well. In this case, absorption materials are used to reduce the decibel level within a room. A good example of this attenuation process is a suspended acoustical ceiling. Without the ceiling, noise which originates in the room strikes the walls and the sound energy is reflected back into the room and bounces around~~

the walls, ceiling, and floor until it finally dissipates. This action is what causes an echo in an empty room, especially if there is no carpet on the floor.

With an acoustical ceiling, the sound energy pierces the acoustical ceiling and strikes the more massive ceiling. The sound energy is then reflected back toward the acoustical ceiling, where much of the energy is absorbed before it can re-enter the room. The result is a reduced perceived volume of noise.

Although these examples depict attenuation of sounds energy as it impacts the interior of a home or office building, these same acoustical principles apply to attenuation for the outdoor environment as well. In this instance, acoustics is the science of sound, including the generation, transmission, absorption, and effect of sound waves on sound energy.

Some cities focus their concerns toward noise attenuation as it relates to the interior of homes, offices and other buildings. In Rancho Palos Verdes, where we are blessed with large parcels of quiet and serene open spaces, we must widen our scope of noise attenuation by sharpening our efforts to preserve the calm, quiet, and peaceful nature that characterizes our present outdoor environment.

By using a combination of walls, trees, and shrubs of low height to screen major roadways (which do not obstruct scenic views), such as Hawthorne Boulevard, and high density nonresidential land usage, such as Golden Cove Center, the noise from these steady state noise generators would be attenuated by the inhibition and absorption of their sound energy.

Walls covered with, or used in conjunction with low height shrubs, can become attractive and highly functional noise attenuators. The walls reflect sound energy, inhibiting transmission, and the more porous shrubs will absorb the sound energy. The use of leafy trees along the roadways exercises these same acoustical principles, with the tree trunks, limbs, and branches inhibiting and the leaves absorbing sound energy.

The use of berms along the roadway should only happen with the most guarded concern. Berms are walls or mounds of dirt used as noise attenuators. In common use along freeways, berms are generally used to inhibit the transmission of traffic noise to homes, offices, or buildings adjacent to the highway. To this extent, berms are effective; however, this effectiveness is generally accomplished exclusively through the use of materials which inhibit sound energy transmission, but reflects the noise back downward and upward into the community. The ultimate result is an increase in the ambient noise level of the community.

In Rancho Palos Verdes, berms would have an additional negative impact in that they would direct the traffic noise upward. Given the topography of Rancho Palos Verdes, many homes are built above these roadways and would be the recipient of this reflected noise. There is also concern for preserving views from the roadway.

~~*Noise Standards*~~

~~Too often, permissible noise level limits are based on the maximum amount of noise that can be generated without eliciting complaints. Although it is useful to know what the community reaction would be to various noise levels, the standards that the City adopts should be geared toward achieving the lowest ambient noise level possible, without inhibiting the ability to hold private conversation at a reasonable distance.~~

~~For very practical reasons, permissible noise level limits should be developed in conjunction with a zoning ordinance, and they should contain a time of day component to compensate for the changes that occur in ambient noise level in the course of a 24 hour day. If Rancho Palos Verdes is to maintain its serene residential community, free of abusive sounds and unnecessary noise, it will have to adopt rather stringent noise controls.~~

Military Installations

Military installation means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense. The United States Coast Guard is located next to the Point Vicente Interpretive Center. The U.S. Coast Guard often utilize the coastal cliffs, Point Vicente Interpretative Center, and City Hall to conduct training exercises.

5.3 Sound and Vibration

Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration (e.g., construction equipment and heavy trucks). Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment (e.g., electronic equipment) . The effects of ground-borne vibration include rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction.

Aside from periodic construction work, other sources of ground-borne vibration in the City include heavy-duty vehicular travel (e.g., refuse trucks and delivery trucks) on local roadways. Truck traffic at a distance of 50 feet typically generates ground-born vibration velocity levels of approximately 63 VdB. The abbreviation "VdB" is used for vibration decibels to reduce the potential for confusion with sound decibels. These levels could reach 72 VdB where trucks pass over irregularities in the road surface. In residential areas, the background vibration velocity level is usually around 50 VdB, which is below the vibration velocity level threshold of perception for humans of approximately 65 VdB. A vibration velocity level of approximately 75 VdB is considered to be the approximately dividing line between barely perceptible and distinctly perceptible levels for many people.

Sound Transmission Control Standards in the California Administrative Code, Title 24, Building Standards, Chapter 2.5, outline noise insulation performance standards for new hotels, motels, apartment houses, and dwellings other than detached single-family units. For projects near noise sources (airports, major roads, and industrial areas), an acoustical analysis may be required to show compliance with these standards.

The Rancho Palos Verdes Development Code also establishes development standards for attached dwelling units. These standards include minimum requirements for the sound transmission class and impact insulation class of common wall and floor assemblies, as well as the appropriate insulation of plumbing fixtures and water and drainage lines within these assemblies.

6 Projected Noise Growth and Measures to Reduce Potential Noise Effects

The General Plan calls for a slight population increase though General Plan build-out. The bulk of this increase will be reflected in low-density residential development and therefore would not require the extensive and ongoing use of heavy trucks that commercial, industrial, or other land uses might induce. Heavy trucks are a major contributor to increased noise levels in the environment.

In addition to the low-density residential growth that will continue to characterize Rancho Palos Verdes' future development, the State of California has set noise standards for motor vehicles. Since the state regulates noise emissions from motor vehicles, a major source of noise in Rancho Palos Verdes, the City is pre-empted from passing any laws or ordinances that call for stricter regulations or enforcement related to vehicle noise emissions. For this reason, the City is highly dependent on the state for the control and the enforcement in this area. Therefore, the City encourages the State Legislature and the state law enforcement agencies, such as the California Highway Patrol, to actively pursue legislation to reduce and control vehicle noise emissions and to vigorously enforce all such laws.

Active enforcement on the part of state agencies and the County, coupled with a viable City ordinance controlling community noise, will ensure that Rancho Palos Verdes' future environment will be free of abusive sound and unnecessary noise.

The following is a discussion of the four major components of future noise growth within the City and the corresponding measures needed to reduce these noise effects: traffic noise impacts, construction noise impacts, steady state noise impacts, and aircraft and train noise impacts.

6.1 Traffic Noise Impacts

After General Plan build-out, future traffic noise levels along the major arterials and collector roads within the City would add 0.2 to 0.7 dBA CNEL to corresponding existing traffic noise levels along arterials and major collector roads within the City. This range of traffic noise level change is not considered significant and thus no significant growth-related traffic noise impacts would occur on existing uses throughout the City. Future (2040) roadway noise contours are shown in Figure 2. In comparison with the existing noise contour map in Figure 1, the land uses along following roadways would be potentially exposed to future traffic noise exceeding 65 dBA CNEL:

- Palos Verdes Drive East between the North City Limit and Miraleste Drive
- Miraleste Drive between Palos Verdes Drive East and Via Colinita
-

Based on the Land Use Element and Circulation Element of the General Plan, it is anticipated that development would occur on parcels along the City's major arterial roadways before General Plan build-out in 2040. To reduce potential noise impacts to these vacant parcels, one of the City's existing noise policies requires residential uses in the 70 dBA location range to provide regulatory screening or some other noise-inhibiting agent to ensure compliance with the noise ordinance.

Outdoor Active-Use Areas

The noise contour map (Figure 1) shows that the 65 dBA CNEL noise contour along arterials and major collector roads would potentially affect the outdoor active use areas such as backyards, patios, or balconies along these roads. To address these noise effects, outdoor active-use areas proposed within the

impact zone of the 65 dBA CNEL should require a sound wall to ensure that the 65 dBA CNEL exterior noise standard is not exceeded. Therefore, outdoor active-use areas, such as backyards, patios, or balconies proposed on vacant parcels that are within the 65 dBA CNEL contour may require mitigation measures, such as stand-alone sound barriers (along the property line for the backyards or along the perimeter of the patios and/or balconies), to reduce the exterior traffic noise to 65 dBA CNEL or lower. If there are substantial differences between the elevations of the noise-generating roadway segment and the private outdoor active-use areas, sound barriers are most effective when constructed at the side with higher elevation.

Interior Noise Levels

The vehicle traffic generated on roadways from the General Plan build-out can potentially impact the 45 dBA CNEL interior noise level standard. A typical, unmodified dwelling can provide 25 dB of noise level reduction for interior receptors, which is applied to the projected exterior CNEL value to estimate the projected interior CNEL. Therefore, homes exposed to exterior traffic noise levels lower than 70 dBA CNEL (45 + 25 = 70 dBA) would not have their interior noise level exceeding the 45 dBA CNEL standard with windows closed. Residential homes without any natural or manmade barriers providing shielding would be potentially exposed to traffic noise levels exceeding 70 dBA CNEL and would require mitigation measures such as building façade upgrades (double-paned windows, solid-core wood doors, etc.).

Measures to Reduce Potential Traffic Noise Impacts

Outdoor Land Uses: All outdoor active-use areas (backyard, patio, or balcony, etc.) proposed within the following distances from the roadway centerline should consider, to the extent practicable, building a wall with a minimum wall height of 5 feet to reduce the exterior noise level to 65 dBA CNEL or lower for residential or other noise-sensitive land uses:

- Crenshaw Boulevard between the North City limit and Indian Peak Road: 244 feet;
- Crenshaw Boulevard between Indian Peak Road and Crest Road: 123 feet;
- Crest Road between Ganado Drive and Northern City Limits, 173 feet;
- Crest Road between Palos Verdes Drive East and Ganado Drive, 123 feet;
- Hawthorn Boulevard between the North City Limit and Blackhorse Road: 198 feet;
- Hawthorn Boulevard between Blackhorse Road and Silver Spur Road: 189 feet;
- Hawthorn Boulevard between Silver Spur Road and Grayslake Road/Highridge Road: 269 feet;
- Hawthorn Boulevard between Grayslake Road/Highridge Road and Granvia Atlamira/Ridgegate Drive: 179 feet;
- Hawthorn Boulevard between Granvia Atlamira/Ridgegate Drive and Eddinghill Drive/Seamount Drive: 134 feet;
- Hawthorn Boulevard between Eddinghill Drive/Seamount Drive and Crest Road: 108 feet;
- Hawthorne Boulevard between Crest Road and Vallon Drive, 114 feet;
- Hawthorn Boulevard Vallon Drive and Palos Verdes Drive West: 108 feet
- Miraleste Drive between Palos Verdes Drive East and Via Colinita: 53 feet;
- Palos Verdes Drive East between north City limit and Miraleste Drive, 51 feet;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard, 85.7 feet;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South, 98.9 feet;
- Palos Verdes Drive South between Palos Verdes Drive West and Crestmont Lane/Terranea Way: 104 feet;
- Palos Verdes Drive South between Crestmont Lane/Terranea Way and Narcissa Drive: 91 feet;
- Palos Verdes Drive South between Narcissa Drive and Palos Verdes Drive East: 77 feet;
- Palos Verdes Drive South between Palos Verdes Drive East and the East City Limit: 73 feet;

- Silver Spur Road between Hawthorne Boulevard and Dry Bank Road: 153 feet;
- Western Avenue between the North City Limit and Dilasonde Drive: 256 feet;
- Western Avenue between Dilasonde Drive and Trudie Drive: 269 feet;
- Western Avenue between Trudie Drive and South City Limit: 283 feet.

Interior Noise: To meet the state's 45 dBA CNEL interior-noise standard and to achieve the indoor air-exchange ventilation requirements specified in Chapter 35 of the Uniform Building Code, all residential structures along the following roadway segments proposed within the following distances from the roadway centerline on the vacant parcels and without shielding from natural or manmade barriers should have mechanical ventilation to ensure that windows can remain closed for a prolonged period of time.

- Crenshaw Boulevard between the North City limit and Indian Peak Road: 67 feet;
- Hawthorne Boulevard between Silver Spur Road and Grayslake Road/Highridge Road: 70 feet;
- Western Avenue between the North City Limit and Dilasonde Drive: 65 feet;
- Western Avenue between Dilasonde Drive and Trudie Drive: 70 feet;
- Western Avenue between Trudie Drive and South City Limit: 74 feet.

6.2 Construction Noise Impacts

Short-term noise impacts are associated with excavation, grading, and erecting of buildings during construction. Construction-related short-term noise levels are higher than existing ambient noise levels but would cease once construction of the individual project is completed.

Two types of short-term noise impacts can occur during the construction of a project. First, construction crew commutes and the transport of construction equipment and materials to the individual construction site would incrementally increase noise levels on access roads leading to that individual site. There will be a relatively high single-event noise exposure potential at a maximum level of 87 dBA with trucks passing at 50 feet. However, the projected construction traffic will be small when compared to the existing traffic volumes on affected streets in the vicinity, and its associated long-term noise level change will not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would not be substantial.

The second type of short-term noise impact is related to noise generated during excavation, grading, and/or construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases may change the character of the noise generated on the site. Therefore, the noise levels vary as construction progresses. Average construction noise levels at various construction stages range from approximately 71 to 80 dBA L_{eq} at 100 feet and approximately 65 to 74 dBA L_{eq} at 200 feet from construction activities.

6.3 Stationary Noise Impacts

Future residents of proposed projects would generate and would be exposed to on-site noise sources typical of residential neighborhood related activities including; air conditioning units, lawn care equipment, radio/stereos systems, domestic animals, etc. These noise sources contribute to the ambient noise levels experienced in all similarly-developed areas and typically do not exceed the noise standards for the types of land uses proposed on the project site. In addition, these noise sources are consistent with the planned developments adjacent to the project site. Therefore, residential-related on-site stationary noise impacts would be less than significant.

6.4 Aircraft and Train Noise Impacts

The City has no railroad lines either in or abutting the City, and there are currently no regularly scheduled flight paths or aircraft over the City from Los Angeles International, Long Beach, and Torrance airfields. Nevertheless, to ensure continued serene living quality of the City, the City has been a member of LAX's Community Noise Roundtable since 2010. The LAX Community Noise Roundtable is a forum that provides a mechanism that attempts to ensure cooperation between the airport and local impacted communities in achieving noise impact reduction to those communities. The City is also involved with issues related to helicopter routes to and from Torrance Airport. In 2011, the "South Crenshaw" helicopter route was approved by the Torrance City Council, based in part upon input from the City. This route avoids subjecting sensitive receptors—such as the Terranea Resort, Abalone Cove Shoreline Park, and residences in the Portuguese Bend community—to helicopter noise. The City plans to continue its involvement with both the LAX Community Noise Roundtable and Torrance Airport to prevent adverse noise impacts resulting from potential changes to flight times and patterns.

DRAFT SAFETY ELEMENT
comparison to current General Plan Safety Element
4/26/2018 version

Note: This document compares the proposed Draft Safety Element with the current General Plan Safety Element. Changes are shown as follows: **bold underline** text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

X Safety Element

~~This section of the General Plan is a combination of two State mandated components: seismic safety and public safety. It provides for the identification of potential hazards and evaluation of existing safety programs. Furthermore, it makes recommendations for the improvement or establishment of safety programs in order to reduce injury, death, loss of property, and other socio-economic impacts resulting from natural and man-caused hazards.~~

~~The factors discussed in this section have been, to some degree, vital in the development of the Plan. The further intent of this section is that it will act as a comprehensive framework for future decisions.~~

~~S.1 Hazards Inventory~~

~~This section identifies and discusses potential safety hazards within the City of Rancho Palos Verdes. Much of the information used was developed in a study prepared jointly for the cities of Rancho Palos Verdes, Rolling Hills, and Rolling Hills Estates by ENVICOM, entitled Technical Data Base for Seismic Safety and Public Safety General Plan Elements (1975). More detailed information regarding fire, flood, seismic, and geologic hazards is contained in this report, which is a part of the Appendix of this Plan and is on file in the City offices.~~

The residents of the Peninsula have historically dealt with the various natural and human-induced hazards affecting the area, including earthquakes, land movements (landslide and debris flow), wildfires, and tsunamis. The increase in population on the Peninsula over the years means more people are exposed to these risks, resulting in a need to update disaster preparations, communication, and infrastructure plans.

In order to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards, the Cities of Rancho Palos Verdes and Rolling Hills Estates developed a Joint Hazards Mitigation Plan in 2004 and updated it in 2014. Hazard mitigation is defined by the Federal Emergency Management Agency (FEMA) as "any action taken to reduce or eliminate the long-term risk

to human life and property from natural hazards." The primary goal of the 2014 Joint Hazards Mitigation Plan was to create a collaborated effort among the agencies, organizations, and citizens to work toward mitigating risks from natural hazards. The mitigation plan provides a list of activities that may assist the cities in reducing risk and preventing loss from future natural hazard events. The list of activities addresses multi-hazard issues, including earthquakes, wildfires, earth movements (landslide and debris flow), and tsunamis.

Similar to the 2014 Joint Hazards Mitigation Plan, this element of the General Plan identifies hazards; assesses vulnerability; analyzes risk; and contains goals, policies, and objectives to reduce risk and prevent loss from future natural hazard events within the City of Rancho Palos Verdes (City). This Element first discusses the various hazards that may impact the City, including wildfire hazards, flood hazards, geologic hazards, and other hazards. This discussion is followed by Emergency Services available to the City in addressing these hazards, including risk assessment, leading to policies to help address these impacts.

1 Goals

1. ~~It shall be the goal of the City to~~ **P**rovide for the protection of life and property from both natural and man-made hazards within the community.
2. ~~It shall be the goal of the City to~~ **P**rovide for the protection of the public through effective law enforcement and fire protection programs **and volunteer programs such as Neighborhood Watch and the Community Emergency Response Team**.
3. ~~It shall be the goal of the City to~~ **D**evelop and enforce health and sanitation **requirements and develop** emergency communications and disaster preparedness programs to ensure the overall health and safety of all residents.
4. ~~It shall be the goal of the City to~~ **P**rotect life and property and reduce adverse economic, environmental, and social impacts resulting from any geologic activity.

2 Policies

~~It is the policy of the City to:~~

1 Promote ~~the~~ education and **safety** awareness pertaining to all hazards which affect Rancho Palos Verdes residents **and adjacent communities**.

2 Adopt and enforce building codes, ordinances, and regulations **using best practices** which ~~contain~~ **include** design and construction standards based ~~upon~~ specified **appropriate** levels of risk and hazard.

3 Encourage cooperation among adjacent communities to ensure ~~back-up~~ law enforcement ~~assistance~~ **and fire protection mutual aid** in emergency situations.

4 Cooperate with the fire protection agency and water company to ensure adequate water flow capabilities **with adequate back-up** throughout all areas of the City.

5 **Continue to** cooperate with ~~the~~ fire protection agencies ~~to determine the feasibility of~~ **in** utilizing ~~the existing helicopter "pad" at the Nike Site~~ **public facilities** for water and refueling location.

6 Develop **and implement** stringent site design and maintenance criteria for areas of high fire hazard potential **in coordination with fire protection agencies**.

7 Implement reasonable **and consistent** house numbering and ~~consistent~~ street naming systems.

8 Coordinate with the Fire Department to ~~determine the feasibility of providing~~ **provide adequate** emergency access to **all streets, including** the end points of ~~long~~ cul-de-sacs**, and along the sides of structures.**

9 Ensure that services are ~~provided to deal~~ **available to** adequately ~~with~~ **address** health and sanitation ~~problems~~ **issues**.

10 ~~Ensure~~ **Work with other jurisdictions to ensure** that local, County, State, and Federal health, safety, and sanitation laws are enforced.

11 Ensure that adequate emergency treatment and transportation facilities are available to all areas of the City.

12 ~~Promote~~ Develop~~ment~~ and maintain~~tenance of liason~~ **relationships** with various levels of health, safety, and sanitation agencies.

