CITY OF RANCHO PALOS VERDES

MEMORANDUM

TO: CHAIRMAN & MEMBERS OF THE PLANNING COMMISSION

FROM: JOEL ROJAS, COMMUNITY DEVELOPMENT DIRECTOR

DATE: AUGUST 11, 2015

SUBJECT: GENERAL PLAN UPDATE – NEGATIVE DECLARATION, FINAL DRAFT TEXT AND LAND USE MAP

Project Manager: So Kim, Senior Planner

RECOMMENDATION

Recommend that the City Council certify a Negative Declaration and approve the updated version of the General Plan document and General Plan Land Use map.

DISCUSSION

On June 23, 2015, the Planning Commission was presented a draft version of the General Plan document and General Plan Land Use map. The Commission conceptually approved the draft text with certain edits along with the draft General Plan Land Use Map so that the related environmental document could be prepared and publicly circulated for final approval on August 11th.

Staff has determined that the proposed General Plan update would not have a significant effect on the environment and thus the attached Negative Declaration (ND) was prepared. This document along with the attached final draft version of the General Plan document and General Plan Land Use map was posted on the City's website on July 30th, in advance of the August 11th public hearing. The 20-day public comment period on the Draft ND began on July 9th and ended on July 29th.

Planning Commission Directed Edits

Staff has made the following edits as directed by the Planning Commission at its June 23rd meeting:

- Very High Fire Hazard Severity Zone (VHFHSZ) Map – Commissioners directed Staff to verify the accuracy of the VHFHSZ map included as part of the General Plan update. Staff contacted the Los Angeles County Fire Department and confirmed that said map is correct (see attached email from Assistant Chief Lopez, Forestry Division). As such, no changes were made to this map.
- Incorporated changes suggested by Ms. Lenne Bilski that were read into record by Staff at the June 23rd Commission hearing (see attached email with Staff's comments in red).
- Conservation & Open Space Element
    - Rounded up the overall area of City purchased Cherry Hill lots from 5.846 acres to

    - 5.8 acres.
    - Replaced the word "man" with "people" (Page CO-53).
- Land Use Element
    - Removed duplicate photograph (Page LU-4).
    - Rounded up the acreage of properties to whole numbers (Page LU-6).
    - Deleted "in the future" at the end of a sentence of the first paragraph (Page LU-39).
- Circulation Element
    - Commissioners directed Staff to verify if the Hawthorne Blvd segment was still operating at unacceptable levels. Public Works indicated that while Hawthorne Blvd segment has improved, they were reluctant to change the LOS category without an updated traffic analysis. As a result, Staff recommends that the language remain with Hawthorne Blvd segment categorized as LOS F (Page C-6).
    - Replaced the word "transfer" with "transfers" (Page C-8).
- Visual Element
    - Added a sentence to clarify restoration of Western Avenue corridor and Hawthorne Blvd (Page VR-7).
    - Clarified policies (Page VR-10).
- Safety Element
    - Replaced a photograph of a landslide in San Pedro with a slide in Rancho Palos Verdes (Page S-21).
- Noise Element
    - Added the County as one of the enforcement agencies (Page N-8).
    - Added Palos Verdes Drive South to a list of roadways with higher noise levels (Page N-10).
    - Added text related to City's effort in monitoring aircraft noise (Pages N-12 & N-13).
    - Deleted CHP from one of the law enforcement agencies (Page N-13).
- Fiscal Element
    - Commissioner Emenhiser indicated that there used to be text related to assessing low taxes and requested that Staff double check to see if this was removed. Staff checked previous versions of the report and did not find this language. However, it should be noted that Goal No. 1 reads "Hold taxes and assessments to a minimum…", which has the same intent.
    - Re-inserted list of various taxes in the City (Page F-10).

Additional Staff Proposed Edits

Staff has made or will make the following additional edits to the Draft Updated General Plan presented to the Planning Commission at its June 23rd meeting:

- Conservation & Open Space Element
    - Updated the NCCP table (Page CO-22).
    - Added grove of trees planted at Ryan Park and Malaga Cove Library under Historical Resources based on the Rancho de Los Palos Verdes Historical Society and Museum's list of dedicated historical sites on the Palos Verdes Peninsula (Page CO-37).
- On July 21st, the City Council approved a General Plan Land Use Change for a portion of a vacant property at 10 Chaparral Lane from Natural Environment/Hazard to Residential 1-2 dwelling units per acre. Staff intends to reflect this change in the draft Draft General Plan Land Use Map that will be presented to the City Council at a future hearing.

Technical Editing & Formatting

Based on a suggestion by Commissioner Gerstner, Staff will be sending out the entire Draft General Plan text document to an outside consultant (DUDEK) for technical editing and formatting to ensure a well-written, polished, and cohesive plan. This will be done after Commission approval and before City Council's consideration in September.

PUBLIC CORRESPONDENCE

A public notice was published in the *Peninsula News* and mailed to all appropriate public agencies on July 9th. Staff received a letter from the County of Los Angeles Fire Department stating that they have no comments at this time. Staff also received two email correspondence from the public and they are attached to this Staff Report.