13 Ensure the availability of paramedic rescue **and fire suppression** services **to all areas of the City.**

~~14 Be prepared to implement contingency~~ plans **Maintain and implement a current Standard Emergency Management Systems (SEMS) Plan** to cope ~~w~~with a disaster~~s~~. major

15 ~~Maintain liason with other local, County, State, and Federal disaster agencies.~~

16 Regulate the activities, types, kinds, and number of animals and balance the interest of animal owners and persons whose welfare is affected.

17 Ensure the protection of compatible levels of wild animal populations, **which do not adversely impact humans and their domestic animals.**

18 ~~Encourage liason of~~ **Work with adjacent jurisdictions with respect to** animal regulation activities ~~with adjacent cities~~.

19 ~~Give~~ Consider~~ation to~~ alternative animal control and enforcement methods and ~~to~~ facilitate ~~for~~ shelter, medical treatment, and training **classes where needed.**

20 **Avoid or minimize the risks of flooding to new development.**

21 Evaluate whether new development should be located in flood hazard zones, and identify construction methods or other methods to minimize damage if new development is located in flood hazard zones.

22 Maintain the structural and operational integrity of essential public facilities during flooding.

23 Locate, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identify construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.

24 Establish cooperative working relationships among public agencies with responsibility for flood, fire, and climate change protection.

Climate Change Policies

Public Facilities and Developments

1. Continue to work with South Bay Cities Council of Governments to develop an Energy Efficient Climate Action Plan and a Climate Action Plan that would include strategies that consider the unique characteristics and conditions of the City.
2. Promote new energy efficient buildings and retrofit existing public facilities to be as energy efficient as feasible.
3. Continue to manage the City transportation fleet's fueling standards to achieve the greatest number of hybrid and alternative fuel vehicles.
4. Support development of publicly accessible alternative fuel infrastructure.
5. Encourage utility companies to provide informational literature about energy conservation for the public at City facilities.
6. Improve pedestrian, bicycle, and public transportation routes and amenities to serve the travel needs of residents and visitors. Where feasible, connect major destinations such as parks, open spaces, civic facilities, retail, and recreation areas with pedestrian, bicycle, and public transportation infrastructure; promote shared roadways; and require new development and redevelopment projects to provide pedestrian, bicycle, and public transportation amenities and streetscape improvements.
7. Continue to support the preservation of natural resources and open spaces throughout the City.

Private Developments

8. Continue to review development proposals for potential regional and local air quality impacts per the California Environmental Quality Act, and if potential impacts are identified, require mitigation to reduce the impact to a level that is less than significant, where technically and economically feasible.

9. **Continue to enforce Title 24 of the California Code of Regulations[1] building construction requirements and apply standards that promote energy conservation.**

10. **Continue to promote and encourage participation in the City's Voluntary Green Building Construction Program and award participating developers with a streamlined entitlement process and up to 50% rebate on permitting fees.**

11. **Continue to implement the required components of the Congestion Management Plan (CMP) and continue to work with Los Angeles County on annual updates to the CMP.[2]**

3 ~~*Fire*~~ Wildfire Hazard

~~Fires in undeveloped areas result from the ignition of accumulated brush and woody materials, and are appropriately termed "wildland fires."~~ **Wildfire hazard areas are commonly identified in regions of the wildland/urban interface, presenting a substantial hazard to life and property in communities built within or adjacent to hillsides and mountainous areas.** Such fires can burn large areas and cause ~~sig~~nificant damage to structures, and valuable watershed ~~and increased risk of mud flows. Since wildland fire hazard is an areal concern, it is mappable, and the fire hazards delineated on the "Fire Hazards Map" (ENVICOM), Figure 23, of the~~ **Ranges of the wildfire hazard are further determined by the fire ignition susceptibility resulting from natural or human conditions as well as the difficulty of fire suppression. The wildfire hazard is also magnified by several factors related to fire suppression and control such as the surrounding fuel load, weather, topography, and property characteristics.**

While the hazards are not as great in the City of Rancho Palos Verdes as those in other cities, the area does have a propensity for major fires, especially during its long, hot summers. On the other hand, several assets tend to minimize the potential number and degree of damage of these fires. The low density of the built-up areas, the quality of fire control agencies and high standards of fire prevention contribute to creating a safer community.

The following subsections describe the various wildfire hazards and protection measures within the City:

- **Wildland Fire**
- **Interface Fire**

---

[1] Title 24 of the California Code of Regulations, also titled the Energy Efficiency Standards for Residential and Nonresidential Buildings, was created and is periodically updated by the California Building Standards Commission in response to a legislative mandate to reduce California's energy consumption.

[2] A ~~Congestion Management Program~~ CMP was enacted by the State Legislature to improve traffic congestion in California's urban areas. In accordance with the state statute, the Los Angeles County Metropolitan Transportation Authority adopted and updated several CMPs. Cities are required to continue adopting an annual self-certified conformance resolution for conformance with the CMP requirements.

- **Urban Fire**
- **Other Factors Leading to Fires**
- **Fire Hazard Zone**

3.1 Wildland Fire

Wildland fires are uncontrolled, non-structure fires other than prescribed fires that occur in the wildland area. They are often considered beneficial to wildlands, as many plant species are dependent on the effects of fire for growth and reproduction. However, large wildfires often have detrimental atmospheric consequences.

The causes of wildland fires are numerous and include lightning, human carelessness, arson, and utility sparks either by transformer failure or wildlife shorting live lines. Nine out of ten wildfires are reportedly caused by some human interaction. Heat waves, droughts, and cyclical climate changes such as increased vegetation due to heavy rainy seasons such as with El Niño can also dramatically increase the risk and alter the behavior of wildfires.

The marine influence along with the local geology **on the Palos Verdes Peninsula has** ~~have~~ played significant roles in shaping the terrestrial ecology and wildfire hazards poten~~tial of the~~ Peninsula**.** Two geographical factors important in this discussion include (1) the makeup of the local soils and (2) the topography of the Peninsula. The ~~soils encounter~~ed in the Peninsula have been derived from the parent metamorphic and sedimentary materials. Soils of this type are usually very clay-like and not particularly conducive to the establishment of well-developed plant com~~munities. This, in part, explains the absence of dense, heavy strands of native vegetation encountered in other areas. The local topography can best be dosmribatddabybhillsides and canyons. This ecological condition adds to the hazards potential, as will be discussed later.~~

Development in some localities has extended into can~~yon of the study~~ area **areas** and **in some cases** has reduced the fire hazard by removing the vegeta~~t~~ion. However, it **development** has also introduced the human element into more outlying locations, **sometimes upslope from the fuel,** thus increasing the fire hazard.

Fire records maintained by the~~ Los Angeles County Fire Department between the years 1919 and 1973 indicate that large portions of the study area have been~~ subject to **California Department of Forestry and Fire Protection between the years 1932 and 2018 identify the twenty largest California** wildland fires that were 100 acres or ~~larger in area.~~ Figure 24 illustrates these locations; but more importantly, it demonstrates the lack of fire ~~PalosVerdes~~ area. This evidence indicates the study area is relatively free from recurring fire problems of major significance. **Of the 20 wildland fires, the US Geological Survey identifies 2 fires that burned more than 100 acres within the City in the past. In 2005, the San Clemente Fire burned 180 acres of the Upper Filiorum Reserve and in 2009, the Palos Verdes Fire burned approximately 234 acres of the Portuguese Bend Reserve, both of which are subareas of the Palos Verdes Nature Preserve.**

~~Fire records do not account for fires smaller than 100 acres in size, which can also cause much damage when they occur adjacent to residences structures. Several factors affect the hazard potential one can expect from a wildland fire in any given area. These factors include proximity, vegetation, wind direction, slope, and access to the area.~~

~~Accidents related to industrial activities, such as spark discharges from transmission lines and flammable leakages from pipelines in and adjacent to brush covered areas, serve to increase the potential for fire.~~

Of all the fires recorded on the Peninsula, only 1 was caused by natural events such as lightning. Most fires are caused by human influences and can vary, including children playing with matches, electrical malfunctions, transformer malfunctions, furnace malfunctions, arson, downed power lines, cigarette butts, and vehicle accidents.

3.2 Interface Fires

~~The City of Rancho Palos Verdes is located on the western edge of the largest urban complex the West Coast. While the hazards here are not as great as those in older cities, the area does have a propensity for major fires, especially during its longs, hot summers. On the other hand, several assets tend to minimize the potential number and degree of damage of these fires. The low density of the built up areas, the quality of fire control agencies, and high standards of fire prevention all contribute to making the area safer.~~

In many communities, increasing numbers of homes are being built on the urban/ wildland interface, with a growing population expanding further into the hills and mountains. Located on the Palos Verdes Peninsula, Rancho Palos Verdes **is a hillside community** contains **containing** a variety of land uses ranging from high density apartments and condominium developments to very low density hillside units. This varied landscape involves the role of fire as both a natural process and a hazard. **The increased "interface" between urban/suburban areas and the open spaces caused by expansion has produced a significant increase in threats to life and property from fires, pushing existing fire protection systems beyond their original design and capability.**

The most common conditions that cause significant interface fires include hot, dry, and windy weather; the inability of fire protection forces to gain access to the burn areas, and to contain or suppress the fire; the occurrence of multiple fires that overwhelm committed resources; large fuel loads (dense vegetation); and homeowners not complying with brush clearance requirements. Additionally, human activities increase the incidence of fire ignition and potential damage. Of the local fires in Palos Verdes, 90% have resulted from human activities near the interface of wildland areas and urban locations. Once a fire has ignited, fuel topography, weather, drought, and development may influence its behavior.

3.3 Urban Fire

~~Fire has long been recognized as an especially dangerous threat in urban areas. As the population concentrates in increasingly built up areas, the factors necessary for fire ignition increase, as do the chances of a fire spreading rapidly once it starts. These same factors of population, materials; and energy concentrations in cities mean that loss of life, injury, and property damage from fire are greater in urban areas as well.~~

~~The most significant factor determining overall fire risk is human proximity. The human element is often essential in the ignition of major brush fires, as evidenced by the abundance and frequency of burns in the vicinity of residential neighborhoods. The most important contributor to this factor of fire hazard appears to be the unsupervised activities of children playing with matches or lighters.~~ Urban fires usually result from sources within the structures themselves. Smoking in bed, faulty wiring, children playing with matches, and appliance malfunctions ~~are~~ often causes fo**r** **of** structural fire**s**. **Additionally,** cinders from wood-burning fireplaces that remain alive and travel considerable distances have ~~also been~~ blamed for fire-starts **starting fires** near~~ residential locations; but fully 90% of the local fires in Palos Verdes have resulted from human activities near the interface of wildland. Fire hazard suburban this type are related to specific sites and structures, and do not lend themselves to an area based fire hazard zo~~ning.

Buildings with open stairwells, substandard electrical wiring, **improper storage** or faulty heating systems are considered ~~to be~~ hazardous. Upon ignition, ~~the~~ **a** fire **will** spread~~s~~ rapidly through ~~the~~ **a** building. A common example of a fire hazardous building ~~are~~ **is** older, multi-story structures. **However,** there are ~~however,~~ no major clusters of this ~~kind~~ **type** of building in Rancho Palos Verdes. Single-family detached houses form the major portion of the housing stock in the area.

~~Fires occur more frequently in private homes for a variety of causes, with human carelessness chief among them.~~ More lives are lost in residential fires than in any other types of fire. One particularly dangerous hazard in residential fires is the use of untreated wood shingles for roof construction. Windy conditions could spread the fire to a large number of other houses where this type of roof is common. Another concern to fire fighters has been identified as the response time to certain residential areas within the City. This is particularly true in neighborhoods with long cul-de-sacs (in excess of 700 ft.) and in areas with limited ingress/egress points (Schneider). ~~Buildings over five stories pose difficult fire control problems. The large number of occupants and their dependence on internal support systems, such as water pressure systems, ventilation systems, and elevator systems, increase the potential for disaster. Adequate response to high rise fires requires special equipment, such as helicopters and aerial ladders.~~

Public assembly facilities are defined as those in which large numbers of people congregate in generally unfamiliar surroundings. They include schools, theaters, churches, temples and a variety of recreational facilities. There are a number of these buildings in the City, including several schools. Gathering of large numbers of people in these buildings create conditions

conducive to mass panic in a crisis, which only worsens and increases the casualties. Administering medical aid is made more difficult in these situations as well.

Potentially hazardous industrial operations encountered in the Rancho Palos Verdes area include utility lines, such as gas lines and overhead electrical power lines. While the normal construction of utility lines provides a good degree of safety, breaks in gas lines and falling power lines may cause fires. They should not be overlooked as fire hazards. This is particularly true in the Portuguese Bend slide area.

Secondary Effects. A result of both wild fires and urban fires (adjacent to canyons) is the partial or total depletion of a much needed vegetation, which, in turn, may result in potential erosion (mudflow) **and/or dangerous mudflows** hazards. Furthermore, in areas with chaparral, a chemical condition known as the hydrophobic effect causes soil to become relatively impermeable to water, and thereby reduces water corrosion **absorption and increases runoff.** However, **"…if a** slope is burned over by fire of intense heat, the near surface zone is purged of hydrophobic compounds. The vaporized compounds condense in a cooler zone just below the surface. Rainfall could then penetrate the surface layer and reduce its shear strength. Any excess water would migrate **travel** down slope just above the impervious layer, carrying away the weakened material as a debris flow. **(California Geologic Survey Note 33, 2007).** See the Flood Hazard section for further discussion.

3.4 Other Factors Leading to Fires

Human Proximity. Human proximity also tends to increase the activity of off-road vehicles, such as motorcycles and minibikes, into in nearby open areas. This activity is becoming an ever-increasing source of brush-fires, as the trend accelerates toward such recreational pursuits.

Accidents related to industrial activities such as spark discharges from transmission lines and flammable leakages from pipelines in and adjacent to brush covered areas, serve to increase the potential for fire.

Vegetation. The density and distribution of vegetation can define the overall hazard of fire and its intensity in a particular area and the intensity of fire which ensues. The vegetation of an area determines the fuel and spreading potential, while helping to identify the recurrence intervals one can anticipate between outbreaks of fire. In the Palos Verdes area, four major plant communities determine the various fuel potentials of the area: Chamise Chaparral, Coastal Chaparral, Coastal Sage Scrub, **Riparian,** and types of Woodland-grass.

Fuel: Fuel feeds a fire and is a key factor in wildlife behavior. Diverse fuels in the landscape, such as natural vegetation, manmade structures, and combustible materials help understand the risk of fire. For example, a house surrounded by brushy growth rather than cleared space allows for greater continuity of fuel and increases the fire's ability to spread.

Fuel is classified by volume ("fuel loading", or the amount of available vegetative fuel) and by type. The type of fuel, along with moisture content, can greatly influence the dynamics of wildlife. Chaparral is a primary fuel of Southern California wildfires. Chaparral communities experience long dry summers and receive most of their annual precipitation from winter rains. Fire has been important in the life cycle of chaparral communities, which have evolved to a point it requires fire for spawn regeneration. In general, chaparral community plants have adapted to fire through fire induced flowering; bud production and sprouting subsequent to fire; in-soil seed storage and fire stimulated germination; and on plant seed storage and fire stimulated dispersal.

Weather. ~~Wind direction and strength rivals human proximity and vegetation as being the most significant factor affecting fire hazard.~~ **Weather patterns combined with certain geographic locations can create a favorable climate for wildfire activity. Areas where annual precipitation is less than 30" per year are extremely susceptible. High-risk areas in Southern California share a hot, dry season in late summer and early fall when high temperatures and low humidity favor fire activity.** Although the Peninsula has a predominant westerly breeze flow, the bulk of the local fire outbreak~~s tend to accompany the warm, dry easterly wind~~ conditions commonly termed "Santa Ana" **winds, which are heated by compression as they flow down to Southern California from Utah, creating a particularly high risk, as they can rapidly spread what might otherwise be a small fire.** Therefore, those areas that lie to the west of potential ignition points or fire sources become even more hazardous. The Santa Ana wind system occurs in the **drier** fall season, and for residents of Southern California, the season of the Santa Ana **winds is** synonymous with fire danger.

Drought: The potential effects of climate change, particularly drought, are contributing to concerns about wildfire vulnerability. The term drought is applied to a period in which an unusual scarcity of rain causes a serious hydrological imbalance. Unusually dry winters, or significantly less rainfall than normal, can lead to relatively drier conditions and leave reservoirs and water tables lower. Drought leads to problems with irrigation and may contribute to additional fires or additional difficulties in fighting fires.

Access. Access is ~~the~~ **a fire hazard factor** that describes the relative difficulty of delivering both equipment and personnel to a fire. Containment being a key objective, those areas of limited accessibility have a greater potential for fire-spreading than the more accessible locations.

In the Palos Verdes area, the factor controlling access is slope. The ~~amount~~ **degree** of slope in a ~~fire~~ burn area can determine the type of heavy equipment and strategy that can be used. ~~The Los Angeles County Fire Department has developed the following basic slope classifications they relate to accessibility:~~

~~Extreme – 40+%~~
~~High – 20 – 40%~~
~~Medium – 10 – 20%~~

~~Low – 0 – 10%~~

Topography. ~~The fourth major factor is slope. In this usage, slope relates to the presence of steep canyons and hillsides which characteristically demonstrate propensities fire.~~ **Topography influences the movement of the air, thereby directing a fire course. For example, if the percentage of uphill slope doubles, the rate of spread in wildfire will likely double.** ~~Local topography~~ **Gulches and canyons** can funnel ~~winds and create significant drafts that greatly add to the uncontrollability of wild~~fire **air and act as chimneys, intensifying fire behavior and causing the fire to spread faster. Solar heating of dry, south-facing slopes produces up slope drafts that can complicate fire behavior.** Entire canyons have been engulfed in flames from the superheated conditions resulting from the combination of fire and wind drafts.

~~**Fire Risk Zones.** The fire risk zones shown on the Fire Hazards represent a compilation of data regarding the primary factors of human proximity, vegetation, wind direction, access. These factors are ranked in importance roughly the same order as presented. However, fire risk analysis treats each factor as a mutually exclusive variable. Human proximity might be "more important" than slope on a general level, but conditions exist where the degree of slope could become the predominant factor in the risk determination process. Therefore, each factor can vary in relative importance, depending upon the specific conditions and characteristics of the area. The following area profiles exemplify the types of conditions expected to be found in each zone.~~

~~The fire risk zones portrayed on the Fire Hazards Map represent a general assimilation of the data categories being considered. They are not meant to be precise or specific alignments, but instead tools that delineate fire propensities. Urban site conditions are too detailed to be considered or shown at the scale of the maps used in this study. Therefore, certain areas within the "low hazard" zone may be highly hazardous, and care should be exercised to avoid fire. Conversely, site conditions in areas within high fire "hazard" zones might preclude the possibility of fire, thus preempting the need for more stringent fire controls. In both cases, strict attention must be paid to both on site and adjacent conditions.~~

3.5 Fire Hazard Zone

In 2008, the California Department of Forestry and Fire Protection, together with input from the local Los Angeles County Fire Stations, updated the City's Fire Hazard Severity Zone Map (Figure 1, Fire Hazard Severity Zone), indicating that the entire City, excluding portions of the City located east of Western Avenue (approximately 98 acres involving 322 single-family and 123 multifamily units) is classified as a Very High Fire Hazard Severity Zone. Planned development within the Very High Fire Hazard Severity Zones are required to comply with the California Fire Code and obtain Fire Department approval for provision of adequate emergency access, sprinklers, distance between buildings, etc.

Pursuant to the State Government Code, properties located within a Very High Fire Hazard Severity Zone must maintain certain defensible space through specific fuel modification (brush clearing) requirements. These fuel modification requirements are enforced wholly by the Los Angeles County Fire Department. Furthermore, property owners located within a Very High Fire Hazard Severity Zone must disclose that their property is located within such a zone at the time of sale. These requirements have been in place since the original State Government Code dealing with Very High Fire Hazard Severity Zones was adopted in 1995.

4 Flood Hazard

In general, three ~~separate and~~ distinct types of flood inundation hazards are known to exist**: flood inundation, dam inundation, and debris flows.** Flood inundation hazards are those associated with major atmospheric events that result in the inundation of developed areas, due to overflows of nearby stream-courses or inadequac~~ies~~ **of** in local storm drain facilities. **While none in the** ~~—~~**City,** dDam inundation hazards are those associated with the downstream inundation that would occur given a major structural failure in a nearby impoundment. Such failures would most likely be caused by ge~~ologic phenomena~~ including seismic events and slope instability **or seismic failure.**

Another inundation hazard relative to Palos Verdes is debris flows that can occur during the rainy season **and, in addition to impacting structures and roadways, can have an adverse effect on sensitive inter-tidal areas along the coastline. Flooding and debris flows can occur during storm events. These flows can occur in and below the areas denuded of vegetation and altered topsoil. The extent and amount of flows will depend on the rainfall intensity and duration of the storm event. These flows can be highly destructive and move large quantities of soil, rocks, brush, and trees into neighborhoods, causing property damage, blocking streets, and endangering properties. For areas with denuded vegetation as a result of a fire, it can take about 4 to 5 years for vegetation to significantly recover, and about 10 years to fully recover.**

~~Natural Flooding~~. The location of the Palos Verdes Peninsula helps insulate the City from most aspects of flood hazard. The City is not located near any major streamway, and large scale inundations related to over-flow are not expected to occur. **In the past, there have been only two occasions when the City declared a local flood-related emergency, both of which related to earth movement caused by excessive rain during severe weather conditions. On March 8, 1979, the City experienced earth movement resulting from heavy and unusual rains, and again on January 17, 1995 due to El Niño rainstorms that caused flooding and sliding throughout the community. In recent years, the City has taken a proactive approach in addressing flood**

hazards such as adopting the floodplain management ordinance in 2006. The floodplain management ordinance has enabled the City to take part in the National Flood Insurance Program that provides property owners within flood-prone areas to qualify for federally subsidized flood insurance protection and the City to receive funding for flood mitigation projects.

FEMA identifies the Lunada and Agua Amarga Canyons, Portuguese Bend and Forrestal Nature Reserves, and other public and private properties as flood zone category D (Figure 2, Potential Flood and Inundation Maps). Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. Flood zone D is defined as areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted in these areas and therefore these areas are designated as undetermined risk areas.

Although the chances of a flood hazard are minimal, as identified by FEMA, ~~However,~~ a definite flooding problem does exist in the form of temporary flash floods related to heavy winter rains. Most of this flash flood activity is isolated along the canyons, the floors of which provide the runoff channels for the hilly, steep terrain. The amount of runoff during a storm is increased by the high runoff characteristic of the local soils. Most flash flood conditions in Palos Verdes are short-lived in nature, due to the limited size of the available watershed, and the damage resulting from flash floods is more erosive than inundative in nature. However, substantial damage can occur if developments encroach into the canyon bottoms **or where roadways are too close to canyons as with San Ramon Canyon.**

~~The Flood Hazards Map (Figure 25) has delineated the major drainage tributaries that exist in the Rancho Palos Verdes area. These canyon bottoms are potential flood hazards, given a heavy rainfall episode.~~

~~Certain canyons within the City are more "flood prone." These are: Aqua Armaga, Altamira, and Georgeffe Canyons. Flood control facilities have been considered for these canyon locations; however, both the economic and environmental expenses involved for protective measure must be jusitified. (See Flood Control section of Infrastructure)~~

~~Storm drain facilities constructed in the higher density areas of the Peninsula provide adequate protection against flash flooding. Standing water problems in the urban areas are not common; however, the area has not yet been systematically studied by the U.S. Department of Housing and Urban Development Flood Insurance Study program. Such an investigation, when completed, might show the existence of potential flood zones resulting from standing water.~~

Much of the area in flood zone D is designated as Hazard Area or Open Space Preserve in the Land Use Element. Therefore, the development potential within flood zone D is generally limited. However, a few vacant residential lots remain that may be developed in the future.

Prior to development, these lots will be subject to the City's development guidelines; geotechnical review; and/or compliance with current California Building Codes related to anchoring, building materials, construction methods and practices to minimize, resist, and prevent flood damage.

US Army Corps of Engineers: Under Flood Control and Coastal Emergency Act, the US Army Corps of Engineers (USACE) provides disaster preparedness and response services and advanced planning measures designed to reduce the amount of damage caused by an impending disaster. The Los Angeles District, which the City is part of, is one of four District offices in the South Pacific Division that includes 222,000 square miles area, including 420 miles of coastline, 14 harbors, and the highest, lowest, and hottest spots in the contiguous 48 states. When disasters occur, it is not just a local USACE district or office that responds. Personnel and other resources are mobilized across the country to carry out response missions.

Water Storage Facility Failure

Palos Verdes Reservoir is the largest water impoundment ~~encountered in the study area is Palos Verdes Reservoir,~~ owned by the Metropolitan Water District **in the Peninsula~~, and~~** located near Palos Verdes **Drive** ~~North~~ East in the City of Rolling Hills Estates. Palos Verdes Reservoir is an earth-fill type facility that has a surface area of 27 acres and a maximum storage capacity of 1,100 acre feet. This compacted-fill dam was constructed in 1939 to the engineering specifications of the period. The relative effects of earthquake shaking on the reservoir have not been determi~~ned. The damage which might take place due to major structural failure would probably occur in the San Pedro area to t~~he east.

~~Thirteen other~~ **There are twelve other** water impoundments ~~of smaller size~~ located throughout the Peninsula **(City of Rancho Palos Verdes, Rolling Hills, and Rolling Hills Estates) as shown on Figure 18 – Potential Flood (Source: California Water Service Co. Palos Verdes District)** ~~the locations of which appear on the Flood Hazards Map~~**.** These facilities are either above- or below-ground water tanks of lesser capacity than Palos Verdes Reservoir. Although such facilities are smaller in capacity than Palos Verdes Reservoir, they could present locally hazardous inundation situations if they were to fail.

~~Hazardous geologic phenomena, particularly landsliding, is most likely to be the caustive agent behind the structural failures of water impoundments that may occur in the Palos Verdes area. The following table describes the locations of the various facilities as to seismic zones and landslide hazards to which they are exposed.~~

Each of the water storage facilities may be subject to severe ground shaking, given a major seismic event on the San Andreas~~, or~~ Newport-Inglewood **or Palos Verdes faults.** The ability of the water storage facilities to withstand the anticipated ground shaking is not **correctly** ~~known and deserve further investigation by certified structural engineering p~~ersonnel. **Other hazardous geologic phenomena, particularly landslides are most likely to be the cause of the**

structural failures of water impoundments. Seven water storage facilities could be adversely impacted by landsliding activity ~~landslides. Water storage facilities found to be subject to further landsliding are quite hazardous and deserve on-site investigation by a qualified engineering geologist.~~ **Fortunately none of the existing active reservoirs are located within the City-designated landslide areas.**

In general, the direct threat to public safety resulting from inundation will not be great, with the possible exception of Palos Verdes Reservoir. However, other results indirectly related to inundation could be quite severe, including the shortage of water for both domestic and fire prevention uses. Shortages of that nature could be extremely critical in a real disaster situation. Especially, in consideration of both domestic water and firefighting needs during particular seasons and times of day when demand on the water system is at its peak. Acknowledging this potential, the California Water Service Company has an emergency contingency plan that includes damage assessment, water retention, transporting water, transporting generators, and mutual aid. **Currently, the California Water Service Company uses an electronic telemetric method to monitor the capacity, pressure, and the distribution system of various reservoirs. Should there be any damage to the piping system, the water company staff can easily detect the source of the problem. Depending on the damage, the first priority of the water company is to isolate main leaks and retain water in the reservoirs to prevent any landsliding or flooding that may occur. In situations facing water shortage, the water company activates their emergency contingency center and works with the local emergency regional center, Los Angeles County Office of General Management and/or Southern California Region Emergency Centers, based on the significance of the situation for the delivery of bottled water. In cases of power outage in the two lift stations that pump water to the Peninsula, the Water Service Company will transport large generators to restore power.**

5 Geologic Hazards

The Palos Verdes Peninsula is composed of a sequence of sedimentary and metamorphic rock which has been folded and uplifted along the Palos Verdes fault on the north and an unnamed fault in the offshore area to the ~~south. (See Natural~~ Environment **Conservation & Open Space Element** for geologic profile of Palos Verdes Peninsula.) The folding and up-lifting of the Peninsula has produced an anticlinal structure in which the sedimentary rocks are inclined generally to the north on the northerly flanks of the Palos Verdes Hills and inclined to the south on the southerly side. This particular structural relationship is one of the major factors responsible for the large-scale landslides present on the Peninsula.

The Palos Verdes Peninsula bedrock is composed of a metamorphic core blanketed by sequences of younger sedimentary rock. ~~Four basic~~ **Five** geologic formations are present on the Peninsula ~~The four rock types are:~~ **including the** Catalina Schist, Monterey Formation, **San**

Pedro Formation, intrusive volcanic rocks, and **marine** terrace deposits. ~~(See Natural Environment Element and/or the Technical Data Base for Seismic Safety and Public Safety General Plan Elements, Envicom, for detailed information.)~~ **The Palos Verdes Peninsula is tectonically uplifted and folded as a result of the Palos Verdes fault. The complex folding generally represents a northwest-southeast trending double-plunging anticline. The sedimentary rocks are inclined generally to the north on the northerly flanks of the Palos Verdes Hills and inclined to the south on the southerly side. The thirteen staircase marine terraces surrounding the Palos Verdes Peninsula are one of the most complete sequences of emergent marine terraces in Southern California.**

Geologic hazards include seismic hazards, landslides, debris and mud flows, liquefaction, tsunamis, seiches, settlement and subsidence, expansive soils, corrosive soils, and coastal bluff retreat. These geologic hazards are detailed in the following sections below.

5.1 Seismic Hazards

The City of Rancho Palos Verdes is located in a seismically active area and near several of the many active and potentially active faults in Southern California (see Figure ~~27~~ **below**). This section analyzes the earthquakes that should be expected in the future and the effects that will be experienced with the area.

A fault is defined as a fracture in the crust of the Earth along which rocks on one side have moved relative to those on the other side. Most faults are the result of repeated displacements over a long period of time. Active and potentially active faults within Southern California are those capable of producing seismic shaking that may cause damage to structures. An active fault is defined by the State of California as a well-defined fault that has exhibited surface displacement during the Holocene Epoch (to about 11,000 years ago) and a potentially active fault is defined as having a history of movement within the Pleistocene Epoch (between 11,000 to 1.6 million years ago).

Two faults are present on the Peninsula: the Palos Verdes and Cabrillo Faults. The **active Palos Verdes fault** ~~traverses the northeastern corner of the study area.~~ **trends northwest-southeast and marks the eastern termination of the Palos Verdes Hills.** The **potentially active** Cabrillo fault ~~traverses northwesterly from the southeastern corner of the area to near the center of the Peninsula (see General Geology Map Figure 26).~~ **also trends northwest-southeast and extends from Cabrillo Beach to near the center of the Peninsula. The** ~~Neither fault is considered the source of significant earthquakes for reasons discussed in detail under Seismic Hazards.~~ **Palos Verdes fault is considered a source of significant earthquake hazard and the Cabrillo Fault is a potentially moderate earthquake hazard for reasons discussed in detail below.**

The seismic hazards to the City are not limited to the faults located in the Peninsula. The active Newport – Inglewood fault and the Puente Hills blind thrust are located east of the Palos

Verdes Peninsula within the Central Plain of the Los Angeles Basin. The Newport – Inglewood marks the boundary between the Southwestern and Central Blocks and the Puente Hills/Whittier Fault marks the boundary between the Central and Northeastern Blocks. Earthquakes generated on these faults pose a significant earthquake hazard to the Palos Verdes Peninsula.

The active San Andreas Fault marks the boundary between the North American and Pacific Tectonic Plates. The San Andreas is the most active fault system in California and is considered a primary source of significant earthquake hazards in Southern California. However, the effects on the Palos Verdes Peninsula are only considered moderate due to the distance from the San Andreas Fault. Additional secondary impacts to the Palos Verdes Peninsula will be felt due to the damage that may be suffered by other areas and transported to Southern California.

For the purposes of defining the problem, the principal active and potentially active faults in the region and their earthquake generating capabilities are listed in Table 1. The latter is expressed as the magnitude of the largest earthquake that can reasonably be expected, and also as the level of shaking (ground acceleration) that could result within the City. ~~The approximate probabilities of occurrence that are listed should be considered on a relative scale, with "likely" being a probability of greater than approximately 50 percent, and "low" a probability of less than approximately 15 percent.~~ **In addition, the estimated slip rate, recurrence interval, and most recent rupture are included in the table.**

Three items in the table are of particular interest. First, earthquakes generated by the Newport-Inglewood Fault will result in high ground accelerations due to the proximity of the fault to the city. Second, an earthquake on the San Andreas Fault is important because it has a high probability of occu~~rrence and because it will be one of California's "great earth~~quakes **(as of 2018, the San Andreas is "overdue" for an o~~ccurrence)~~.** ~~Strong shaking from this earthquake is expected to last between 40 and 60 seconds, but the ground accelerations in the area will not be unusually high, because the nearest point on the fault is 53 miles to the northeast. Third, the Palos Verdes fault, which is generally considered as potentially active, is the source for the largest ground accelerations shown on the table. However, for reasons presented later in the report, the probability of occurrence is considered "Very Low."~~ **The 2008 magnitude 7.8 Shakeout Scenario indicates that shaking from this earthquake is expected to last between 45 and 60 seconds, but the ground accelerations in the area will not be unusually high (less than half that of the estimated acceleration anticipated for an earthquake on the Newport-Inglewood Fault). This is mainly because the nearest point on the fault is over 50 miles to the northeast.**

Third, the Palos Verdes Fault, although not zoned as active by the California Geological Survey, is now generally considered as having Holocene activity along the southern offshore

section. It is the source for the largest ground accelerations shown in Table 1. However, maximum magnitude and recurrence interval is generally poorly understood.

TABLE 1
Faults in the Region

Fault	Approximate Distance (Miles)	Estimated Maximum Earthquake Event		
		Maximum Earthquake Event Magnitude (Mw)	Peak Site Acceleration (g)	Estimated Site Intensity Modified Mercalli Scale
Palos Verdes	1–4	7.3	0.691	XI
Newport-Inglewood	10	7.1	0.337	IX
Puente Hills Blind Thrust	19	7.1	0.264	IX
Santa Monica	22	6.6	0.181	VIII
Malibu Coast	23	6.7	0.185	VIII
San Joaquin Hills	24	6.6	0.173	VIII
Upper Elysian Park Blind Thrust	24	6.4	0.154	VIII
Hollywood	25	6.4	0.151	VIII
Whittier	26	6.8	0.149	VIII
Newport-Inglewood (offshore)	26	7.1	0.170	VIII
~~Raymond~~ Hill	28	6.5	0.145	VIII
Verdugo	30	6.9	0.171	VIII
Northridge	30	7.0	0.179	VIII
San Andreas	57	8.0	0.152	VIII

Notes:

The following is an abbreviated version of the 12 levels of Modified Mercalli intensity scale.

I. Not felt except by a very few under favorable conditions.

II. Felt only by a few persons at rest, especially on upper floors of buildings.

III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.

IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.

V. Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.

VI. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.

VII. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.

VIII. Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.

IX. Damage considerable in specially designed structures; well=designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.

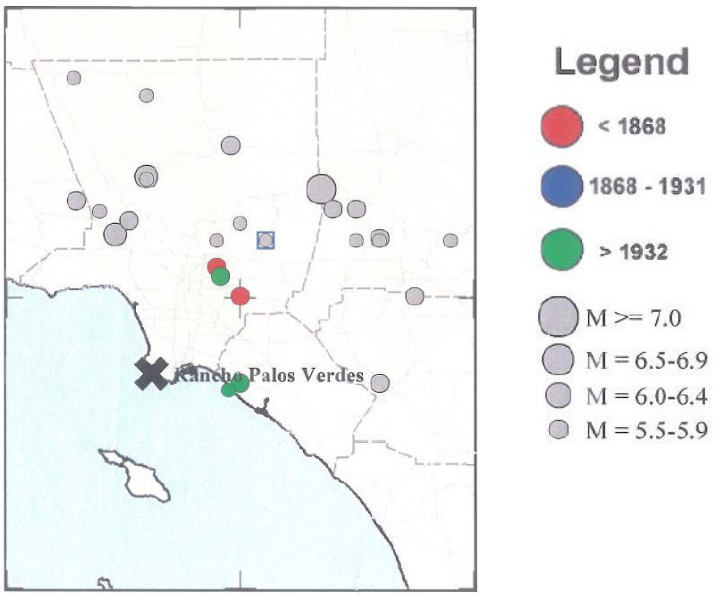
X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

XI. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Significant earthquakes can and probably will occur on other faults. However, available evidence indicates that their effects in the ~~study area~~ **Palos Verdes Peninsula** will be significantly less then the effects of the Newport-Inglewood, Palos Verdes or San Andres faults

~~selected for further analysis.~~ Known active or potentially active faults that could be the site of ground rupture resulting from movement on the fault are limited to the Palos Verdes fault zone which traverses the extreme northeastern corner of the ~~study area~~ **Palos Verdes Peninsula** (~~General Geology Map~~). Evidence bearing on the activity of this fault is discussed in detail in a following section. No other potentially active faults are known within the **Palos Verdes Peninsula** ~~study area (Greensfelder, 1972 and Ziony, et al., 1974), and~~. There are no significant trends of earthquake epicenters or groundwater conditions indicating a buried active fault within the City. **The exhibit on the next ~~page~~** ~~F~~igure 28 presents a plot of all recorded earthquake epicenters in the area from 193~~2 thr~~ough 1972 **2008**.



Note: Earthquakes more than 50 kilometers from selected location are shown in gray.

5.2 Active~~, Capable,~~ and Potentially Active Faults

The following describes known faults and their impacts in the Palos Verdes Peninsula: Palos Verdes Fault, Newport-Inglewood Fault, Puente Hills Blind Thrust, San Andreas Fault, and Cabrillo Fault.

Palos Verdes Fault. The Palos Verdes Fault ~~zone is a faulting and intense folding 50-60 feet wide, or possibly more, in the Miocene-age Monterey Group.~~ **is within a mile of the Palos Verdes Peninsula and poses the most significant earthquake hazard to the City due to its proximity.** ~~The weight of evidence indicates the fault zone is not geologically active and has not been since later Lower Pleistocene (200,000 to 500,000 years ago). However, future geologic~~investigations of proposed construction sites along the trend of the zone will continue to provide new information bearing on this problem. ~~The Palos Verdes fault has been assigned a rating of "potentially active," for the purposes of this analysis, since movement has taken place during the Quaternary period of geologic time. However, the probability of a significant seismic event along this fault in the next 100 years is "Very Low," in light of the fact that over 200,000~~

~~years have apparently passed since the fault last mo~~ved. **Although Holocene activity has been demonstrated in the southern offshore segment of the fault, the recurrence interval and magnitude of the most recent displacement is still not well characterized and as such the California Geological Survey considers it a "Potentially Active" fault. The fault strikes northwest-southeast, dips steeply to the southwest, and is a reverse fault with a minor right-lateral strike slip component. Compression translated along the fault produces the uplift and folding of Palos Verdes Hills and marks the boundary between the Palos Verdes Hills and the rest of the Southwestern Block of the Los Angeles Basin. This fault is considered an active "B" type fault with slip rates of approximately 1 to 5 mm/yr (Treiman, J.Jerome, and Lundberg, M.Matthew, USGS 1998) and a maximum credible earthquake magnitude of 7.3 (Peterson, 1996).**

The effect a maximum credible earthquake on the Palos Verdes fault would have to Southern California is considerable. This potential scenario is estimated to cause losses of $30 billion in building damage, 80 to 1,050 deaths, and 2,400 to 19,000 injuries (OES, 2007).