ATTACHMENTS

- Negative Declaration and associated Appendices
  - Appendix A – General Plan
  - Appendix B – General Plan Land Use Map Changes
  - Appendix C – Air Quality Analysis
  - Appendix D – Noise Impact Analysis
  - Appendix E – Traffic Impact Analysis
- Public Correspondence

Negative Declaration

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INITIAL STUDY

Project Title: Rancho Palos Verdes General Plan Update

Lead Agency: City of Rancho Palos Verdes
Community Development Department
30940 Hawthorne Boulevard
Rancho Palos Verdes, CA 90275

Contact Person: So J Kim
Senior Planner
(310) 544-5222
sok@rpvca.gov

Project Location: The project site is the entire City of Rancho Palos Verdes (City), which is located in southwestern Los Angeles County, along the Palos Verdes Peninsula of the Southern California coastline and approximately 25 miles southwest of downtown Los Angeles.

Project Sponsor's Name and Address: City of Rancho Palos Verdes
Community Development Department
30940 Hawthorne Boulevard
Rancho Palos Verdes, CA 90275

General Plan Designations: Varies. As part of the General Plan Update project, there are proposed changes to the land use designation(s) for various properties to: 1) ensure consistency between the General Plan Land Use Map and the City's Zoning Map; 2) ensure consistency between the General Plan Land Use Map and the City's Coastal Specific Plan Map; 3) add a new "Open Space Preservation" land use designation to address the preserve properties designated through the City's NCCP; 4) clarify that the location of the "Hazard" land use designation is located only within existing active Portuguese Bend Landslide areas and bluff top areas, while a new "Open Space Hillside" designation is located in canyon areas; and 5) clarify the type of "Recreational" land use designation (either "Passive" or "Active") for all City park areas. See attached Appendix B for a list of all proposed land use changes.

Zoning: Varies. While this project (General Plan Update) does not change any existing zoning designations, as a result of this project, to ensure consistency between the General Plan Land Use Map and Zoning Map, future changes to the Zoning Map and Ordinance to implement the changes noted above (see "General Plan Designations" above) will be necessary.

Description of Project:

The proposed project is an Amendment to the City of Rancho Palos Verdes' General Plan. Full copies of the proposed "Updated" General Plan can be found on the City's website (www.rpvca.gov), at the Planning Division of City Hall, and at the Miraleste and Peninsula Center libraries. Compact Disc and hard copy versions of the General Plan Update may also be purchased at City Hall in the Planning Division.

Background:
The original General Plan was adopted on June 26, 1975. With exception to relatively major General Plan amendments to address the adoption of the City's Coastal Specific Plan (1978), annexation of the "Eastview" portion of the City (1984), and the State Mandated Housing Element Updates (most recent 2013), only a variety of relatively minor amendments to the original General Plan have occurred to date. Thus, since adoption in 1975, the original General Plan had never been comprehensively updated.

At its January 12, 2002 meeting, the City Council discussed master plan issues and specifically focused upon updating the City's General Plan. The City Council acknowledged that portions of the General Plan need 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, similar to the effort to adopt the first 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 Recreation and Parks Committee
- City's Finance Advisory Committee
- City's Traffic Committee
- City's Equestrian Committee
- City's Disaster Preparedness Committee
- Council of Homeowner's Association
- Council of Homeowner's Association – Eastview Representative
- Peninsula Seniors
- Peninsula Youth Recreation League Council
- Docents – Los Serenos de Point Vicente
- School District
- Chamber of Commerce
- Palos Verdes Land Conservancy

The purpose of the Steering Committee was to review all of the goals and policies of the 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.

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.

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 City 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 context of the existing goals and policies that were created in 1975 still applied through to the present. As such, given that there are no significant changes to the vision, goals or policies from the original General Plan, this project has been termed as an “Update”.

During the preparation of the updated General Plan, the Planning Commission held 63 public meetings prior to their consideration of this Initial Study/Negative Declaration and final adoption (recommendation to City Council) of the General Plan Update. 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. Additionally, public notification was also provided in cases where Land Use Map changes were proposed to specific properties.

Summary of Amendments:
While the proposed General Plan Update does include changes to the existing General Plan’s goals and policies, text, and graphics, these changes do not result in significant changes to the City’s overall vision of its development pattern, including no changes to the existing development envelopes or intensification of existing land uses that would necessitate additional infrastructure facilities, or result in increased traffic.

With exception to the General Plan Housing Element, which tracks on a separate State Mandated updating schedule and which was adopted by the City in 2014 and certified by the California Department of Housing and Community Development (HCD) as being in compliant with State Law, all of the other General Plan elements are being amended to some degree through this project. The original 1975 General Plan was divided into six separate sections; I) Introduction, II) Natural Environment Element, III) Social/Cultural Element, IV) Urban Environment Element, V) Land Use Plan, and VI) Fiscal Element. The proposed project re-organizes the existing plan into nine separate sections to enhance the document’s ease of use.

Below is a brief summary of the changes to each element.

- Introduction: The section provides an overview/history of the Palos Verdes Peninsula and the City, background on the State requirements/guidelines of a General Plan, and background on the City’s process in preparing the “Updated” General Plan. Changes to this section are proposed to bring the 1975 document up to date.