Newport – Inglewood Fault: The Newport – Inglewood Fault is 7 to 10 miles from the Palos Verdes Peninsula and poses a significant earthquake hazard to the City. The vertical fault strikes northwest-southeast and is a right-lateral strike slip fault with a minor reverse component. Compression translated along the fault produces the Newport – Inglewood uplift from Beverly Hills to the San Joaquin Hills. The fault separates the Southwestern Block from the Central Plain of the Los Angeles Basin. This fault is considered an active "A" type fault with slip rates of approximately 1.0 to 1.5 mm/yr and a maximum credible earthquake magnitude of 7.1 (Peterson, 2003).

The effect a maximum credible earthquake on the Newport – Inglewood fault would have to Southern California is great. This potential scenario is estimated to cause losses of $49 billion in building damage, 150 to 1,900 deaths, and 5,200 to 33,000 injuries (OES, 2007).

The earthquakes that have had a significant effect on the Palos Verdes Peninsula, in historic times, have originated principally as the result of movement on segments of the nearby Newport-Inglewood fault zone. The most notable are the Long Beach earthquake (March 10, 1933, with a magnitude of 6.4), the Signal Hill earthquake (October 2, 1933, with a magnitude of 5.4), the Gardena earthquake (October 21, 1941, with a magnitude of 5.0), and the Torrance-Gardena earthquake (November 14, 1941, with a magnitude of 5.5). The epicenters of these earthquakes, as well as others along or in the vicinity of the Newport-Inglewood fault, are shown on Figure 28. Records of the smaller earthquakes (generally less than magnitude 3.9) are not available for years prior to 1963, so the number of smaller quakes shown is considerably less than that which would be expected had they been recorded for the full period from 19~~32 to~~ 1972 **2006.**

The relative intensity of ground shaking in the vicinity of the Palos Verdes Peninsula during each of the four notable earthquakes described above is estimated to have been between IV and

VI on the Modified Mercalli Scale (Neamann, 1935 and 1943). The levels of intensities were deduced from the accounts of witnesses and by the severity of damage to different types of construction.

~~Historical data for the Newport Inglewood Fault, from 1933-1971, is summarized in the table below.~~

~~These values are normalized to a 100 year period and show both as events per 100 years and as a recurrence interval for each range of magnitude. The data are plotted on Figure 29 as heavy dots, and a recurrence rate for the Newport Inglewood fault zone is interpreted from this data. The alignment of the data points is good with the exception of the point for the magnitude 6.0-6.4. This point is the Long Beach earthquake, and the interpreted rate assumes that an earthquake of this magnitude would still have occurred only once, had the sampling interval been a complete 100 year period. This method has also been used by Allen et al. (1965) in establishing recurrence rates for a number of areas in Southern California. Their rate for the Los Angeles Basin is included on Figure 30 for comparison, and to emphasize the increased seismicity, particularly for larger magnitudes, in the area of the Newport Inglewood fault zone.~~

~~The discussion above applies to the entire fault zone from Newport Beach to Beverly Hills. The recurrence of damaging earthquakes in the study area will depend not upon the rate for the entire fault zone, but upon the rate for the segment of the zone nearest the City. This rate can be determined approximately by applying relationships between earthquake magnitude and length of fault rupture as determined by Bonilla (1970). The theoretical lengths of rupture are listed in Column 2 of the table blow, and the theoretical number of segments for the four arbitrarily chosen magnitudes listed in Column 3.~~

~~These values, converted to number of events per 100 years, are shown on Figure 30 as the curve annotated as "Single segment of Newport Inglewood fault." This curve represents the "discounting" of the curve for the entire fault zone due to the relationship that smaller earthquakes result from the movement of shorter segments of the fault. The two curves converge at magnitude 7.7, which is the magnitude that would be expected should the entire 38-mile length of the zone move at the same time. Such an event can be considered the "maximum credible" earthquake for the Newport Inglewood fault zone. Since the recurrence interval for an event of this magnitude is approximately 1,000 years and the southern segment moved only 40 years ago, this potential event is not considered as having a sufficiently high probability~~ of ~~occurrence to be considered in this analysis.~~

~~The analysis or recurrence of magnitude for the segment of the Newport Inglewood fault zone nearest to the study area yields the following results.~~

Puente Hills Blind Thrust: The Puente Hills Blind Thrust fault is farther than 15 miles from Palos Verdes Peninsula and poses a moderate earthquake hazard to the City. The fault strikes northwest-southeast and dips approximately 25 degrees to the southwest (Peterson,

2003). Compression translated along the fault produces the uplift and folding of Puente Hills and cuts the Central Plains of the Los Angeles Basin. This fault is considered an active "B" type fault with slip rates of approximately 0.7 mm/yr and a maximum accredited earthquake magnitude of 7.1 (Peterson, 2003).

The effect a maximum credible earthquake on the Puente Hills blind thrust would have to Southern California is considerable. This potential scenario estimated to cause losses of $69 billion in building damage, 40 to 700 deaths, and 1,700 to 11,000 injuries (OES, 2007).

San Andreas Fault: The San Andreas Fault is the greatest earthquake hazard in Southern California. The fault is located more than 50 miles from the Palos Verdes Peninsula and poses a moderate earthquake hazard to the City. The vertical, right-lateral strike slip fault strikes northwest–southeast. The San Andreas fault cuts through most of California and marks the boundary between the North American Plate to the northeast, and the Pacific Plate to the southwest. This fault is considered an active "A" type fault with slip rates of approximately 23 to 37 mm/yr and a maximum credible earthquake magnitude of 7.8 (Petersen et al. 2008).

The effect a maximum credible earthquake on the San Andreas fault would have to Southern California is great. This potential scenario would cause losses estimated at $150 billion in building damage, 60 to 900 deaths, and 2,200 to 15,000 injuries (OES, 2007). However, the affect on City residents and infrastructure would be less due to the distance from the Palos Verdes Peninsula. The affect on the City due to the damage that may be suffered by other areas and damage to lifeline and infrastructure in Southern California may be substantial. For example, disruption to the movement of water, petroleum products, telecommunications, and general transportation may have a dramatic effect on the peninsula in the short term.

The San Andreas Fault has generated two great earthquakes in recorded history; the 1856 Fort Tejon earthquake (magnitude 7.5-8.5), and the 1906 San Francisco earthquake (magnitude 8.3). Ground shaking intensities in the vicinity of this study were not recorded for the 1856 event, but reach a level of III-IV on the ~~(~~Mercalli Scale~~)~~ for the 1906 earthquake (Lawson, 1908).

~~The analysis of expected events from the San Andreas Fault zone must be approached by~~ a ~~method that is very different from that used to analyze the Newport Inglewood fault zone. This is because the movement of the segments of the fault zone is more complex, and because the data are different.~~

~~The San Andreas Fault zone has been divided by Allen (1968) into several areas of contrasting behavior (see Figure 31). The area of particular interest is the segment between San Bernardino and Parkfield that generated the Fort Tejon earthquake of 1856. This was the source of one of the three "great earthquakes" in California's historic record, and this segment of the fault has~~

not moved since. It is the closest part of the fault to the Palos Verdes Peninsula, and it is generally considered as the segment capable of generating the largest earthquake.

The segments of the fault to the northwest and southeast of the 1856 break are "active areas" that experience earthquakes of medium to small magnitude on a fairly regular basis. The 1856 break, however, is not moving, but is storing energy. The approximate rate of this storage can be deduced from the movement to the northwest which is occurring at a rate of 25-35 mm/yr, while that to the southwest is approximately 8.5 cm/yr. Current theory suggests that the differential between the two rates is being taken up in the Transverse Ranges near the south end of the segment, and that a rate of approximately 5-6 cm/yr is applicable to most of the segment of the 1856 break. This rate is compatible with other considerations (Brune et al., 1969) relating to movement on the fault.

Strain Accumulation and Fault Slip
Central and Southern San Andreas Fault
(From Greensfelder, 1972)

Area and Triangulation Net

1. Central California Active Area:
    a. San Francisco Bay Area 1906-1969
    b. Salinas River, 1944-1963
2. Area of 1857 Break:
    a. San Luis Obispo to Avenal, 1932-1951
    b. Gorman, 1935-1956
       Palmdale, 1938-1958
       Cajon Pass, 1949-1963
       Newport Beach to Riverside, 1929-1953
3. Southern California Active Area:
    a. Imperial Valley, 1941-1967

Strain Accumulation and Fault Slip

5-6 cm/yr displacement between Mt. Diablo and San Francisco Peninsula; both strain and fault slip.
3 cm/yr slip on San Andreas fault

1.5 cm/yr slip and strain

No significant movement detected.

8.5 cm/yr regional displacement.

~~The magnitude of an earthquake generated by slip on a fault is approximately proportional to the logarithm of the movement magnitude compiled by Bonilla (1970) for the San Andreas and other faults of similar characteristics are listed in the table below.~~

~~The most important consideration is that 118 years have passed since this segment last moved. Regardless of the rate of displacement assumed, there is probably enough energy stored in this segment of the San Andreas fault to generate a major earthquake at any time. If a 6 cm/yr rate is valid, the energy stored already is sufficient to generate an earthquake of a magnitude of approximately 8.3. This is the estimated magnitude of the great San Francisco earthquake~~ of ~~1906.~~

~~The reasoning developed in the paragraphs above is not new to most geologists, seismologists, and earthquake engineers. It is the reason one hears from time to time about the prediction of a "great earthquake" on the San Andreas fault near Los Angeles. From a scientific standpoint, such an earthquake must be considered as imminent. The question is no "if", it is "when", and the longer it waits, the larger it will probably be.~~

Cabrillo Fault. ~~Ziony, et al., (1974), indicate only that the Cabrillo fault has moved within the last 12 million years, but mapping by the California Division of Mines and Geology (1967) shows that the fault has not displaced the terrace deposits of Pleistocene age (less than 2 million years old). The absolute age of these terrace deposits is difficult to determine, but since they life at an elevation of 1000 feet above sea level, they are older than the 200,000 to 300,000 year old terrance deposits present at an elevation of 150 200 feet which overlie the Palos Verdes fault at the north edge of the Palos Verdes Hills. Since the Cabrillo fault has shown no evidence of movement since the deposition of the sediments on the terraces, it is at least 300,000 years old and therefore "inactive."~~ **The Cabrillo Fault, which bisects a portion of the Palos Verdes Hills, is considered potentially active and poses a potentially significant earthquake hazard to the City. The normal fault strikes northwest-southeast and dips northeast. Tension translated along the fault drops the northeast side relative to the southwest side. This fault is considered a potentially active type fault with undetermined slip rates and a maximum probable earthquake magnitude of 6.8 (SCEC, 2008). The effect a maximum accredited earthquake on the Cabrillo fault would have to Southern California has not been evaluated (OES, 2007).**

5.3 Landslides

Landslides represent only one step in the continuous, natural erosion process. They demonstrate in a dramatic way the tendency of natural processes to seek a condition of equilibrium, and various erosion processes act to gradually reduce them to a base level. Landslid**es**~~ing~~ is an important agent in this cycle. Several types of landslides commonly encountered~~ include (see Figures 34, 35, 36 and 37 respectively): **encountered (USGS, 2004) are described below.**

Translational or Block Slides. These slides are the largest, most impressive type of landslide. ~~The basal failure plan is controlled by planar zones of weakness, such as~~ bedding

planes, joint planes, or formational contracts. They involve a single coherent mass that translationally moves down-slope with little rotation or backward tilting. The basal failure plane (rupture surface) is controlled by planar zones of weakness, such as bedding, foliation, jointing or a formation contact, or fault. These failures Block glides typically occur in layered rocks of sedimentary or metamorphic origin where lateral support is removed by erosion or grading. The Portuguese Bend Landslide is a complex version of a translational landslide. The Portuguese Bend Landslide has been conductive to ground failure for approximately 250,000 years and has been officially mapped as a landslide complex before the 1950s. While the history of landslides dates back, the current slippage began in 1956, coincident with the construction of the Crenshaw Boulevard extension, south of Crest Road, along the top of the ancient landslide complex. Another possible contributing cause of the sliding was the construction of hundreds of homes on and above the unstable rock and soil in the early 1950s prior to the slide.

Arcuate failures Rotational Slide. Rotational failures are common in massive, unstructured material with relatively little resistance to shearing. Arcuate failures are common in massive, unstructured material with relatively little resistance to shearing. These materials include thick sections of clayey soils and poorly compacted artificial fills. The surface of rupture is curved concavely upward. The zone of failure typically describes an arc rather than a plane and the movement of the mass is partly rotational. Small arcuate failures, called slumps, are a type of rotational slide common along steep-banked streams and canyons in Rancho Palos Verdes, where a stream has cut through an existing soil zone.

Rock falls. This phenomenon, much like an avalanche of loose rock, cascades down a steep slope, disturbing more material as it passes, becoming more widespread, until it reaches the bottom of the slope. is an abrupt movement of rock and boulders that have detached from steep slopes or cliffs. Rock falls may be influenced by the height of the slope, size of rock, and slope geometry. Rock falls are prevalent where natural slope gradients exceed 50%, and where natural weathering produces angular fragments of material with little soil cover. An initial separation occurs along fractures, joints, or bedding and highly influenced by mechanical weathering and interstitial water. Interstitial water is defined as water occupying interstices or pore volumes in rocks. The debris typically free-falls, bounces and rolls down slope and may impact areas tens to hundreds of feet from the bottom of the slope. Rock falls are typical in the Forrestal Canyon area and along many of the sea bluffs of the city.

Topples. Similar to rock falls, they represent forward rotation of rock or boulders that are separated by gravity or the build up of water pore pressure in cracks from the surrounding rock materials.

Mud Flows Debris flows. Mudflows involve very rapid downslope movement of saturated soil, sub-soil, and weathered bedrock. They originate in hillside areas where the soil horizon is well developed, but he soil has poor drainage characteristics. Debris flows, also known as "mudflows," are potentially serious hazard to life and property in the hillside areas of the Palos Verdes Peninsula. Rainfall, steep slopes, and loose soil are the primary controlling conditions that generate debris flows. Debris flows are more likely to occur during rainy

seasons after wildfires. Vegetation naturally binds the topsoil and absorbs precipitation. The removal of vegetation by fire lowers the stability of exposed topsoil and lessens the water-holding capability of the watershed. Following a wildfire, sediment yields and peak discharges of watersheds can increase up to 35-fold, and potentially inundate drainage systems. Debris flows typically start within swales or small steep drainages or as small failures on the sides of steep slopes, usually greater than 15 degrees. The flows typically originate in loose soils that become saturated due to the introduction of water. The saturated soil liquefies into slurry of loose soil, rock, organic matter, air, and water. These flows may coalesce into larger canyons or stream channels intensifying the flow and increasing the volume of material. Debris flows can travel faster than about 10 mph or approximately 25 yards in about 5 seconds. Speeds in excess of 20 mph are not uncommon, and speeds in excess of 100 mph, although rare, do occur locally (California Geologic Survey Note 33, 2007). In general, hillsides become saturated and susceptible to debris flows after heavy seasonal rainfall (10 inches of seasonal), or during intense rainfall events (approximately 2-inches within a 6-hour period). Large mudflows have the energy to uproot trees, move large boulders, severely erode canyon walls, and deposit large volumes of material. Because of the speed with which they move, mudflows can be quite destructive and pose a threat to life and property, especially along the bottom and at the mouths of canyons. Silt and debris can also impact sensitive coastal inter-tidal zones.

Human activity can impact the occurrence of debris flows as a result of improper drainage and maintenance. Introduction of excess water into soils from a broken water pipe or improper functioning drainage can create a saturated soil condition. Altered and excavated slope areas such as road cuts are more prone to debris flows than natural slopes if not properly maintained. To mitigate potential debris flows, care should be taken that all runoff is properly channeled to engineered drainage systems.

Landslides~~ing~~ ~~is~~ are basically controlled by four factors. ~~The~~ : **the** rock **type** ~~or geologic formation is a reasonably good indicator of the strength of the rock and its resistance to failure~~, the fabric or structure of the rock, the amount of available water and the topographic conditions. The geologic formation or rock type is a reasonably good indicator of the strength of the rock and its resistance to failure. The geologic structure or the orientation of potential failure planes is important in determining the size and type of failure. The amount of available water greatly influences the strength of a potential failure surface. It can ~~and also~~ add~~s~~ to the weight of the unstable mass, lower the co-efficient of friction and increase pore ~~increasing the~~ pressure, all of which contribues ~~and contributing~~ to land movement. Topographic slope gradient is also a contributing factor in controlling the force that causes failure. The relative importance of these four factors varies from place to place, but rock type, geologic structure, and available water are probably the most important. Some degree of slope is necessary to initiate failure, but if the other factors are present, failure can occur on slopes with a gradient of less than 5%.

Landslid~~esing~~ in the ~~area~~ **City** can be grouped into two major landslide systems that represent complex groups of smaller coalescing landslides~~. Two of these systems, the Portuguese Bend and the South Shores, are well documented.~~ **; the Portuguese Bend and the South Shores. Smaller, isolated landslides are scattered throughout the City, outside the two major systems (Figure 3, Landslide Inventory Map).** ~~The third, the Silver Spur system, was postulated for the first time in the Envicom Study (1975). Smaller, isolated landslides are scattered over the area, outside the three major systems.~~

The Portuguese Bend ~~system~~ is the most studied and publicized landslide in the area, and perhaps in the Los Angeles Basin. **The Portuguese landslide has been mapped as a large ancient complex that extends from close to the top of the ridge of the city to the ocean.** The most recent movement began in 1956, apparently as the result of grading operations, and involved movement in about 1/3 of the system. The recently active portion is shown on the Landslide **Inventory** Map **(Figure 19)**. ~~The cross hatched area on the map, adjacent to Crest Road, is a narrow valley interpreted as the remnant of the original pull-away at the top of the slide mass.~~ **This area includes the Abalone Cove and the Portuguese Bend Landslides.**

The upper limit of the landslide has been under debate for many years. The Landslide Inventory Map (Figure 19) places the ancient landslide scarp at the Valley View Graben adjacent to Crest Road. The Valley View Graben is a narrow valley interpreted as the remnant of the original pull-away at the top of the slide mass. Previous maps by Dibblee (1999) and others place the top of the landslide much further down slope from the Valley View Graben.

In the lower portion of the landslide, Palos Verdes Drive South transverses the landslide along with water and sewer lines. The roadway and pipelines are under constant scrutiny to determine areas in need of repair. The roadway is modified as necessary by minor grading and pavement repair. The pipelines have all been placed above ground so that easy observation and maintenance can be performed. The risk to the roadway and pipelines is significant should portions of the Portuguese Bend landslide accelerate.