- Conservation and Open Space Element: This section provides an evaluation of the basic ecological and environmental units dealing with the natural factors of land, climate, hydrology, biotic resources, geotechnical factors, and the systematic relationships which must exist among them. These are discussed individually, then combined, which becomes a guide for the natural environmental resource management policies. This element then focuses upon cultural resources (paleontological, historical and archeological resources) and the conservation of them and includes an inventory of existing open spaces within the City.

- Land Use Element: This section 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. Since the adoption of the 1975 General Plan document, 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.

- Circulation Element: This section presents a plan to ensure that transportation, including public transportation services, and utilities, are constantly available to permit orderly growth and to promote the public health, safety, and welfare. 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 retrofit) 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 utilizing complete street concepts to integrate the needs of all users of the roadway system consistent with the California Complete Streets Act of 2008 (AB 1358).

- Visual Resources Element: This section provides guidance through the establishment of goals and policies to ensure the continued preservation, restoration, and enhancement of significant visual resources within the City.

- Safety Element: This section 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. 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.

- Housing and Social Services Element: This section addresses the broad concerns of human problems and the effective use of available resources in meeting those problems. Specifically, this element defines roles and responsibilities, and provides guidelines for the future in the planning and coordination of social services. In addition to addressing Social Services, this Element also addresses the housing needs of the community. The current Housing Element was adopted by the City Council and certified by the State Department of Housing and Community Development in 2014. The Housing section of this element merely outlines the main contents within the separate stand-alone certified Housing Element.

- Noise Element: This section identifies existing and potential future sources of noise within the community; and identifies strategies to limit the exposure of the community to excessive noise levels.

- Fiscal Element: This section establishes the policy framework upon which short and long-term financial decisions are made to achieve the goals laid out in each of the Plan's elements.

Other Agencies Whose Approval is Required:

None.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicted by the checklist on the following pages.

☐ Land Use and Planning	☐ Biological Resources	☐ Aesthetics
☐ Population and Housing	☐ Energy/Mineral Resources	☐ Cultural Resources
☐ Geology and Soils	☐ Hazards and Hazardous Material	☐ Recreation
☐ Hydrology and Water Quality	☐ Noise	☐ Agricultural Resources
☐ Air Quality	☐ Public Services	☐ Mandatory Findings of Significance
☐ Transportation and Circulation	☐ Utilities and Service Systems	

DETERMINATION:

On the basis of this initial evaluation:

[X] I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

[ ] I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

[ ] I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated". An ENVIRONMENTAL IMPACT REPORT is required but must analyze only the effects that remain to be addressed.

[ ] I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effect (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed on the proposed project

Signature: ______________________ Date: ______________________

Printed Name: So Kim, Senior Planner For: City of Rancho Palos Verdes

EVALUATION OF ENVIRONMENTAL IMPACTS:

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Would the proposal:					
a) Have a substantial effect on a scenic vista?	1			√	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historical buildings, within a state scenic highways?	1			√	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	1,8			√	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	1,8			√	

Comments:

The City of Rancho Palos Verdes is mostly built-out, with a only handful of vacant developable lots scattered throughout the City, mostly within existing residential tracts, that can accommodate additional development. The proposed General Plan Update is based on a built-out scenario of the City.

Upon incorporation, the City developed the policies in its General Plan and has adopted various planning documents to assist the public in proposing and reviewing developments in accordance to the General Plan and Municipal Code to preserve visual resources, including scenic vistas, as described below. It should be noted that there are no officially designated scenic highways within the City.

General Plan Visual Element – The purpose of the Visual Element is to provide continued guidance through the establishment of goals and policies to ensure the continued preservation, restoration, and enhancement of significant visual resources within the City. To set the context for preserving, restoring and enhancing the visual resources within the City, the following goal has been established: 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. To achieve this goal, the following policies are incorporated in the Visual Element:

1. Develop controls to preserve existing significant visual aspects from future disruption or degradation.
2. Enhance views and vistas where appropriate.
3. Preserve and enhance existing positive visual elements, while restoring those that have been lost.
4. Consider the visual character of neighborhoods consistent with the General Plan and Neighborhood Compatibility Guidelines.
5. Develop and post vista points to provide safe off-road areas where views may be enjoyed.
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 which will impact corridor-related views to mitigate their impact.
9. Develop a program for the restoration of existing areas which negatively impact view corridors.
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. Work with adjoining jurisdictions to preserve and restore the view corridors from major thoroughfares.

View Restoration and Preservation Ordinance and Guidelines - In November 1989 the voters of the City of Rancho Palos Verdes passed an initiative to protect views by establishing height limits 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 for

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

view impairment caused by foliage. These guidelines are known as the Height Variation Guidelines and the View Restoration and Preservation Guidelines and Procedures, respectively. To be consistent with the intent to protect views and vistas from residential properties, the City Council also adopted a policy to protect views impaired by foliage located on City-owned property. View restoration requests involving City-owned trees are processed by the City through the issuance of a City Tree Review Permit application pursuant to the City's Municipal Code.

Guidelines and Procedures for Neighborhood Compatibility - The City of Rancho Palos Verdes' 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 recommended 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 suggested neighborhood compatibility guidelines are meant to assist residents and developers in the preparation and design of residential development projects by review of a project's scale, architecture and setbacks within the context of the immediate, surrounding neighborhood.