~~While~~ No historic movement has been recorded within **the main mass of** the South Shores landslide system~~, the many fresh scarps and closed depressions evident within the mass indicate that relatively recent movement has occurred.~~ **The last movement of the main landslide has been determined to be approximately ±16,200 years ago.** This system is apparently at equilibrium for the present, but renewed activity may occur if existing conditions are modified. **Along the eastern flank of the landslide, erosion and subsequent down cutting within San Ramon Canyon has triggered a new landslide, now known as the Tarapaca landslide that drops into the canyon from the east. The Tarapaca landslide threatens many of the over steepened slopes in the canyon as well as road stability along the switchbacks of Palos Verdes Drive East. As discussed in the Circulation Element, the City is undertaking a drainage project to help protect Palos Verdes Drive East.**

The Silver Spur l~~andslide system~~ **Graben located northwest of the Valley View Graben and partially within Rolling Hills Estates and partially within Rancho Palos Verdes** was postulated by Envicom ~~Study based on geomorphic evidence, as well as data contained in soil engineering reports submitted to the County of Los Angeles. Strong geomorphic evidence indicates that a very large slide mass may be present, but this system is designated as a possible landslide, because very little subsurface data is available. This evidence is the presence of a broad arcuate valley, located in the area of Deep Valley Drive and Silver Spur Road, that is perpendicular to the major drainages. The valley appears to be located on an ancient pull away, and contains deposits identified by Jahns (1965) as deposited in an ancient lake. Borings made in conjunction with foundation investigations in the valley (reports on file with the County) show these deposits to be at least 65 feet thick.~~ **(1975) as being part of a much larger landslide complex they called the Silver Spur System. Ehlert (2000) reviewed the evidence to date and postulated that the graben might be associated with a tectonic (fault) origin rather than a landslide origin. He suggested that the area, although a graben, would need further work to determine its origin. He states that the age of the graben formation is on the order of a maximum of one million years old and may be several hundred thousand years old. The Landslide Inventory Map (Figure 19), does not include the Silver Spur Graben as a known landslide or landslide complex.**

~~The valley discussed above suggests the presence of an ancient landslide in that it is an anomalous topographic feature that does not "fit in" with the present pattern of canyons and valleys. The latter are oriented primarily northeast southwest, while the valley along Silver Spur Road is oriented northwest southeast. Also, the more recent canyons are narrow and steep sided, while the Silver Spur feature is relatively broad.~~

~~An additional consideration is "closure" of the valley in the past. That is, its inferred shape, assuming the more recent canyons along Hawthorne and Crenshaw had not formed, and the presence of the lake beds implies that this valley was blocked or closed from normal drainage. Some geologists who have worked in the area believe (R.H. Jahns, personal communication) that the valley is a remnant of old topography, and that the closure of the valley and the formation of lake beds was caused by small slides blocking normal drainage. It is believed, however, that the evidence for a large slide complex is sufficiently great that it should be tentatively considered as such until surface and subsurface geologic work has demonstrated that it is not.~~

~~The Silver Spur landslide system appears to be a complex of ancient landslides, with more recent slides present locally on the overall ancient complex. Recent development upon the slide masses have added to the total weight of the system, increasing the driving forces. Also, since some of these developments are unsewered, the private sewage disposal systems are adding water to the complex. At this time, it is impossible to predict the current stability of the entire landslide system or that of any of its component slides. Much remains to be done in terms of accurately defining the limits of sliding, as well as the mechanisms involved, before any determinations can be made regarding the overall stability of the system.~~

5.4 Liquefaction

~~Liquefaction involves a sudden loss in strength of a saturated cohesionless soil (predominantly sand) which is caused by shock or strain (such as an earthquake), and results in~~ temporary transformation of the soil to a fluid mass. **Increase in the sediment and the sand grains to lose contact with each other, leading the sediment to lose strength and behave like a liquid. The soil can lose its ability to support structures, flow down even very gentle slopes, and erupt to the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface — usually in uneven patterns that damage buildings, roads and pipelines. For liquefaction to occur, three factors must be present: loose granular sediments,** saturation of the sediment by ground water, and strong ground shaking. **If the liquefying layer is near the surface, the effects are like that of quicksand for any structure located on it**. If the layer is in the subsurface, it may provide a sliding surface for the material above it. Liquefaction typically occurs in areas where the groundwater is less than 30 ~~feet from the surface and where the soils are composed of poorly consolidated silt and fine sand.~~ **If the liquefying occurs below a competent layer, translation, rotation, or liquefaction may occur.**

~~In addition to the necessary soil conditions, the ground acceleration and duration of earthquake must also be of a sufficient level to bring on liquefaction.~~ the potential for liquefaction in Ranch Palos Verdes is very low, since the local soil deposits are relatively thin and cohesive **and groundwater is usually at depth.** Liquefaction is not considered to be a significant hazard in the City. **The mapped potential liquefaction zones on the Palos Verdes Peninsula are located in the drainage area east of the Palos Verdes Reservoir, along the shores of Royal Palm Beach Park and along the shoreline adjacent to some of the beach areas as shown in Figure 20 – Landslides and Liquefaction (Source: State of California Seismic Hazard Zone Maps for the Torrance, Redondo Beach and San Pedro Quadrangle - (CDMG, 1999).**

Nearby effects of liquefaction were noted in the San Pedro area following the 1933 Long Beach earthquake (California Division of Mines and Geology 1998). During the 1994 Northridge earthquake, significant damage was reported in the Los Angeles–Long Beach Harbor areas, including lateral spreading, settlement, and sand boils that suggested liquefaction occurred (California Division of Mines and Geology 1998).

5.5 Tsunamis

Tsunamis are sea waves generated ~~primarily by vertical offsets of the sea floor accompanying submarine faulting.~~ **by earthquakes, landslides, or volcanic eruptions. It has also been postulated that large meteor impacts hitting the ocean have caused very large sea waves.** The destructive power of tsunamis is due to the fact that they travel at velocities approaching ~~400~~ **500** miles per hour. While they are generally imperceptible on the open sea**, as they approach**

land and as the ocean shallows, these waves slow down, making them grow in height (amplitude) and thus impact inland areas greater than normal wave action. Tsunamis have been recorded that crested to heights of more than 100 feet before slamming into shore. These great heights are rare and depend on several factors, such as offshore topography, tide phase, and coastline orientation, and configuration. Hazardous tsunamis may occur along the coastline of Rancho Palos Verdes as the result of submarine faulting at great distance or due to local offshore faulting. or landslides.

Faulting at great distance is the most common source of tsunamis along the California coast. Typical source areas are the great submarine trenches off Chile and Alaska. The latter was the source area for the tsunami that struck Crescent City in 1964 with 13 foot waves, claiming 11 lives and causing over 11 million dollars damage. The Seismic Sea-Wave Warning System administered by the U.S. Coast and Geodetic Survey detects incoming tsunamis and supplies the endangered localities with the expected arrival times of the waves. The warning times vary with distance from the source, but for most tsunamis approaching the coast, several hours are available to evacuate the citizens and to make emergency preparations. The largest recorded tsunami heights in California were in Venice and Santa Monica in 1930 and were about 6.1 meters, or 20 feet in height (California Geologic Survey web site).

The tsunami hazard map of the State, compiled by the Division of Mines and Geology (1972a), identifies the south facing coastal strip within the study area only as an area in which "…special caution should be observed during an alert. Area should be cleared if flood tide and tsunami are coincident." A more specific analysis is not warranted in the absence of a more definitive history of tsunami occurrence in the area.

Recent studies have indicated the potential for large-scale landslides and slumping off the Palos Verdes Peninsula coast capable of producing tsunamis. Modeling indicates that tsunamis on the order of 3 to 6 meters (10 to 20 feet) high with velocities of up 10 meters (33 feet) per second could occur. Due to the height of the bluffs within City boundaries, the impact from these potential tsunamis would be limited (ASCE 2005).

5.6 Seiches

Seiches are long period water-level oscillations within closed or open bodies of water, such as lake or harbor basins that can be created by seismic waves or landslides standing waves produced in a body of water by winds, atmospheric changes, the passage of earthquake waves. Studies of true seismic seiches are limited, but that by McGarr and Vorhis, 1968, of seiches induced by the Alaska earthquake of 1964 indicates that the largest recorded wave heights (double amplitude) did not exceed 1.2 feet. Since this is less than wave heights that would be expected from wind induced waves, true seismic Seiches are not considered as constituting as a significant hazard in Rancho Palos Verdes.

~~It should be noted, however, that considerable confusion exists as to the application of the term seiche. The definition in Glossary of Geology (1972) limits are a true seismic seiche to standing waves set up by the passage of seismic waves set up by the passage of seismic waves from an earthquake. Traveling waves set up by landsliding into or within a lake or reservoir, or those induced by the tilting of water body, are not true seismic seiches. Dramatic examples of damage attributed at least in part to seiching at Hebgen Lake in Montana in 1959 (U.S. Geological Survey, et al., 1964) or at Kenai Lake in Alaska in 1964 (McCulloch, 1966) are more likely the results of traveling waves) set up by landsliding or the tilting of the reservoir bottom. Significant tilting of major reservoirs or lakes is not expected in the study area, and the potential hazard from landslide induced waves has been discussed previously under Landslides.~~

5.7 Settlement *or Subsidence*

Settlement may occur in unconsolidated and unsaturated soils as the result of a more efficient rearrangement of the individual soil particles. **This arrangement is typically** ~~due to additional overburden pressures from foundation loads or grading, or due to earthquake shaking.~~ **due to additional overburden pressures from foundation loads or grading, or due to earthquake shaking.** Settlements of sufficient magnitude to cause structural damage are normally associated with rapidly deposited alluvial materials, secondary settlement within subsurface peat deposits, improperly founded or poorly compacted fills, or highly fractured landslide deposits. **Regional or local groundwater withdrawal from the Los Angeles Basin could cause subsidence within adjacent** ~~t cities.~~ ~~Rapidly deposited alluvial materials are present in the major filled graben areas at the heads of the Portuguese Bend and Silver Spur landslide systemsIdaThe~~ of these deposits varies from site to site; but, in general, the potential for settlement must be considered when evaluating a particular development within these areas.

~~While most of the landslides in the study area are of the block glide type with the main slide mass remaining intact, zones of intense fracturing are present, particularly along the toes and head scarps of the landslides. These areas of jumbled debris are susceptible to settlement when subjected to the additional loads of development. These fractured areas are detectable only by careful geologic mapping and subsurface investigation, and area best analyzed on a site by site analysis.~~

Expansive Soils

~~The entire area is underlain by various combinations of Diablo and Altamont soils (1969)Dwhich produce a dark grey, neutral clay. All of these combinations have a shrink swell potential.~~

Expansive soils contain sensitive clay minerals that are capable of absorbing water and increasing in volume. The more water they absorb the more their volume increases. Sensitive clay minerals will also shrink when they dry out and remove support from structures and buildings and result in subsidence and/or desiccation cracks at the ground surface. The shrink and swell cycle of highly sensitive clay minerals in expansive soils can exert enough force on footings or foundations to cause damage to structures and buildings.

Expansive soils tend to have a greater effect near the surface since expansion pressures are counteracted by soil overburden pressures at depth. Cracked foundations, floors and basement walls are typical types of damage done by expansive soils. Expansive soils can cause post construction damage to building foundations or interior slabs, or exterior hardscape such as patio slabs, garden walls, driveways, and sidewalks as well as structure framing and plaster walls.

Soils of the Rancho Palos Verdes area are typically various combinations of Diablo and Altamont soils (U.S.D.A., 1969) which produce dark grey, neutral clay. All of these combinations have a high shrink-swell potential. While these soils are highly expansive, they should not be a factor in precluding development. Modern soil engineering procedures coupled with present-day foundation designs can effectively and inexpensively mitigate the effects of most expansive soils.

5.9 Coastal Cliff Retreat

The Palos Verdes Peninsula coastal cliffs are exposed to wave energy and subject to erosion and cliff retreat. Cliff retreat is the landward migration of the cliff face as a result of erosion processes including ocean, wind, and gravity. This chronic coastal evolution plagues the city's infrastructure and threatens the communities that are situated above and adjacent to these cliffs. Cliff retreat rates from the Point Vicente area north are approximately 0 to 0.77 meters per year, and has locally retreated more than 50 meters within a 65 year period (Hapke and Reid, 2007). Cliff retreat rates in the Point Fermin area are estimated at between 0 to 0.95 meters per year, and has locally retreated more than 60 meters in 65 years (Hapke and Reid, 2007). Along the Portuguese Landslide Complex shoreline erosion removes stabilizing support.

6 CLIMATE CHANGE

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however current data increasingly indicate that the current global conditions differ from past climate changes in rate and magnitude. Global climate change attributable to anthropogenic (human) Greenhouse Gas (GHG) emissions is currently one of the most important and widely debated scientific, economic and political issues in the United States and the world.

6.1 GHG Emissions

GHGs are those compounds in the Earth's atmosphere which play a critical role in determining temperature near the Earth's surface. More specifically, these gases allow high-frequency shortwave solar radiation to enter the Earth's atmosphere, but retain some of the low frequency infrared energy that should radiate back from the Earth towards space, resulting in a warming of the atmosphere. The extent to which increased concentrations of GHGs have caused or will cause climate change and the appropriate actions to limit and/or respond to climate

change are the subject of significant and rapidly evolving regulatory efforts at the federal and state levels of government.

As a member of the South Bay Cities Council of Governments (SBCCOG), the City collaborated with the SBCCOG on the development of the Emission Reduction Action Plan (ERAP). The City has conducted two inventories of community-wide greenhouse gas emissions, one for the baseline year of 2005 (future emissions reductions will be measured aainst this year) and another for 2007. Additionally, the SBCCOG calculated inventories for 2010 and 2012 (South Bay Cities Council of Governments 2011). Table 2 is a summary of the City's emissions from each sector for the years 2005 and 2012 and the percent change from the same period. As shown in Table 2, the City's community and municipal GHG emissions decreased 8 percent from 2005 to 2012, falling from 289,289 Metric Ton(MT)CO_2e in 2005 to 266,176 MTCO_2e in 2012.

TABLE 2
GHG EMISSION BY SECTOR (2005-2012) (MTCO_2e)

Sector	2005	2012	Percent Change (2005 to 2012)
On-road Transportation	150,564	136,175	-9.6%
Residential Energy	88,941	86,129	-3.2%
Commercial/Industrial Energy	20,377	25,304	24.2%
Water	18,156	11,653	-8%
Solid Waste	8,674	4,158	-52.1
Off-road Sources	157	340	116.7%
Wastewater Municipal Emissions Total	156	117	-25%
	2,264	2,291	1.2%
	289,289	266,176	-8%

The City's Community emissions were categorized in seven sectors: Commercial/Industrial Energy, Residential Energy, On-road Transportation, Solid Waste, Water, Wastewater, and Off-road Sources. The Municipal emissions were added as one sector.

- Commercial/Industrial Energy includes emissions from electricity and natural gas consumption in nonresidential buildings and facilities (including outdoor lighting) in the City.
- Residential Energy includes emissions from electricity and natural gas consumption in residential buildings in the City.
- On-road Transportation includes emissions from vehicles traveling (wholly or partially) within the City.
- Solid Waste includes emissions from waste that is generated in the community and sent to landfills.
- Water includes emissions from the electricity used to source, treat, and deliver imported water in the community that is not accounted for in the community utility data.
- Wastewater includes emissions from treating wastewater generated in the community.
- Off-road Sources include emissions from operating equipment for construction, commercial, light industrial and agricultural activities; lawn and garden equipment; and recreational vehicles such as all-terrain vehicles.

As shown in Table 2, the transportation sector was the largest contributor to emissions in both 2005 (53%) and 2012 (52%) by producing 150,564 $MTCO_2e$ and 136,175 $MTCO_2e$, respectively. This change represents almost a 10% decrease in emissions over the seven-year time period. Residential energy is the second-largest contributor to emissions, representing 31% in 2005 and 33% in 2012. Residential energy emissions decreased by about 3% from 2005 to 2012, from 88,941 $MTCO_2e$ to 86,129 $MTCO_2e$. Commercial energy consumption represented 7% of emissions in 2005 and 10% in 2012, and its total emissions increased by about 24%, from 20,377 $MTCO_2e$ to 25,304 $MTCO_2e$ over the time period. Water comprised 6% of the total, 18,156 $MTCO_2e$, in 2005, but was reduced to 4% of the total, 11,653 $MTCO_2e$, in 2012. Solid waste, wastewater, and off-road sources made up the remaining emissions in each year. Solid waste and wastewater emissions declined from 2005 to 2012; however, off-road sources increased 117%, from 157 to 340 $MTCO_2e$, in the same period. Off-road Sources comprise a very small percentage of overall emissions, but are variable primarily due to construction-related emissions, which are based on the level of development estimated in the City each year. Municipal emissions increased slightly from 2,264 $MTCO_2e$ to 2,291 $MTCO_2e$, a 1.2% increase.

6.2 Effects of GHG Emissions

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model all climate parameters, the uncertainty surrounding climate change may never be completely eliminated. Nonetheless, the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation. Below is a summary of some of the potential effects, reported by an array of studies that could be experienced in California as a result of global warming and climate change (California Environmental Protection Agency 2006).

Air Quality: Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore, its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State (California Energy Commission 2006). According to the Cal-Adapt website, which provides projections on climate change scenarios and impacts, the City could result in an average increase in temperature of approximately 5% to 9% (about 3.1 to 5.5°F) by 2070-2090, compared to the baseline 1961-1990 period (California Energy Commission 2017).

Water Supply: Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. The California Department of Water Resources report on climate change concludes that "climate change will likely have a significant effect on California's future water resources…[and] future water demand." It also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of

future changes is uncertain." It also reports that the relationship between climate change and its potential effect on water demand is not well understood, but "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (California Department of Water Resources 2006).

Hydrology and Sea Level Rise: As discussed above, climate changes could potentially affect: the amount of snowfall, rainfall and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm, and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture: California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife: Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that the average global surface temperature could rise by 2-11.5°F (1.1-6.4°C) by 2100, with significant regional variation (National Research Council 2010). Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes such as carbon cycling and storage (Parmesan & Galbraith 2004).

6.3 GHG Mitigation

The Business-as-Usual forecasts estimate future emissions consumption patterns and emission factors with the anticipated growth in the City. Anticipated growth is estimated using data from regional planning scenarios developed by Southern California Association of Governments, the City, and other relevant sources. The most relevant growth factors are used to project emissions by sector. Compound annual growth rates were developed using the growth projections from 2012 to 2020 and from 2021 to 2035. The City's community and municipal Business-As-Usual emissions in 2020 are estimated to be 262,363 $MTCO_2e$, or approximately a 9.5% decrease from the 2005 baseline emissions of 289,289 $MTCO_2e$. By 2035, emissions are estimated to decrease by approximately 9.4% from the baseline level to 262,083 $MTCO_2e$. The City's greenhouse gas inventory is summarized in Table 3, Citywide Greenhouse Gas Inventory ($MTCO_2e$), below.

TABLE 3
CITYWIDE GREENHOUSE GAS INVENTORY ($MTCO_2e$)

Category	2005 Baseline	BAU 2020	2035	Adjusted BAU 2020	Adjusted 2035
Municipal Emissions	2,291	2,291	2,291	2,177	2,177
Community Emissions	287,025	260,072	259,792	229,481	190,653
Total Citywide Emissions	*289,289*	*262,363*	*262,083*	*231,658*	*192,830*
Reduction from 2005 Baseline	-	-9.5%	-9.4%	-20%	-33%

Numerous State measures, have been approved and/or adopted that will reduce GHG emissions in the City, once implemented. These measures do not require additional City action, but are accounted for in the City's emissions forecasts to provide a more accurate picture of future emissions and the level of action needed to reduce emissions to levels consistent with State recommendations. This forecast is called the Adjusted Business-As-Usual forecast.

Under the Adjusted Business-As-Usual scenario, City emissions were estimated to be 231,658 $MTCO_2e$ in 2020 and 192,830 $MTCO_2e$ in 2035. These emissions levels are 20% lower in 2020 than 2005 levels and 33% lower than 2005 levels by 2035. In 2020, the City is expected to meet the State-aligned reduction target through existing efforts and legislation. In 2035, the City would need to reduce 44,270 $MTCO_2e$ emissions below the 2035 Adjusted Business-As-Usual scenario to meet the State-aligned target.