Coastal Specific Plan - A Coastal Specific Plan was prepared in 1978 to further study and assess resources along the Rancho Palos Verdes coastline. One of the goals of the Coastal Specific Plan was 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 defined 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 public and private development conforms to the principles set forth in the General Plan.

Western Avenue Specific Plans - The intent and purpose of the Western Avenue Specific Plans were 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 were prepared to protect adjacent residential property from the impacts of commercial development and to encourage the revitalization of the area. The plans identify themes that both create a Rancho Palos Verdes identity and distinguish the area from neighboring Los Angeles. The plans integrate the unique aspects of the Eastview area into the overall character of Rancho Palos Verdes, assist in preserving views, and improve the urban design for this area.

With the updated goals and policies of the updated General Plan Visual Element, along with the existing guidelines and policies within the View Ordinance, Neighborhood Compatibility, Coastal Specific Plan, Western Avenue Specific Plans, and the Development Code, all of which are crafted to protect visual resources and the aesthetics of the community, there would be less than significant impact to scenic vista, scenic resources, visual character and light/glare as a result of the General Plan Update.

2. AGRICULTURE AND FORESTRY RESOURCES: Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency, to non-agricultural use?	1,2,8				√
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	2			√	
c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Gov't Code section 5104(g))?	2, 8				√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	1, 2				√
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to a non-agricultural use?	1, 2			√	

Comments:
There is only one specific area in the City designated for Agricultural use, which makes up a portion of a future public park (i.e. Gateway Park). This future Gateway Park consists of 17 acres of undeveloped land that lies over an active landslide area. This area was purchased by the City in 2005 for the purpose of providing an access point or gateway to the City's abutting Open Space Preserve area, particularly for equestrian use. More specifically, the City has an in-concept plan for the subject area with the Agricultural land use designation to be developed with an equestrian park. This area is not used for agricultural use at this time and the City never had an intent for it to be used for agricultural purposes. As such, there is no conversion of farmland that is proposed as part of the General Plan Update. However, this one remaining area with an Agricultural land use designation is proposed to be changed to Recreational-Passive to accommodate the future Gateway Park. Once the General Plan Update is adopted, the Agricultural zoning designation will also be changed for consistency with the new land use designation of Recreational-Passive. However, this does not remove the agricultural use in the City as it is allowed by-right in Residential and Open Space land use designations. However, growing of crops and/or fruits on more than one acre or more for commercial purposes require an approval of a Conditional Use Permit by the City. Therefore, the General Plan Update would cause less than significant impact to agricultural use in the City. With regards to forest land, there are none in the City and therefore, the General Plan Update would result in no impact to forest land.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3. AIR QUALITY: Would the proposal:					
a) Violate any air quality standard or contribute to an existing or projected air quality violation?	1, 5			√	
b) Expose sensitive receptors to substantial pollutant concentrations?	1, 5			√	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	1, 5			√	
d) Create objectionable odors affecting a substantial number of people?	1, 5			√	
e) Conflict with or obstruct the implementation of any applicable air quality plan?	1, 5			√	

Comments:
The City of Rancho Palos Verdes is located at the southwestern border of the South Coast Air Quality Basin, adjacent to the Pacific Ocean, with winds that blow predominantly from the west-southwest at relatively low velocities. The mild winds typically transport the air pollutants generated in the urbanized areas of the Los Angeles Basin, away from the City and towards the inland areas to the east. As a result, with the rare exception of on-to-off shore wind conditions ("Santa Anas"), the City of Rancho Palos Verdes' air pollutant level is better than the Los Angeles basin and consistently registers below the State and Federal emission standards.

The air quality station closest to Rancho Palos Verdes is the North Long Beach Station. This station monitors all criteria pollutants and is summarized in the table below. As reflected in this data, the levels of carbon monoxide, ozone, coarse and fine particulates, nitrogen dioxide, and sulfur dioxide are consistently below the relevant State and National standards in the general vicinity.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

POLLUTANT	STANDARD	2011	2012	2013
Carbon Monoxide (CO)				
Max. 8-hr concentration (ppm)		2.56	2.17	ND[1]
No. of days exceeded:	State: ≥ 9 ppm	0	0	ND
	National: ≥ 9 ppm	0	0	ND
Ozone (O_3)				
Max. 1-hr concentration (ppm)		0.073	0.084	0.092
No. of days exceeded:	State: > 0.09 ppm	0	0	0
Max. 8-hr concentration (ppm)		0.062	0.067	0.071
No. of days exceeded:	State: > 0.07 ppm	0	0	1
	National: > 0.075 ppm	0	0	0
Coarse Particulates (PM_{10})				
Max. 24-hr concentration (µg/m³)		43	45	37
No. of days exceeded:	State: > 50 µg/m³	0	0	0
	National: > 150 µg/m³	0	0	0
Fine Particulates ($PM_{2.5}$)				
Max. 24-hr concentration (µg/m³)		44	58.6	51.7
No. of days exceeded:	National: > 35 µg/m³	1.2	4.1	2.2
Nitrogen Dioxide (NO_2)				
Max. 1-hr concentration (ppm)		0.106	0.077	0.066
No. of days exceeded:	State: > 0.18 ppm	0	0	0
	National: > 0.1 ppm	1	0	0
Sulfur Dioxide (SO_2)				
Max. 1-hr concentration (ppm)		0.004	0.003	0.001
No. of days exceeded:	State: > 0.04 ppm	0	0	0
	National: > 0.075 ppm	0	0	0

The projected construction activities (see Circulation Element) and related population increases (see Land Use Element) based on a built-out scenario that estimates the impact following the development of all vacant lots in the City could directly or indirectly contribute to the generation of additional GHG emissions through the removal of vegetation, construction activities, energy use (gas, electricity and water), solid waste disposal and motor vehicle use. However, given the limited number of vacant lots left to build on in the City and the limited population increase expected, the additional increase in emissions is expected to be less than significant.

Although the potential increase in GHG emission levels in the City are not projected to be significant, the City is committed to maintaining high standards for public health and to continue to improve air quality and reduced GHG emissions. The City has remodeled municipal facilities to increase energy efficiency, purchased fuel-efficient fleet vehicles, developed water conservation ordinances, expanded office recycling, and promoted alternative transportation options. It has influenced energy efficiency through its authority over land use planning, permitting, local ordinance, and environmental outreach and education. For example, a 'Green Building' ordinance was adopted in 2008 as an incentive for builders to construct a new or convert an existing structure to the California's Build It Green standards. This program provides incentives that include expedited review and reimbursement of half of the City's application fees. Additionally, the California Building Code has been recently updated to include green building standards (2010), requiring energy efficient development.

The following General Plan Update policies are designed to help reduce GHGs through more efficient energy systems and recycling, reductions in vehicle miles traveled, and the preservation of open space areas. With these existing, revised and new policies in place as part of the updated General Plan document, there will be less than significant impacts to air quality.

Energy Efficiency and Recycling

[1] There was insufficient data available to determine the value.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

- Encourage the restoration of vegetation throughout the City to indigenous native plant species. Encourage use of locally native plant species in City landscaping. (COS – Policy #25)
- Encourage energy and water conservation in housing design. (LU – Policy #8)
- Place commercial and institutional developments under the same building orientation controls as residential developments in regard to topographic and climatic design factors. (LU – Policy #15)
- Encourage the use of alternative water and energy generation sources. (C – Policy #32)
- Promote, practice and encourage workable energy and water conservation techniques. (C – Policy #33)
- 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. (C – Policy #35)
- Encourage the California Water Service Company to complete a Conservation Plan that provides for the availability of a recycled water system in the City. (C – Policy #36)
- Encourage waste reduction and recycling programs. (C – Policy #40)
- 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. (F – Policy #13)

Transportation (Reducing Vehicle Miles Traveled)

- Work with neighboring jurisdictions to manage contiguous wildlife and habitat areas and recreational amenities such as trails. COS – Policy #24)
- Require commercial and institutional development to be designed to maximize pedestrian safety. (LU Policy #17)
- Encourage implementation of plans for pedestrian and bicycling networks linking residential areas with schools for the safety of children. (LU Policy #25)
- Encourage continued operation of existing produce and flower stands. (LU Policy #31)
- Provide and maintain a safe**,** efficient and comprehensive system of roads and trails, and to coordinate them with other jurisdictions and agencies. (C Goal #2)
- Facilitate mobility of residents through an adequate public transportation system with consideration of the City's demographics. (C Goal #3)
- 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 (AB 1358). (C Goal #5)
- Encourage synchronization and coordination of traffic signals along arterials. (C Policy #3)
- Work with other Peninsula cities and/or regional agencies to improve public transportation on the Peninsula and to provide access to other destinations in the region. (C Policy #5)
- Coordinate and cooperate with neighboring jurisdictions to develop trail networks. (C Policy #7)
- Require that all new developments, where appropriate, establish paths and trails. (C Policy #9)
- Seek funding for acquisition, development and maintenance of trails. (C Policy #10)
- 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. (C Policy #11)
- Include safety measures such as the separation of uses, fences, signage, etc., in the design and construction of paths and trails. (C Policy #12)
- Descriptions of relevant trails in the Trails Network Plan should be provided to potential applicants when inquiries for development are first made. (C Policy #22)
- Design and construct new trails in accordance with the Trails Network Plan and other National, State and local standards, where appropriate. (C Policy #23)
- 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. (C Policy #26)
- 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. (C Policy #27)

Preservation of Open Space and Re-forestation

- Implement the Rancho Palos Verdes Natural Communities Conservation Plan (NCCP). (COS Policy #16)
- Encourage study of and funding to preserve native flora and fauna. (COS Policy #20)

Adaptation to Climate Change

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

- Permit development within the Sea Cliff Erosion Area (RM 1) only if demonstrated, through detailed geologic analysis, that the design and setbacks are adequate to insure public safety and to maintain physical, biologic, and scenic resources. Due to the sensitive nature of RM 1, this area is included as an integral part of the Coastal Specific Plan. (COS Policy #1)
- Develop balanced programs to provide greater safe public access to the coastline consistent with protecting the environment. (COS Policy #26)