Therefore, the City has started implementing new reduction measures and/or augmenting existing efforts as outlined in the City's Emissions Reduction Action Plan (ERAP) to meet the State-aligned target. Ongoing implementation of reduction measures provides additional reductions that will further help mitigate climate change and provide additional coverage if State measures do not achieve their anticipated reductions. The ERAP measures primarily focus on ways to reduce energy as energy usage accounted for 42% of all City GHG emissions in 2012. Additionally, residents emit more GHGs from natural gas consumption than electricity consumption and residential and commercial/industrial energy use is increasing, with the exception of Residential natural gas use. Therefore, as outlined in the ERAP, the City plans on focusing on increasing energy efficiency and reducing GHG emissions from energy to meet attainment goals.

The City is implementing energy efficiency strategies, as outlined in the ERAP, to increase energy efficiency in both existing and new residential and commercial development, increase energy efficiency through water efficiency, and decrease energy demand through reducing the urban heat island effect. The City, through its partnership with the SBCCOG, will obtain and distribute educational content, energy audit services, and assistance identifying potential funding sources to help implement strategies. These City actions, combined with state measures, will lead to a 24% reduction from 2005 levels by 2020 and 54% reduction from 2005 levels by 2035 (Atkins 2015).

6.4 Climate Change Adaptations

The various implications of climate change are identified throughout this element, along with the Joint Hazards Mitigation Plan, with feasible methods to avoid or minimize the associated risks. In addition, a number of goals, policies, and implementation actions in the General Plan address sustainability and the reduction of the carbon

footprint of the City. Specifically, the City will continue active participation in cooperative regional efforts to reduce pollutant emissions, as well as focus more attention on improvements at the local level. Implementation of these goals, policies, and programs would reduce impacts related to climate change associated with the General Plan which were incorporated in the following elements.

- Conservation and Open Space: Climate change policies for public/private facilities and development that recognize the sensitivity of the natural environment, as well as conservation policies specific to protecting and enhancing the natural communities
- Land Use: Residential and institutional land use policies that consider future growth, capacity limitations, and environmental factors of the city and Peninsula
- Circulation: Policies across transportation, infrastructure, resources, disposal/recovery, flood control/storm drain systems that provide guidance on plans and programs that would foster environmental conservation and promote hazard mitigation measures,
- Fiscal: Policies related to reducing the cost of operations through energy efficient methods, equipment, and infrastructure

6.5 Vulnerabilities in the City

Changes in weather and climatic conditions affect biological systems, ecosystems, and infrastructure. Anticipated vulnerabilities include an increased rate of fires, loss of natural resource, decreased water supply, and deteriorating public health.

Rising Sea Levels: Sea levels are projected to rise approximately 40 to 55 inches by year 2100. Most of the properties in the coastal zone are over 100' above sea level. Although flooding may not be of a high risk in the City, the rising sea levels may permanently damage beaches, tide pools, and increase the erosion rate of the cliffs that may lead to instability of developed properties along the coast.

Temperature Variability: Increased average temperature and extreme weather will lead to longer heat waves, reduced air quality, and changes in vegetation patters. There may be an increased risk in wildfires as a result of dry heat, drought, and increased evapotranspiration rates. Water supply may decrease, resulting from the impacts of drought, due to reductions in surface water and ground water. Residents may experience more heat-related illnesses, especially the elderly and children.

7 Other Hazards

~~*Air Pollution*~~

~~As a safety hazard, air pollution is less likely to be as catastrophic as a major earthquake or be as completely devastating as fire or flood, but a definite health hazard still exists.~~

~~Rancho Palos Verdes is fortunate in that the air quality is relatively good, due to the environmental characteristics of the Palos Verdes Peninsula (see Natural Environment). However, during periods of certain climatic conditions (e.g., Santa Ana Winds), the Peninsula is severely impacted by smog. These times of poor air quality often exceed the limits set by the South Coast Air Quality Management District (SCAQMD). It should be noted that certain types~~

~~of air pollution (primarily, sulfur dioxide) not only cause damage to man, but to plants, animals, and some materials, as well.~~

~~*Hazard Peculiar to RPV and Environs*~~

7.1 Falling from Coastal Cliffs

The coastal bluffs which rise from the ocean are indeed an impressive and beautiful geologic phenomenon. The bluffs and associated seascape draw people from all over Southern California. ~~Unfortunately, there is an element of danger that all must know and respect. That is the possibility of falling from the bluff. Several times a year~~ **This attraction causes** visitors and residents alike ~~mistakenly~~ **to** wander too close to the point of danger and fall, causing injury and, in some cases, death. ~~There appear to be several "reasons" for falling, but the principal reason is being too close.~~ Weathering and other factors often leave the geologic structure weak and subject to breakage by the person who comes too close. Also, people have been known to fall due to stumbling while walking parallel to the bluff. In addition to the closeness factor, people are often hurt while trying to descend or ascend the cliffs. This usually occurs when the person **"blazing" an unauthorized trail of his or her own instead of** is not using an established **trail** access point, but rather "blazing" a trail of his own. **To prevent injuries or death, the City requires visitors use designated trails, avoid bluffs after dark, and wear appropriate shoes. In many areas, the City posts signage to warn visitors of the dangers near a cliff edge and to stay on authorized trails.**

~~*S.2.9 General Hazards and Health Emergencies*~~

~~Due to the nature of "General Hazards and Health Emergencies," no attempt is made to identify all such factors, rather the list below provides examples of obvious occurrences:~~

- ~~Traffic accidents~~
- ~~Heart attacks~~
- ~~Drownings and near drownings~~
- ~~Industrial accidents~~
- ~~Recreation accidents~~
- ~~Drug overdose~~

7.2 Wild and Domestic Animals

The historic development of the Peninsula has slowly eliminated several species of wildlife, such as the deer and eagle. However, many of the more adaptable species have remained. At the present time, wildlife populations consist of skunks, rabbits, small rodents, a variety of birds, reptiles, coyotes and fox (See ~~Natural Environment~~ **Conservation & Open Space** Element – Biotic Resources). Peninsula wildlife does not pose a major health or safety problem to area residents, however, mixing wild animals, domestic animals and humans create potential incidents of snake bites, rabies, etc.

Along with the usual dogs and cats, the nature of development on the Peninsula has and will continue to allow for the keeping of certain large domestic animals, such as horses, in some

areas. While no major safety or health **concerns** ~~problems~~ currently exist, occasionally isolated cases are reported. These cases most generally require preventative measures rather than specific health or medical measures.

8 Emergency Services

~~*S.2.11 Safety Programs*~~

This section deals with various programs ~~and services~~ designed to avoid hazards, help during hazardous conditions, and/or provide assistance after a hazardous condition has occurred. ~~Each program is discussed and evaluated in terms of existing and proposed activities.~~

~~In general, the evaluation of existing safety programs which serve the City of Rancho Palos Verdes indicate a high level of protection.~~

8.1 ~~Health Care,~~ Emergency Medical Aid and Rescue

~~The City of Rancho Palos Verdes is served by two private ambulance companies which are licensed and regulated by the County Department of Health Services, through the County wide Emergency Aid Program. The ambulance companies currently providing service are Goodhew and Bowers. Although neither company has Peninsula based vehicles, the response time from bases in the surrounding communities of Lomita, Torrance, Redondo Beach and San Pedro averages about 6 to 7 minutes.~~

The City subcontracts ambulance service from a private company regulated by the Los Angeles County Fire Department. The ambulance vehicles are based in three separate fire stations (Station Nos. 53, 83, and 106) and an Ambulance Station (Red Cross Station No. 7) within the City of Rancho Palos Verdes.

Aside from the subcontracted ambulance service, a paramedic rescue squad (Los Angeles County Fire Department) serves the contracted areas on the Palos Verdes Peninsula. The City of Rancho Palos Verdes is served by one Paramedic Rescue Squad at Fire Station 106 on Indian Peak Road. The Paramedic Rescue program provides 24 hour service ranging from aiding heart attack victims, to assisting victims who may have fallen from one of the coastal bluffs, to aiding persons stuck in an elevator.

An additional form of rescue operation is provided for water-oriented activities. The Los Angeles County lifeguards are responsible for lifesaving operations at County beaches. Rescue operations for boats in distress off the Rancho Palos Verdes coast are currently provided by Los Angeles County, Los Angeles City, and the U.S. Coast Guard. Although each has its own jurisdiction, in an emergency, jurisdiction is rarely considered, but rather who can get there first. In particular, a base of the U.S. Coast Guard, which is a unique branch of the military responsible for saving lives and protecting the environment

among other related duties, occupies the grounds of the Point Vicente Lighthouse within the City. In the past, the Coast Guard monitored international distress frequencies with a radio station and radio navigation beacon added to the lighthouse in 1934 until the task was transferred to another station in 1980. At present, the former radio center serves as the Coast Guard Auxiliary, composed of local civilians, who track distress calls from boaters, perform search and rescue duties in local waters, and maintain radio communication networks in Southern California (Palos Verdes on the Net).

8.2 Healthcare

~~At the present time, the Palos Verdes Peninsula has no in-patient hospital facilities. Several hospitals, however, are located in surrounding communities. They are:~~

- ~~Little Company of Mary (Torrance)~~
- ~~Riviera Community (Torrance)~~
- ~~J.S. Torrance Memorial (Torrance)~~
- ~~St. Michael's (Hermosa Beach)~~
- ~~South Bay (Redondo Beach)~~
- ~~Harbor General (Torrance)~~
- ~~San Pedro Community (San Pedro)~~

~~The following table is an analysis of time and distance factors from various locations in Rancho Palos Verdes to selected hospitals.~~

The Palos Verdes Peninsula has the following acute care ("short-term") hospitals in Torrance and San Pedro, located approximately 15 minutes away (see Table 4, Area Hospitals).

Table 4
Area Hospitals

Hospital	Location
Del Amo Hospital	Torrance
Harbor - UCLA Medical Center	Torrance
Providence Little Company of Mary Medical Center	Torrance
Providence Little Company of Mary Medical Center	San Pedro
Torrance Memorial Medical Center	Torrance

The Los Angeles County Department of Health Services (LAC DHS) created a map in 2004, illustrating designated medically underserved areas and populations. The existing nearby hospitals are adequately meeting the needs of the City since the LAC DHS 2004 map excludes the City of Rancho Palos Verdes from areas that are designated medically underserved.

~~It appears that the existing hospitals are adequately meeting the needs of Peninsula residents. Study by the Comprehensive Health Planning Council of Los Angeles County confirms this adequacy.~~

Basic health services, such as communicable disease control, public health administration and enforcement of refuse collection ordinances, nursing, clinical services, and related activities are provided at no cost to the City ~~by the County Health De~~partment **Los Angeles County Department of Health Services.**

~~Currently, two paramedic rescue squads (Los Angeles County Fire Department) serve contracted areas on the Palos Verdes Peninsula. The south and west portion of the Peninsula is served the Paramedic Rescue Squad at Fire Station 106 in Rolling Hills Estates Fire Protection), while Fire Station 6 in Lomita serves the north and east. The Paramedic Rescue program provides 24 hour service ranging from aiding heart attack victims, to assisting victims who may have fallen from one of the coastal bluffs, to aiding persons stuck in an elevator. Each squad is made up of three specially trained firemen.~~

~~An additional form of rescue operation is provided for water oriented activities. The Los Angeles County Lifeguards are responsible for lifesaving operations at County beaches. With the opening of Abalone Cove, lifesaving activities will occur in Rancho Palos Verdes. Furthermore, rescue operations for boats in distress off the Rancho Palos Verdes coast are currently provided by Los Angeles County, Los Angeles City, and the U.S. Coast Guard. Although each has its own jurisdiction, in an emergency, jurisdiction is rarely considered, but rather who can get there first.~~

8.3 Flood Control

~~In Rancho Palos Verdes, flood control is normally the responsibility of two County agencies: Road Department and the Flood Control District. (See Flood Control discussion in Infrastructure for further information.) In emergency situations, such as flash flooding and mud flow, each of the agencies will carry out respective emergency operations until the immediate danger has passed.~~

The City of Rancho Palos Verdes is within the Los Angeles Flood Control District. The Flood Control District encompasses more than 3,000 square miles, 85 cities and approximately 2.1 million land parcels. It includes the vast majority of drainage infrastructure within incorporated and unincorporated areas in every watershed.

The Flood Control District was established to provide flood protection, water conservation, recreation and aesthetic enhancement within its boundaries and is the responsibility of the County of Los Angeles Department of Public Works. The Watershed Management Division is the planning and policy arm of the Flood Control District. The Public Works Flood Maintenance and Water Resources Divisions, respectively, oversee its maintenance and operational efforts.

The County Public Works Flood Maintenance and Water Resources Divisions are responsible for the operation and maintenance of County-owned storm drains and catch basins within the City of Rancho Palos Verdes. The County Public Works monitor and prepare flooding and mudflow forecast prior to and during significant storms for impacts to the County-owned storm drains. The storm drains are generally inspected in a 5 year cycle while catch basins are maintained more frequently.

While the County-owned storm drains are maintained by the County Public Works Flood Maintenance and Water Resources Divisions, the City-owned storm drains are the responsibility of the City of Rancho Palos Verdes (RPV) Public Works Department. The City of RPV Public Works Department is responsible for the operation and maintenance, including the cleaning of all City-owned storm drain catch basins at least twice per year and on a complaint basis.

In order to fund the operation and maintenance of City-owned storm drain systems, the City Council determined that a dedicated funding source was needed. Accordingly, in 2005, property owners approved the Storm Drain User Fee, which provides funding for the City's storm drain improvement and maintenance program. The Storm Drain User Fee is dedicated for the repair, reconstruction, and maintenance of City-owned storm drain systems throughout the City and for the installation of filtration devices to reduce polluted runoff and protect coastal water quality. Property owners pay the Storm Drain User Fee for parcels that use the City's storm drain system.

On November 6, 2007, the voters approved Measure C, an amendment to the User Fee ordinance to include a voter enacted Oversight Committee and a 10-year sunset of the storm drain user fee. When the User Fee rate was established by the property owners in 2005, the total User Fees to be collected over 30 years was estimated to be about $50 million to pay for known construction projects, storm drain lining, maintenance, staffing and engineering. The Storm Drain User Fee ended in 2016.

~~Mud flows usually are the result of rainfall in a natural area which does not have adequate ground cover due to fire or over use. While the primary methods for elimination of mud flows are through prevention of fires and rules governing use, these situations will inevitably occur. At such times, the principal safety program is usually immediate reseeding of the affected area.~~

8.4 Police Protection

~~The City contracts with Los Angeles County for police protection. The Lomita Station opened in 1975. The City of Rolling Hills Estates has joined Rancho Palos Verdes and Rolling Hills in its joint city program contract with the County of Los Angeles for police protection.~~

- ~~Early morning Shift – 2 patrol cars~~
- ~~Day Shift – 4 patrol cars~~

- ~~Night Shift – 4 patrol cars~~

~~Response time is a problem that is recognized by the Sheriff and City. During 1973, the average response time for early morning shift was 8.2 minutes, day shift 14.4 minutes, and night shift 13.3 minutes. In an effort to reduce response time, goals have been established as part of the contract. The Sheriff's Office has broken responses into three categories: Emergency, Immediate, and Routine, with response time goal to be achieved for each type. The percentage is a measurement of times the Sheriff will actually achieve the goal. The proposed response time goals are:~~

~~The response time goals are being achieved~~.

~~In October of 1975, a new Sheriff's Substation is scheduled to commence operation in the Lomita area. This addition is expected to increase the level of service provided by the Sheriff by reducing transit time and improving the level of supervision.~~

The City is part of a joint-contract with Los Angeles County Sheriff's Department for police protection. The Lomita Station opened in 1975 and provides police protection to the Peninsula Region, which is identified as the Cities of Rancho Palos Verdes, Rolling Hills Estates, and Rolling Hills.

The Sheriff's Department has three response categories: Emergency, Priority, and Routine for each city within the Peninsula Region. Table 5 provides annual response time for the City compared to the Sheriff's Department's targeted response time.

Table 5
Palos Verdes Response Times

Area Response Time	Rancho Palos Verdes (minutes)	Los Angeles Sheriff's Department Target (minutes)
Emergency	5.5	7
Priority	9.7	20
Routine	23.7	60

Source: Los Angeles County Sheriff's Department 2014.

During emergency situations, back-up assistance can be provided by utilizing additional Sheriff**s** units normally assigned to nearby contract cities (Rolling Hills Estates, Rolling Hills, Lomita) and unincorporated areas of the County.

The Sheriff's Department provides assistance and information to the Rancho Palos Verdes Neighborhood Watch, which provides additional crime prevention and emergency preparedness resources for local homeowners participating in the program.

8.5 Fire Protection

Currently, the County of Los Angeles provides fire protection to the City of Rancho Palos Verdes through the operation of several fire stations. In addition to Rancho Palos Verdes, the following lists of stations and equipment also serve Rolling Hills, Rolling Hills Estates, and portions of unincorporated areas (Schneider): the following fire stations **in Table 6**.

- Fire Station 6, 25517 Narbonne Avenue, Lomita
  - 1 Engine Company
  - 1 Paramedic Rescue Squad
- Fire Station 36, 127 W. 223rd Street, Carson
  - 2 Engine Companies
  - 1 Paramedic Rescue Squad
  - 1 Reserve Engine
  - 1 Battalion Chief
- Fire Station 127, 2049 E. 223rd Street, Carson
  - 1 Engine Company
  - 1 Truck (snorkel) Company
  - 1 Foam Unit
  - 1 Division Assistant Fire Chief
- Fire Station 116, 755 E. Victoria Street, Carson
  - 1 Engine Company
  - 1 Truck (ladder) Company
  - 1 Paramedic Rescue Squad
- Fire Station 105, 18915 Santa Fe Avenue, Carson
  - 1 Engine Company
  - 1 Deluge Unit
  - 2 Reserve Engines

Table 6
City Fire Stations

Fire Station No. 53	
Address	**6124 Palos Verdes Drive South, Rancho Palos Verdes**
Equipment	**1 Fire Engine, 3 Personnel**
Fire Station No. 56	
Address	**12 Crest Road West, Rolling Hills**
Equipment	**1 Fire Engine, 1 Patrol Unit, 4 Personnel**
Fire Station No. 83	
Address	**83 Miraleste Plaza, Rancho Palos Verdes**
Equipment	**2 Fire Engines (active & reserve), 1 Patrol, 4 Personnel**
Fire Station No. 106	
Address	**413 Indian Peak Road, Rolling Hills Estates**
Equipment	**1 Fire Engine, 1 Truck, 1 Paramedic Rescue Squad, 1 Battalion Chief, 1 Patrol, 1 Reserve Wagon, 1 Utility Vehicle, 12 Personnel**

The helicopter has also proven to be a very effective tool in fighting brush fires. The occasional brush fire in Rancho Palos Verdes frequently requires helicopter assistance, which has the capability of responding to a call ~~w~~within 14 **20** minutes. Based in ~~Pacoima, the helicopter generally responds with 350 gallons of water for a "drop" and a crew of 15 well trainfighters.~~**the Air Operations Section has a fleet of aircraft consisting of eight helicopters, with the newest models equipped with a 1,000 gallon water tank that uses a "constant flow" delivery system.** ~~The County has proposed that the existing~~ **Los Angeles County has designated the** helicopter pads at the Nike Site ~~be used by the Fire District for~~ **(53 Alpha) and the Palos Verdes Coastguard Station (53 Charlie) to be used for** water re-fueling.

Fire hazards can be minimized in two basic ways. The first method involves the reduction of fire starts. Preventative fire control emphasizes safety in the design, maintenance, and use of structures. Proper safety measures can effecti~~vely prevent~~ **reduce** the possibility of ~~fire. The City currently contracts with the County Building and Safety Division, and, therefore, is under~~ regulations and codes of the County of Los Angeles Uniform Building Laws (1973 edition). **The California Fire Code requires 20' to 26' minimum road widths, depending on the design, for adequate emergency vehicle access and a 3' to 5' minimum clearance around and between structures for adequate emergency personnel access around properties.**

The second method of hazards reduction emphasizes the effective response aspect of fire control. Effective response can be assisted by providing necessary access and adequate amounts and pressures of water. ~~The County of Los Angeles Fire Department has developed uniform street and development standards for fire protection in urban settings. These standards address the aspects of access and fire flow requirements and were summarized in the Public Safety section of the Envicom Study; however, the standards are primarily based on a typically flat urban area. Due to the varied terrain and development patterns on the Peninsula, the normal standards may not always apply. The general rule of thumb for response time within Rancho Palos Verdes is 3 to 4 minutes, with some exceptions. Plans for station relocation and/or an additional facility will ensure the 3 to 4 minute response~~ time. **The 2015 International Fire Code provides guidelines and standards for fire protection in urban settings and is enforced by the Local Fire Departments to reduce fire deaths, injury and property loss.**

8.6 ~~Civil Defense and~~ Disaster Preparedness and Response

~~The City of Rancho Palos Verdes, together with other South Bay member cities, make up the Area "G" County Civil Defense and Disaster Planning Board Region I of the State of California. This organization provides cities with disaster planning assistance, public information, and coordination of action programs and mutual aid agreements. Area "G" is currently assisting in the preparation of the City's first Emergency Operation Plan (EOP). The EOP is a document which sets forth the functions and resources of the City during a disaster. In addition, a plan for Standard Operating Procedures (SOP) is also being prepared. The SOP identifies specific actions that are necessary when a disaster occurs. Some of the components which are included in the SOP are listed below.~~

- ~~Emergency communications~~
- ~~Disaster routes~~
- ~~Medical facility locations~~
- ~~Emergency Operation Center (location and staffing)~~
- ~~Emergency utilization of resources~~

~~The following schematic (Figure 39) is provided as a conceptual Disaster Routes Network which may be used in the development of SOP. It should be pointed out that while the network is designed to work as a total unit, varied emergencies may disrupt flow over one or more of the segments. For example, if an earthquake were to trigger the Portuguese Bend landslide, Palos Verdes Drive South might become impassable.~~

~~The City is a member of the California Master Mutual Aid Agreement, which provides for disaster assistance from other California cities after a major disaster has been declared by the Governor.~~

The cities of Rancho Palos Verdes and Rolling Hills Estates developed a Joint Hazards Mitigation Plan in 2004. Based on the recently adopted 2010 Multi-Hazard Mitigation Plan for the State of California, the Joint Hazards Mitigation Plan is was updated in 2014. Hazard mitigation is different from other disaster management functions as its purpose is to articulate measures that make development and the natural environment safer and more disaster-resilient. Mitigation generally describes a long-term prevention method involving alteration of physical environments, significantly reducing risks and vulnerability to hazards by altering the built environment so that life and property losses can be avoided or reduced. Mitigation measures also make it easier and less expensive to respond to and recover from disasters. Disaster preparedness is different from hazard mitigation in that it focuses on activities designed to make a person, place, organization, or community more prepared to take appropriate action in a disaster with emergency response, equipment, food, shelter and medicine. Disaster preparedness is important because when time constraints or resources may delay or prevent certain long-term mitigation measures, emergency preparedness are short-term actions that can make it possible to respond and recover from disasters despite losses that may be unavoidable.

The City of Rancho Palos Verdes has been a member of the South Bay Office of Disaster Management's Area G since 1974. Area G covers all fourteen cities in the South Bay and provides services to the City for disaster planning and training, as well as representation and liaison services to the Los Angeles County Operational Area, the Governor's Office of Emergency Services, and the Federal Emergency Management Agency. The City has a joint powers agreement with the South Bay Office of Disaster Management for services. The Area G Coordinator is the on-call local expert who provides information and assistance to the City during an emergency or disaster.

The City has an Emergency Operations Plan that is based on Incident Command System principles and concepts within the Standardized Emergency Management System (SEMS). The SEMS and the National Incident Management System (NIMS) are compatible approaches, and the City recognizes these policies and uses the SEMS/NIMS as a basis for the Incident Command System structure. The SEMS/NIMS create a standard incident management system that is scalable and modular, and can be used in incidents of any size/complexity. These functional areas include command, operations, planning, logistics, and finance/administration. The SEMS/NIMS incorporate such principles as Unified Command and Area Command, ensuring further coordination for incidents involving multiple jurisdictions or agencies at any level of government.

Preparedness activities are necessary to the extent that mitigation measures have not, or cannot completely, prevent disaster. In the preparedness phase, governments, organizations, and individuals develop plans to save lives and minimize disaster damage. These activities serve to develop the response capabilities needed in the event of an emergency. The Emergency Operations Plan identifies many of the preparedness efforts that the City has undertaken or plans to undertake, such as preparedness plans, emergency exercises/training, emergency communication systems, evacuation plans/training, resource inventories, emergency personnel/contact lists, mutual aid agreements, public education/information, and improving evacuation routes (Figure 5, Disaster Routes). The Emergency Operations Plan also details response activities the City will follow pending the occurrence of an actual disaster or emergency. These activities help to reduce casualties and damage, and speed recovery. Response activities could include public warning, notification of public authorities, evacuation, rescue, assistance, activation of the Emergency Operations Center, declarations of disaster, search and rescue, and other similar operations addressed in the updated Emergency Operations Plan.

8.7 Emergency Communications

~~In times of emergency, whether major or minor, a dependable and flexible communications system is essential. For the everyday emergency, the telephone is the fastest and most reliable communications systems available. In order to make the telephone system even more effective, State law now requires that all cities must develop a standardized single emergency services telephone number system (see Communications Systems in Infrastructure). The "911 System" will ultimately provide a single emergency telephone number (911) which, when called, will route the call to Public Safety Answering Point (PSAP), which in turn transfers it to the correct emergency responding agency (e.g., fire, police, etc.), thus cutting the response cycle. Although the system is still in the initial planning stages, it is expected that, in Los Angeles County, the system will be a sophisticated computerized mechanism, and the public "pay" phones will not~~

require a coin to operate the 911 number. (County of Los Angeles, Communications Department.)

During times of major emergency or imminent disaster, the following communications systems can be used to disseminate emergency warnings, information, instructions, and requests:

- Radio
- Television
- Microwave Systems
- Amateur Radio (ham radio)

The development of an emergency communications program is included as an integral part of the Standard Operating Procedure (see Civil Defense and Disaster) which is currently being prepared.

In times of emergency, a dependable and flexible communications system is essential. The telephone is the fastest and most reliable form of communication available. The "911 Telephone System" provides a single emergency telephone number (911), which, when called, will be routed to the correct agency (e.g., fire, police, etc.). In 2007, an Emergency Communications Center was constructed at the City Hall complex to support the City's normal emergency communication systems. When activated due to the loss of the normal communication methods, the Emergency Communications Center provides emergency communications by utilizing amateur radio operators.

The amateur radio operators that would staff the Emergency Communications Center during times of emergency are part of the Los Angeles Disaster Communications Service (DCS). DCS is administered by the Sheriff's Department Emergency Operations Bureau. DCS is an element of the federal government's Radio Amateur Civil Emergency Service (RACES), which was established under the Federal Communications Commission Rules.
Regulations as part of the amateur radio service. RACES supports emergency management entities throughout the United States. During major incidents, DCS amateur radio operators coordinate, transmit, and receive command and liaison traffic for the County, City, Sheriff's Department, and Fire Department, as well as other disaster relief agencies.

In 2005, the City established the Peninsula Volunteer Alert Network with the goal of providing emergency communications at the neighborhood level. The Volunteer Network operators communicate to and from the City through the Emergency Communications Center. When completely staffed, there will be a Volunteer Network operator in each neighborhood supporting members of the Community Emergency Response Team (CERT) and Neighborhood Watch captains.

9 Other Safety Services

9.1 Animal Control

~~Currently, the County Animal Control Department I responsible, under contract, for enforcing the provisions of the Animal Control Ordinance (Los Angeles County Ordinance 4729) and for carrying out other related functions. The animal control program consists of the following major operations (Preston, May 1975):~~

- ~~Enforcement of "leash law," license law, rabies law, etc.~~
- ~~Issuing of permits for stables, shelters, etc.~~
- ~~Inspection of boarding areas, animal clinics, and suspected health, safety, and mistreatment areas.~~
- ~~Removal of dead, sick, or unwanted animals.~~
- ~~Operation of spaying and neutering clinics.~~
- ~~Apprehension or destroying of menacing or sick wildlife.~~
- ~~Relocation of appropriate wildlife (in coordination with California Department of Fish and Game).~~
- ~~Education, through the dissemination of literature.~~

~~Other organizations which are involved in related programs include the Humane Society and the 4-H Club.~~

Currently, the Los Angeles County Department of Animal Care & Control is contracted to enforce the provisions of the City's Animal Control Ordinance (Chapter 6.04), as well as to provide other animal related functions. The animal control program consists of the following major operations:

- **Enforcement:**
  - **Respond to allegations of code violations, such as leash law violations, the feeding of prohibited wildlife, etc.**
  - **Canvass for expired animal licenses, as needed or requested.**
  - **Investigate allegations of animal cruelty.**
  - **License and inspect animal related businesses, as needed or requested.**
  - **Dog barking complaints**
- **Field Services and Outreach:**
  - **Renew animal licenses.**
  - **Provide low-cost vaccination clinics, as needed or requested.**
  - **Respond to service calls, such as stray and dead animal pickup.**
  - **Return identifiable animals to owners in field, when possible.**

- Provide educational materials and programs upon request, when available.

- Shelter Services:
  - Provide impounded animals with appropriate care, including food, shelter and medical treatment.
  - Impound animals for at least the state mandated holding period.
  - Vaccinate impounded animals, when necessary.
  - Provide adoption and fostering opportunities, when possible.
  - Post the photographs of impounded animals on the County's website to help owners find their lost pets.
  - Provide low-cost spay/neutering and free micro chipping of all adopted animals.

In cases of natural disasters, such as fire and earthquakes, the Lomita Sheriff's Department implements an emergency evacuation plan to relocate animals to safety. The Lomita Sheriff's Department sponsors the Palos Verdes Peninsula Equine Rescue Team, which is a group of volunteers that is trained to conduct emergency rescue, evacuation, and sheltering services for horse and other large domestic animals during local emergencies, such as brush fires and inclement weather. According to the Los Angeles County Department of Animal Care and Control, the Carson shelter is designated as an emergency shelter for animals evacuated during disastrous events on the Peninsula. Additionally, the City has a Memorandum of Understanding with the Area G Veterinary Disaster Team, a California nonprofit corporation that assists in providing temporary housing for animals and emergency veterinary medical care by setting up a temporary triage animal center. The Veterinary Disaster Team also assists in supplying lost and found animal information services to the public.

9.2 Air Pollution Control

~~The Los Angeles County Air Pollution Control District (APCD) is responsible for monitoring and regulating air quality. Regulation VII of the APCD was adopted by the Board of Supervisors in 1974. The regulation referred to as the Emergency Episode Plan, establishes a uniform set of rules which governs actions to be implemented by the APCD, local governments, business, and citizens during period of high contaminants. The plan calls for a system of alerts which primarily require shut down of various polluters.~~

South Coast Air Quality Management District (AQMD) is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties, the smoggiest region of the United States. Rancho Palos Verdes is part of the Western Region of AQMD's four-county jurisdiction. AQMD is responsible for controlling emissions primarily from stationary sources of air pollution, including anything from large power plants and refineries to the corner gas station.

AQMD develops and adopts an Air Quality Management Plan, which serves as the blueprint to bring areas into compliance with federal and state clean air standards. Permits are issued to many businesses and industries to ensure compliance with air quality rules. AQMD staff conducts periodic inspections and continuously monitor air quality from different locations throughout the four-county area. This allows AQMD to notify the public whenever air quality is unhealthy.

9.3 Codes and Ordinances

There are numerous codes and ordinances which set safety standards, specifications, and regulations. Although the City has developed certain safety regulations, contracts and service agreements with the County currently set most safety standards. **The Building Code, Zoning Ordinance and Subdivision Ordinance are enforced by the City's Community Development Department while the Fire Code is enforced by the Los Angeles County Fire Departments.** ~~The following list of codes and ordinances are those of safety~~ concern to

- ~~Building Code~~
- ~~Zoning Ordinance~~
- ~~Fire Code~~
- ~~Subdivision Ordinance~~
- ~~Health and Safety Ordinance (State)~~

~~In many cases, the County is responsible (by contract) to enforce many of these codes and regulations.~~

While the various codes and ordinances cannot be expected to be perfect for all situations, they should: "(1) reflect the concept of risk and uncertainty; (2) be dynamic in allowing for amendment resulting from new knowledge and improved understanding; (3) be rationally interrelated and tied to a plan which considers probable forms of natural disasters among its elements; (4) be based on a logic which the legislator, administrator, and citizen can fully comprehend; thus, allowing for effective participation in the decision-making process" (Petak, et al, Pg 145).

One of the most significant and important documents ~~in respect~~ **relating** to safety ~~is the building code~~ **are the building codes. The City's Building and Safety Division uses the most up to date codes to implement and enforce construction standards. In addition to these Codes, the Building and Safety Division coordinates with the City's geotechnical consultants on the review of geology and soils reports for various construction projects, primarily due to the area's physical characteristics, such as slope, soils, and geologic structure. Specifically, the primary purpose of the California Building, Plumbing, Mechanical and Electrical Codes are to protect the public health, safety, and welfare by setting minimum construction and building standards which minimize hazard impacts.** ~~Rancho Palos Verdes currently is governed (by adoption) by the County of Los Angeles' Uniform Building Thwt, B7Z3i(UnBde)up of four separate ordinances:~~

- ~~Building~~
- ~~Plumbing~~
- ~~Mechanical~~
- ~~Electrical~~

~~The primary purpose of the U.B.L. is to protect the public health, safety, and welfare by setting minimum construction and building standards which minimize hazard impacts. While all portions of the U.B.L. are important, Chapter 70 (Excavation and Grading) and Section 2314 (Earthquake Regulations) of Chapter 23 (Engineering Regulations) are particularly important to Rancho Palos Verdes. This is primarily due to the area's physical characteristics, such as slope, soils, and geologic structure. It should be noted that, while the County's U.B.L. is substantially modeled after the Uniform Building Code (International Conference of Building Officials), the recently published U.B.L. (1975) is approximately two years behind the Uniform Building Code in respect to the establishment of tougher minimum building and construction standards.~~

The City adopted its original Development Code, Zoning and Subdivision Ordinances, in December 1975. As with most other codes and ordinances, the zoning ordinance is principally designed to protect the public health, safety, and general welfare. Within the numerous zoning districts (based on land use), regulations generally specify: the use or function of a structure; the density of population; the lot coverage (e.g., structure and open space); **structure height, soil stability investigation** and the mini~~mum dimen~~sions **setbacks** ~~of a~~ the structu~~re. State law requires that zoning be consistent with the General Plan. Upon adoption of this General Plan, the accompanying Zoning Ordinance will be one of the first steps in the implementation process.~~

Over time, new and amended Code sections have been added for a more effective implementation of the City's goals and objectives.

10 Hazard Potential and Risk

Analysis of the hazards inventory indicate that, while all hazards are of concern, geologic hazards (earthquakes and landslides, primarily), fire, and flood are potentially the most destructive in terms of life and property. Of these three, earthquakes and associated secondary effects are capable of the most widespread damage. Fire and floods are generally confined to isolated areas. This is due to the diverse topography and the ability of man to prevent and/or deal with flooding and fires. This section discusses earthquake and associated hazards in terms of potential destruction a~~nd risks. Some of the information was based on a study prepared by the National Oceanic and Atmospheric Administration (NOAA) entitled A Study of Earthquake Los Angeles, California Area (1974).~~

The census indicates that fewer than 220 residential structures were constructed on the Peninsula prior to 1933. A majority of these older structures appear to be within the Palos Verdes Estates and Miraleste areas. In a larger earthquake, it is assumed that the major

structural damage might result in buildings constructed before 1933, when building code requirements for seismic resistance were adopted. Furthermore, due to vintage and construction techniques, it is expected that the most vital public buildings (administrative, fire, police) will withstand major quakes and recover quickly enough to function as emergency operation assistance centers.

Estimates of infrastructure damage due to a major earthquake will vary from negligible to widespread. ~~It is suggested that~~ **In the event of a significant earthquake,** major supply lines (water, gas) ~~might~~ **may** be subject to ~~major~~ **serious** damage. Within Rancho Palos Verdes, the major concern lies with vital services located on landslide areas. An earthquake could trigger landslides, which could ~~eventually~~ result in severe damage to the roadway, water, communications, and power networks. Furthermore, ~~there seems to be some question as to~~ **based on** the condition of some of the water storage facilities **and pipelines** in the City**,** ~~and~~ their ability to withstand a major earthquake.

~~The predictive analysis of events to be expected from the Newport Inglewood fault zone has defined these events in terms of a magnitude and a recurrence interval.~~ The level of risk associated with each event caused by a fault is indicated by the recurrence interval in much the same manner as the risk from other natural haz~~ards, such as flooding, is defined by a recurren~~ce interval. For example, it is common practice to design flood-prevention works to accommodate the flows from a 100-year storm. Where a higher level of protection is desired, as, for example, along the Santa Ana River in Orange County, the design levels are increased to accommodate the flows from storms occurring at roughly 300-500 year intervals.

The risk of earthquake should be considered in a similar manner. Design for the 100-year event is considered minimum; where a higher level of protection is desired, such as for hospitals, design levels should be increased to protect against earthquakes with longer recurrence intervals. The levels ~~of the following~~ **in** Ttab~~l~~le 7 are recommended for earthquakes expected from the Newport-Inglewood fault zone.

Table 7
Risk of Earthquake

Use	Recurrence Interval	Expected Magnitude
Limited occupancy (warehouses, automated manufacturing facilities, etc.)	100 years	5.2
Normal occupancy (residences, stores, etc.)	150 years	5.6
Critical facilities (hospitals, fire and police stations, schools, critical utilities, etc.)	300 years	6.5

The risk of an earthquake from the San Andreas fault is a special case. As discussed in the previous section, a major or "great" earthquake is considered imminent. ~~As a result, it is recommended that all structures, except possibly limited occupancy, be designed for an earthquake of magnitude 8.5 on the San Andreas fault. (Envicom)~~

11 Impacts

The intent of the Safety section is to identify potential hazards and hazard areas, and to provide policies and recommendations by which to increase safety and reduce hazards. Although the principal impact of this section is, for the most part, expected to be beneficial to both man and natural systems, some adverse economic conditions may arise.

The financial impact will probably be the City's greatest concern. The development of future safety programs and the possible expansion of existing programs may or may not require some public financing. If required, the initial costs of such programs, however, are expected to be largely offset by Federal, State, and county assistance programs, and through the ultimate reduction of damage caused by hazards.

Costs to individuals may also increase in the form of construction costs, due to future building standards, and in the form of hazard prevention costs due to landscaping and services; however, these too are expected to be offset in the long term by reduction of damage and/or loss of possessions and individuals.