- Provide for the protection of life and property from both natural and man-made hazards within the community. (S Goal #1)
- Develop and enforce health and sanitation requirements and develop emergency communications and disaster preparedness programs to ensure the overall health and safety of all residents. (S Goal #3)
- Promote education and safety awareness pertaining to all hazards which affect Rancho Palos Verdes residents and adjacent communities. (S Policy #1)
- Adopt and enforce building codes, ordinances, and regulations using best practices which contain design and construction standards based upon appropriate levels of risk and hazard. (S Policy #2)
- Encourage cooperation among adjacent communities to ensure law enforcement and fire protection mutual aid in emergency situations. (S Policy #3)
- 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. (S Policy #4)
- Continue to cooperate with fire protection agencies in utilizing public facilities for water and refueling location. (S Policy #5)
- Develop and implement stringent site design and maintenance criteria for areas of high fire hazard potential in coordination with fire protection agencies. (S Policy #6)
- Coordinate with the Fire Department to provide adequate emergency access to all streets, including the end points of cul-de-sacs, and along the sides of structures. (S Policy #8)
- Ensure the availability of paramedic rescue and fire suppression services to all areas of the City. (S Policy #12
- Maintain and implement a current Standard Emergency Management Systems (SEMS) Plan to cope with major disasters. (S Policy #13)
- Avoid or minimize the risks of flooding to new development. (S Policy #18)
- 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. (S Policy #19)
- 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. (S Policy #21)
- Establish cooperative working relationships among public agencies with responsibility for flood protection. (S Policy #22)

Climate Change

- Continue to work with SBCCOG 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.
- Continue to review development proposals for potential regional and local air quality impacts per the California Environmental Quality Act (CEQA), and if potential impacts are identified, require mitigation to reduce the impact to a level less than significant, where technically and economically feasible.
- Continue to enforce State Title 24 building construction requirements and apply standards that promote energy conservation.
- Promote new energy efficient buildings and retrofit existing public facilities to be energy efficient as feasible.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
• Continue to promote and encourage participation in the City's Voluntary Green Building Construction Program and award developers with a faster entitlement process and up to 50% rebate on permitting fees. • Continue managing the City's transportation fleet fueling standards to achieve the greatest number of hybrid and alternative fuel vehicles. • Support the development of alternative fuel infrastructure that is publicly accessible. • 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. • Encourage utility companies to provide informational literature about energy conservation for the public at City facilities. • Provide information to educate residents and businesses on topics such as waste reduction, recycling, green buildings and landscaping, and renewable energy generation. Utilize a range of tools including fact sheets, website newsletters, advertising and workshops to reach potential audiences. • Improve pedestrian, bicycle and public transportation routes and amenities to serve the travel needs of residents and visitors. Where feasible, the City will 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. • Continue to acquire, improve and implement the City's pedestrian and bicycle networks. Identify gaps in these networks, major travel routes and safety improvements. • Continue to provide subsidies in application fees for solar panels, skylights, high efficient pool/spa pumps, tankless water heaters and energy star units to promote efficient use of energy and conservation. • Continue to support the preservation of open spaces throughout the City.					
4. BIOLOGICAL RESOURCES: Would the proposal:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of fish and Game or US Fish and Wildlife Service?	8				√
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	8				√
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc…), through direct removal, filling, hydrological interruption, or other means?	8				√
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	8				√
e) Conflict with any local polices or ordinances protecting biological resources, such as tree preservation policy or ordinance?	8				√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	8, 12				√

Comments:

In 1996, Rancho Palos Verdes entered into an agreement with the State Department of Fish and Game (whose name was subsequently changed to the State Department of Fish and Wildlife) and U.S. Fish and Wildlife Service, collectively referred to as "Wildlife Agencies", to take the lead in the preparation of a Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP). The City's NCCP/HCP identifies and provides for protection and management of a diverse natural wildlife while allowing for compatible public use and appropriate development growth. The NCCP/HCP also provides comprehensive management and conservation of multiple species, including but not limited to species listed under the California Endangered Species Act (CESA) or federal Endangered Species Act (ESA) of 1973. The City developed a landscape-scale database of biological resources and land-use information to allow the City and Wildlife Agencies to make informed land-use and conservation decisions for future projects. This database mapped the vegetation communities and sensitive species distributions, along with their potential habitat. The NCCP/HCP also provided measures for habitat restoration of disturbed areas within the Preserve, with a required minimum level of restoration and enhancement to be accomplished each year. Approximately 8,697 acres of land are within the NCCP/HCP area, including native habitats, non-native habitats, disturbed areas, and developed lands. Although the NCCP/HCP covers vegetation and wildlife species found across the entire City, it also created a designated "Preserve" to conserve and re-vegetate sensitive native habitats within Rancho Palos Verdes and provide adequate habitat linkages between patches of conserved habitat.