~~A far reaching new concept worthy of consideration is the establishment of a Public Safety Department. A cursory feasibility study of the financial impact resulting from the establishment of such a department appeared to be very favorable, and indicated operational cost reduction along with improvement of services.~~

DRAFT VISUAL RESOURCES
comparison to current General Plan Introduction
4/26/2018 version

Note: This document compares the proposed Draft Visual Element with Visual Aspects portion of the current Sensory Environment of the General Plan. Changes are shown as follows: **bold underline** text for new text proposed to be added, ~~strikethrough~~ text for existing text proposed to be removed, and normal text for existing text to remain.

VISUAL RESOURCES ELEMENT ~~ASPECTS OF THE PLAN~~

The Peninsula is graced with views and vistas of the surrounding Los Angeles basin and coastal region. Because of its unique geographic form and coastal resources, these views and vistas are a significant resource to residents and the many visitors, as they provide a rare means of experiencing the beauty of the Peninsula and the Los Angeles region. Views of the ocean, islands, distant mountains, and urban lights are not only important from public spaces, such as arterials, trails, parks, and open spaces, but also from private property. Additionally, views of open space areas, such as canyons, pastoral environment, ridges, and bluffs, are vital from both public and private spaces, as these areas contribute to the unique character of the City.

City residents have long identified the preservation of views and the harmonious development of its neighborhoods among their top priorities for the City. When the City first incorporated it was at risk of losing views and the unique visual character of the City due to unmanaged development and vegetation growth.

Upon incorporation, the City developed policies in its General Plan to preserve visual resources. Later, the City adopted and implemented various Ordinances and Guidelines to protect visual resources from private and public property. ~~This section~~ The purpose of this Element is to provide continued guidance through the establishment of goals and policies to ensure the continued ~~deals with the~~ preservation, restoration, and enhancement of significant visual ~~aspects~~ resources within the City ~~related to Rancho Palos Verdes.~~

Goal

1. Preserve views and vistas for the public benefit and, where appropriate, the City should strive to enhance and restore these resources, the visual character of the City, and provide and maintain access for the benefit and enjoyment of the public.

The Visual Resources Element begins by introducing the three main types of visual resources: views, vistas, and urban design. Following is a discussion of the specific visual resources within and outside of the City. The next section provides a framework

for how visual resources are viewed from "viewing stations," which include viewing sites, viewing points, and visual corridors. The next section focuses on areas within the City that should have views preserved or restored, including undeveloped areas. The chapter concludes with a discussion of the various implementation tools, including Visual Resource Policies that the City has used and will continue to use to preserve, restore, and enhance visual resources.

~~The material presented below is of a local nature and significance, and is not intended to present any specific corridor or combination of corridors for designation, such as for State Scenic Highways.~~ The associated visual ~~aspects~~ resources, viewing stations, and areas to be preserved, restored or enhanced ~~of the General Plan~~ are denoted on the accompanying map (Figure 1) which provides the reader a graphic understanding of the descriptions ~~provided.~~, ~~with a brief explanation of each aspect presented below. Visual aspects developments (residential, commercial, etc.) are addressed below, as well as in their respective sections.~~

2 Policies

~~It is the policy of the City to:~~

1. Develop controls to preserve existing significant visual aspects from future disruption or degradation.
2. Enhance views and vistas where appropriate through various visual accents.
3. Preserve and enhance existing positive visual elements, while restoring those ~~which are lacking in their present visual quality~~ that have been lost.
4. Consider the visual character of neighborhoods consistent with the General Plan and Neighborhood Compatibility Guidelines.
5. Develop and post ~~well located~~ vista points to provide safe off-road areas from which ~~where~~ views may be enjoyed. ~~These should have safe ingress and egress and be adequately posted.~~
6. Develop and maintain, in conjunction with appropriate agencies, public access to paths and trail networks for the enjoyment of related views.
7. Require developers, as developments are proposed within areas which impact the visual character of a corridor, to address treatments to be incorporated into their projects which enhance a corridor's imagery.
8. Require developments ~~within areas~~ which will impact corridor-related views to ~~fully analyze project impacts in relation to corridors, in order to~~ mitigate their impact.
9. Develop a program for the restoration of existing areas which negatively impact view corridors~~, through the urban design element (e.g., landscaping and undergrounding).~~
10. Require residents and developers to mitigate light pollution associated with developments.
11. Maintain strict sign standards so as to ensure that signs are harmonious with the building, the neighborhood and other signs in the area.
12. ~~Require developments which lie between natural areas to be maintained and viewing corridors to show how they intend to mitigate view disruption.~~

13. Work with adjoining jurisdictions to preserve and restore the view corridors from major thoroughfares, taking into account the issues of traffic safety.

3 Types of Visual Resources ~~Aspects~~

Visual ~~aspects~~ Resources (See Figure 1) are divided into t~~he two~~ three categories: Views, ~~and~~ Vistas and Urban Design. This section of the Element describes the types of views, vistas and urban design to be preserved, restored and enhanced within the City.

3.1 Views

A view is a scene observed from a given vantage point. Views represent ~~an unfocused~~ panoramic visual aspect which extends to the horizon of a distant focal point (Catalina Island, rather than ~~a~~ the lighthouse oriented focused view), and has an unlimited arc and depth. These views can be either continuous (as views from along a public corridor), or localized (as viewed from a specific site) ~~in nature~~.

3.2 Vistas

A vista is a confined view, which is usually directed toward a ~~terminal or~~ dominant element or landmark (e.g. lighthouse) ~~feature.~~ A vista, unlike a view, may be created by features that visually frame the vista ~~in its entirety and is therefore subject to close control through visual enframements~~. Each vista has, in simplest terms, a viewing station, an object or objects to be seen and ~~an~~ intermediate features that frame the vista ~~ground.~~ ~~The three together make a unit and are usually conceived as an entity.~~ If one or more of the elements already exist and are allowed to remain, then the others must, of course, be designed in harmony.

3.3 Urban Design

Urban design recognizes that the visual form of the City's neighborhoods and commercial areas can also provide a pleasing visual palette to residents and visitors. With urban design, the City is concerned with ensuring that the development of each parcel or additions to existing structures occurs in a manner that is harmonious with the land and also maintains an architectural aesthetic and character representative of the neighborhood and the City.

Properly planned and designed street landscape also adds to a neighborhood's aesthetics and character. Since incorporation, the City's street tree and landscape management practice has largely been one that involves the uniform installation of landscape along street frontages and medians. In recognition that streetscape is a more significant component of urban design, a broader vision to the City's management of street landscape is necessary to add and preserve this visual accent to neighborhood aesthetics and character.

4 Visual Resources

The following are visual resources within and surrounding the City. They fall within three general categories: natural, built, and urban design.

4.1 Natural Visual Resources

Natural visual resources include the following:

Natural Areas: Natural features that provide viewers with a feeling for the rural atmosphere of the City. The best examples are the Palos Verdes Nature Preserve, major canyon systems, and open spaces adjacent to view corridors.

Shoreline: The irregular shoreline configuration is a prominent feature along the Peninsula, including Portuguese Point, Inspiration Point, Long Point, and Point Vicente. Distant shorelines can also be enjoyed from multiple locations throughout the Peninsula that are visually accessible to the public.

Sea Cliff: The Peninsula shoreline is characterized by vertical cliffs forming rocky, narrow beaches and coves. Sea cliffs are observed from the Palos Verdes Nature Preserve and other open space areas that are located close to the sea cliff, locations at higher hillside elevations, and positions offshore. Offshore observation locations offer the maximum viewing orientation of the total sea cliff landscape.

Major Canyons: These represent the location of additional vegetation, shadows, and other visual focal elements in the dominant topography of the City.

Major Ridges: Ridges complement the canyon element of the topography, with the major ridge systems, spines, and spurs representing outstanding visual features of the Peninsula area.

Significant Tree Groupings (mass, linear): Because of the random presence of tree groupings within the City, significant masses or lines of trees represent a natural focal point of interest, and set a theme for some areas. Examples include tree groupings found in the Portuguese Bend area and along Palos Verdes Drive East.

Night Sky: The semi-rural residential development and large areas of open space provide a low level of background lighting and associated glare that can obstruct views of the night sky. As a result, the City has some of the best night sky views within the greater Los Angeles basin. The southerly portion of the City, sheltered by the light glare of the Los Angeles basin, offers the best night sky viewing.

4.2 Built Visual Resources

Built visual resources tend to be major architectural elements that focus a viewer's attention along major corridors and on major public lands. Examples of noteworthy focal points include Wayfarers Chapel, Point Vicente Lighthouse, and the Vincent Thomas Bridge. This category also includes views of the surrounding cityscape and urban lights at night.

4.3 Urban Design Visual Resources

Visual resources are not only views of scenic areas, but also include the style and character of structures, landscaping, and signage (residential and non-residential) through urban design. Since incorporation, the City has developed different policies to manage growth and to enhance and protect the visual character of its neighborhoods. The City has review guidelines for new construction and additions to existing structures to enhance urban design. Such design standards and guidelines are used to review residential development; they are discussed in Section 7, Implementation Tools. A good example of a commercial urban design focal point is the Golden Cove Shopping Center. Some of the more visible residential urban design examples include the Enclave at Oceanfront Estates, Seabreeze and Tramonto Residential Tracts, Portuguese Bend, Terranea's casitas and villas, and the Trump National Residential Tracts. Additionally, within some neighborhoods are public and private landscaping design characteristics worth noting: the ecologically based streetscapes of Oceanfront Estates, the mature trees of Miraleste, and the semi-rural streetscapes of the Portuguese Bend neighborhood.

~~Visual Accents~~

~~Views, and Vistas can be enhanced through various visual accents, with the latter being dramatically affected by the existence of one ore more of these accent elements. These various visual accents can be grouped under the following categories.~~

~~Enframement~~

~~Enframements constrict or focus views (represented by topography, landscape, building masses, etc.) which in turn creates or enframes a contrast of vistas, both before and after passage through the visual enframement.~~

~~Significant Focal Points~~

~~Structural Focal Points~~

~~Major architectural elements tending to focus view attention from a variety of view locations along major corridors and from major public lands.~~

~~Natural Focal Points.~~

- ~~*Significant Tree Groupings (mass, linear):* Because of the random presence of mature tree groupings within the City, significant masses or lines of trees represent a generalized~~

~~natural focal point of interest and set a theme for some areas of the community (Portuguese Bend area, Palos Verdes Drive East)~~

~~*Major Canyons:* These represent the location of additional vegetation, shadows, and other visual focal elements in the dominant topography of Rancho Palos Verdes.~~

~~*Major Ridges:* The complement to the canyon element of the topography, with the major ridge systems, spines, and spurs represents one of the most outstanding features of the Peninsula Area.~~

5 Viewing Stations

Viewing stations (see Figure 2) are places where people can enjoy the visual resources of the City. They include both public and private spaces. Viewing stations are described in three categories: viewing points, viewing sites, and view corridors.

5.1 Viewing Points

Viewing points are locations at private residences and roadway turnouts along vehicular corridors that afford viewing of visual resources. Significant turnout improvements along Palos Verdes Drive South and West, have been made since the City's incorporation, and include turnouts at the Terranea Resort, Abalone Cove, along Hawthorne Boulevard, and at Trump National Golf Club.

5.2 Viewing Sites

Viewing sites are larger areas that, due to their physical locations on the Peninsula, provide a significant viewing vantage. Since the City's incorporation, several viewing sites have been established, including Del Cerro Park, Hesse Park, Lower and Upper Point Vicente, Oceanfront Estates public trails, the Palos Verdes Nature Preserve, Trump National's public trails, Founder's Park, and Terranea's public trails.

5.3 View Corridors

View Corridors are ~~The visual character of a city or region affects how people relate either positively or negatively to an area. Primary visual impact is conveyed through the~~ major circulation roads, ~~or path~~ and trail networks within the City that afford views of the visual resources. It is along these routes that a majority of the residents and nonresidents view the City.

~~This section's focus on major vehicular, path and trail networks is not reflecting their importance over other visual corridors within Rancho Palos Verdes, but is merely an indication that these are the primary corridors which provide a visual interpretation to a majority of the populace.~~

Vehicular Corridors. Vehicular view corridors should take into account two elements, the visual quality of a corridor, and safety problems associated with visual distractions. The

interruption created by vehicles slowing for view enjoyment introduces potential hazards and reflects possible lack of adequate visa points for enjoying a specific vista. As indicated in the accompanying Visual Resources map, the primary vehicular corridors are along Palos Drive West, East, and South. Other vehicular corridors are along Western Avenue, Hawthorne & Crenshaw Boulevards, Crest & Highridge Roads, and Miraleste Drive.

Path and Trail Corridors. Major paths and trails in the City primarily ~~will~~ run along bordering significant natural features (ridge route-coastal bluff). Therefore, visual impacts from existing/proposed developments along these routes occur mainly on one side, with minor occurrences on both sides. This condition, whereby development exists or is proposed on one side or both sides of path or trails, generates concern over how developments appear from path and trail networks. In the past, tract developments on the Peninsula have been concerned with street side appearance. Incorporation of path and trail routes introduces a need for visual appearance considerations to occur on both street and path or trail frontages. Areas where both sides are fronted by development appear more structured in their visual treatment and could provide transitional areas prior to paths or trail intruding into areas with large open vistas.

~~Adjacent Lands Impacting Corridors~~
~~Concern for the appearance of adjacent land areas which impact major corridors is reflected in the indication of areas that are to be preserved, restored, or enhanced.~~

6 Preservation and Enhancement of Visual Resources

6.1 Natural Areas to be Preserved

Most large areas of natural land are protected from development by the Coastal Specific Plan and the City's Palos Verdes Nature Preserve, but some areas of natural land, especially the City's right-of-way along Palos Verdes Drive West, East, amd South, are vulnerable to alteration due to view clearance needs, roadway improvements, and/or trail enhancements (see Figure 3).

6.2 Developed Areas to be Preserved

~~Areas along corridors which are of a significant visual appeal.~~ Developed areas of particular visual interest are mainly located along Palos Verdes Drive South. From this corridor, specific developed areas should be preserved: Point Vicente Lighthouse, Terranea Resort, Trump National Golf Course, and Wayfarers Chapel. Other notable developed areas that are to be preserved are Green Hills Cemetery along Western Avenue and the median landscape along Miraleste Drive.

6.3 Developed Areas to be Restored

~~Many of the conditions in these certain areas, generated through land grading and County Street Design Standards, allowed visually negative site and road patterns to impact major~~

~~corridors.~~ Since the adoption of the initial General Plan in 1975, certain corridors (e.g., Crest Road between Hawthorne Boulevard and Crenshaw Boulevard) have been restored to enhance and preserve views and vistas. Roadway and median improvements along Palos Verdes Drive South and West have also been completed. However, due to past grading and Los Angeles County's Street Design Standards, which caused visually negative site and road patterns to impact major view corridors, there still exists a need to restore certain view corridor segments. Two corridors in need of major restoration are Western Avenue and Hawthorne Boulevard. More specifically, the Western Avenue corridor needs additional median and roadway enhancements and Hawthorne Boulevard needs median and parkway enhancements to preserve the aesthetic value of the roadway and its views and vistas.

6.4 ~~Undeveloped Areas to be Urbanized Which Impact the~~ Visual ~~Character~~ of Corridors to be Preserved

The concern over these areas is how a proposed development will visually impact a corridor. ~~Areas under this designation would not affect significant views or vistas, but could provide adjacent visual elements which either positively or negatively impact established visual corridors.~~ The chances for blocking, altering, and degrading existing significant views and vistas within the City could be at the mercy of potential developments. Since the time of the City's incorporation, large underdeveloped areas adjacent to Crest Road and Palos Verdes Drive South/West have been developed with residential tracts that are designed to protect views and vistas. There is also a continuing need to manage foliage bordering visual corridors to keep it from obstructing views. Smaller, contiguous and non-contiguous underdeveloped parcels still exist throughout the City and should be designed to consider impacts to visual resources.

~~Undeveloped Areas to be Urbanized Which Impact Corridor Related Views~~

~~These critical concern areas will have the greatest effect on altering the imagery provided along major corridors. The chances for blocking, altering, and degrading existing significant views and vistas within the City could be at the mercy of potential developments.~~

~~Natural Areas~~

~~Major natural areas which will be preserved and viewed from corridors are indicated here. These natural features provide viewers with a feeling for the rural atmosphere in the City.~~

6.5 Night Sky to be Preserved

A nighttime sky in which stars are readily visible is a valuable scenic/visual resource. In urban areas, views of the nighttime sky can be diminished by light pollution. Light pollution refers to excessive use of artificial light. Excessive light can be visually disruptive to humans and nocturnal animals, and is also indicative of a high level of energy consumption. Examples of light sources that commonly cause light pollution

are residential outdoor lights, streetlights, parking lot lights, and field lighting. Projects should be designed to mitigate light pollution.

7 Implementation Tools

Since the City's incorporation, the City Council has adopted various documents to assist the public in proposing and reviewing developments in accordance with the General Plan and Municipal Code. This section describes the different ordinances, documents, and methods by which the City manages and preserves views, vistas, and urban design within the City. The following are implementation tools that work toward achieving the preservation and enhancement of visual resources. All of these documents are available for viewing at the City's Community Development Department.

7.1 View Restoration and Preservation Ordinance and Guidelines

In November 1989, City voters passed an initiative to protect views by establishing height restrictions for residential structures and foliage. This view ordinance was codified into the City's Municipal Code. Subsequently, guidelines and review procedures were adopted by the City Council to implement the ordinance and codes related to building structure heights and view impairment caused by foliage. These guidelines are known as the Height Variation Guidelines and the View Restoration and Preservation Guidelines and Procedures.

To be consistent with the intent to protect views and vistas, the City Council also adopted a policy to protect views impaired by foliage located on City-owned property including City street foliage. View restoration requests involving City-owned trees are processed by the City pursuant to the City's Municipal Code.

7.2 Guidelines and Procedures for Neighborhood Compatibility

The General Plan contains policies on many aspects of residential development, including neighborhood compatibility. Neighborhood compatibility is an urban design concept that attempts to balance new residential development with the preservation of the rural and semi-rural character of the City. To this end, in 2003, the City adopted neighborhood compatibility guidelines for property development in the City as a means to further the objectives of the General Plan to preserve and enhance the character of established neighborhoods. The City Council-adopted Neighborhood Compatibility Handbook consists of suggested guidelines meant to assist residents and developers in the preparation and design of residential projects through project scale, architecture, and setbacks within the context of the immediate neighborhood within the same zoning district.

7.3 Coastal Specific Plan

A Coastal Specific Plan was prepared in 1978 to further study and assess resources along the City's coastline. One of the goals of the Coastal Specific Plan is to provide additional guidance beyond the General Plan and further define policy for visual resources and development along the coastline. Accordingly, the Coastal Specific Plan further defines the General Plan's concepts of visual corridors and viewing focal points as they pertain to the City's coastline. The Coastal Specific Plan also contains community design guidelines to ensure that public and private development conforms to the principles set forth in the General Plan.

7.4 Western Avenue Specific Plans

The intent and purpose of the Western Avenue Specific Plans are to establish a guide for the comprehensive redevelopment or renovation of the existing commercial development located along Western Avenue. The Specific Plans include design and regulatory standards that are tailored to the unique features and characteristics of the area. In addition, the Specific Plans are designed to protect adjacent residential properties from the impacts of commercial development and to encourage revitalization. The plans identify themes that are designed to create an identity and distinguish the area from neighboring Los Angeles. The plans integrate the unique aspects of the Eastview area into the overall character of the City, assist in preserving views, and improve the urban design for this area.

~~Viewing Areas~~

~~Public land areas which are either solely for use of viewing or contain site designed areas for this purpose were grouped under the following two categories:~~

~~Viewing Sites~~

~~Existing public site areas which, due to their physical locations on the Peninsula, provide a significant viewing vantage.~~

~~Viewing Points~~

~~Turnouts along vehicular corridors for the purpose of viewing.~~