Through a partnership with the Palos Verdes Peninsula Land Conservancy (PVPLC), the City was able to acquire upwards of 1,400 acres of land through public dedications of City-owned land, private donations of land and formal land purchases. This partnership not only lead efforts in the various forms of land acquisitions for the designated Preserve areas, but also provided necessary support for the design and implementation of the formal NCCP/HCP. Due to the large quantity 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 referred to as the *Open Space Preserve* for these areas. The Land Use Element describes the purpose of the *Open Space Preserve* as providing permanent open space buffers within the community; protecting sensitive plant and animal communities; and providing opportunity for passive recreational uses. 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. These properties have been consolidated under the ownership of the City to form the "backbone" of the Palos Verdes Nature Preserve. Additionally, the Land Use Element includes a new policy requiring that all land within the Open Space Preservation land use designation be utilized in compliance with the City's NCCP. The Open Space Conservation Element also includes the following policies specific to NCCP:

- Implement the Rancho Palos Verdes Natural Communities Conservation Plan;
- Encourage study of and funding to preserve native flora and fauna;
- Work with neighboring jurisdictions to manage contiguous wildlife and habitat areas and recreational amenities such as trails;
- Encourage the restoration of vegetation throughout the City to indigenous native plant species. Encourage use of locally native plant species in City landscaping;
- Work through the State and Federal government in support of legislation resulting in City acquisition of land.

With the acquisition of land since the original adoption of the 1975 General Plan, new land use designation of *Open Space Preserve* for protection of these areas and policies within the Land Use and Open Space Conservation Elements, there will be no adverse effect on any sensitive or protective species, riparian habitat, or wetlands and there will be no interference with the movement of native or migratory fish or wildlife species as a result of the proposed General Plan Update. Additionally, the proposed General Plan Update does not create any conflict with local policies, ordinances, or with the City's NCCP. Therefore, there will be no impacts to biological resources as a result of the proposed General Plan Update.

5. CULTURAL RESOURCES: Would the proposal:					
a) Cause a substantial adverse change in the significance of a historical resource	1, 7				√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
as defined in §15064.5 of the State CEQA Guidelines?					
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA Guidelines?	1, 7				√
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	1, 7				√
d) Disturbed any human remains, including those interred outside of formal cemeteries?	1, 7				√
Comments: The Conservation Open Space Element identifies the grove of trees planted at Ryan Park, Malaga Cove Library, lighthouse at Point Vicente, the estate of Frank Vanderlip 'Villa Francesca', the Harden Estate, and the Portuguese Bend Riding Club and its stables, Portuguese Bend, and Wayfarer's Chapel as major historical points/resources of the City. The archaeological sites and "probable" archaeological sites are on file in the Community Development Department and not specifically identified in the General Plan to prevent vandalism or "pot hunters" from removing artifacts. The entire coastline is considered "archaeologically sensitive" and is designated with an Overlay Control District in the General Plan. In addition to the coastal areas, other archaeologically sensitive areas include vacant lands north and east of Narcissa in Portuguese Bend and south of Crest Road in Rolling Hills Estates. There are no changes to these historical and archaeological sites as part of the proposed General Plan Update, and therefore there are no impacts to historical and archaeological resources. Paleontological resources or fossil remains, are not considered endangered due to their wide distribution through the Peninsula. However, should a particular site exhibit a high degree of paleontological significance as a result of its own CEQA analysis as part of a future development proposal, applicable preservation, excavation and/or no action option would be added as conditions of approval. Additionally, outside of the Green Hills Memorial Cemetery, there are no known sites with human remains that would be disturbed as a result of the proposed General Plan Update. Therefore, there will be no impacts as a result of the proposed General Plan Update.					
6. GEOLOGY AND SOILS: Would the proposal:					
a) Expose people or structure to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	6				√
ii) Strong seismic ground shaking?	6				√
iii) Seismic-related ground failure, including liquefaction?	6				√
iv) Landslides?	2, 6, 8, 12				√
b) Result in substantial soil erosion or the loss of topsoil?					√
c) Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off site landslide, lateral spreading, subsidence, liquefaction or collapse?	6, 8, 12				√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in the Uniform Building Code, thus creating substantial risks to life or property?					√
e) Have soils incapable or adequately supporting the use of septic tanks or alternative wastewater disposal systems, where sewers are not available for the disposal of wastewater?	6, 12				√

Comments:
The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. According to the State of California Department of Conservation website, the City of Rancho Palos Verdes is not one of the cities identified as being affected by Alquist-Priolo Earthquake Fault Zones as of May 1, 1999. However, the Seismic Zone Map released in March 25, 1999 show earthquake induced landslides and liquefaction zones in portions of the City of Rancho Palos Verdes. The proposed General Plan Update does not function as an entitlement that allows development on specific properties. However, land use changes that may lead to subsequent consistency zone changes may allow for a less stringent development regulations on some properties. More specifically, there are disparities between the mapping of the General Plan's Hazard areas and the Zoning Map's Hazard boundaries, along with a history of inaccuracies as to hazard mapping raised by the residents throughout the years. To address this issue, the City Geologist was tasked to review the General Plan's mapped Hazard areas to determine if it was consistent with existing topographic and geologic conditions that warranted such zoning pursuant to the General Plan. Based on reviewing the Hazard areas throughout the City, the City Geologist found that some boundary lines need to be adjusted as the Hazard designation included developed or developable potions of parcels, which are not considered hazardous areas from a geologic standpoint. Additionally, applicable site-specific environmental geological analysis as well as compliance with the Uniform Building Code are required prior to any development over non-hazard designated areas to prevent or mitigate potential adverse impacts. Therefore, there will be no impact to geology and soils as a result of the proposed General Plan Update. The proposed Update would not change conditions related to ground shaking, landslides, lateral spreading, subsidence, liquefaction, or collapse because of the lack of land use changes that could implicate these geologic conditions. Further, the update contains goals and policies designed to address the unique landslide issues that the City faces, including:

- Promote education and safety awareness pertaining to all hazards which affect Rancho Palos Verdes residents and adjacent communities.
- Adopt and enforce building codes, ordinances, and regulations using best practices which contain design and construction standards based upon appropriate levels of risk and hazard.
- Protect life and property and reduce adverse economic, environmental, and social impacts resulting from any geologic activity.

7. GREENHOUSE GAS EMISSIONS: Would the project:

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	5				√
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	5				√

Comments:
Currently, there are no generally-accepted significance thresholds for assessing greenhouse gas (GHG) emissions. However, an Air Quality Study (LSA Associates, 2010) shows that the City generated 0.277Tg (teragrams) of carbon dioxide in 2007, while the State produces approximately 497tg annually. The study also indicates that the projected construction activities and related population increases based on a built-out scenario that estimates the impact following the development of all vacant lots in the City could directly or indirectly contribute to the generation of

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

additional GHG emissions through the removal of vegetation, construction activities, energy use (gas, electricity and water), solid waste disposal and motor vehicle use. However, the study concludes that the additional carbon dioxide of 0.0086Tg generated in a built-out scenario would be not significant since the total emissions generated by the City will remain below the State and federal standards. Additionally, future development projects on the remaining vacant lots would be required to comply with the most current energy efficiency standards of the current Building Code (i.e. Title 24). The current General Plan Land Use assumptions were provided to SCAG for inclusion in regional planning for transportation and greenhouse gas reduction purposes, and thus have been accounted for in the state implementation plan. Because the land use revisions in the Updated General Plan and substantially the same as those in the current General Plan, future development would likely constitute a reduction in emissions below those assumed for development in the City because of the new green building requirements. Thus, the Updated General Plan would not preclude the State from meeting it GHG reduction goals. For these reasons, the GHG emissions associated with the proposed General Plan Update would be less than significant.

California's major initiatives for reducing climate change or greenhouse gas (GHG) emissions are outlined in Assembly Bill 32 (signed into law in 2006), a 2005 Executive Order and a 2004 Air Resources Board (ARB) regulation to reduce passenger-car GHG emissions. These efforts aim at reducing GHG emissions to 1990 levels by 2020 (a reduction of approximately 30 percent) and then an 80-percent reduction below 1990 levels by 2050. Although the potential increase in GHG emission levels in the City are not projected to be significant, the City is committed to maintaining high standards for public health and to continue to improve air quality and GHG emissions. The Conservation Open Space Element includes climate change policies to help reduce GHGs through more efficient energy systems and recycling, reductions in vehicle miles traveled, and the preservation of open space. Since there is no existing plan, policy or regulation adopted by the City regarding GHGs, there is no conflict with the climate change discussion and the following policies within the Conservation Open Space Element.

- Continue to work with SBCCOG 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.
- Continue to review development proposals for potential regional and local air quality impacts per the California Environmental Quality Act (CEQA), and if potential impacts are identified, require mitigation to reduce the impact to a level less than significant, where technically and economically feasible.
- Continue to enforce State Title 24 building construction requirements and apply standards that promote energy conservation.
- Promote new energy efficient buildings and retrofit existing public facilities to be energy efficient as feasible.
- Continue to promote and encourage participation in the City's Voluntary Green Building Construction Program and award developers with a faster entitlement process and up to 50% rebate on permitting fees.
- Continue managing the City's transportation fleet fueling standards to achieve the greatest number of hybrid and alternative fuel vehicles.
- Support the development of alternative fuel infrastructure that is publicly accessible.
- 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.
- Encourage utility companies to provide informational literature about energy conservation for the public at City facilities.
- Provide information to educate residents and businesses on topics such as waste reduction, recycling, green buildings and landscaping, and renewable energy generation. Utilize a range of tools including fact sheets, website newsletters, advertising and workshops to reach potential audiences.
- Improve pedestrian, bicycle and public transportation routes and amenities to serve the travel needs of residents and visitors. Where feasible, the City will 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.
- Continue to acquire, improve and implement the City's pedestrian and bicycle networks. Identify gaps in these networks, major travel routes and safety improvements.
- Continue to provide subsidies in application fees for solar panels, skylights, high efficient pool/spa pumps, tankless water heaters and energy star units to promote efficient use of energy and conservation.
- Continue to support the preservation of open spaces throughout the City.

8. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous material?					√
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?					√
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of and existing or proposed school?	1				√
d) Be located on a site, which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?					√
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?					√
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?					√
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	1				√
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	1, 13				√

Comments:

a-d) The proposed General Plan Update does not involve development entitlements. However, any future development on the limited vacant lots in the City would be required to adhere to construction hours, approved haul routes, geologic recommendations and other conditions to mitigate or minimize any adverse environmental impacts. Therefore, the proposed General Plan Update does not create or emit any significant hazards.

e-f) There are no airports located within or in close proximity of the City of Rancho Palos Verdes and therefore, there is no impact caused by the proposed General Plan Update.

g) The City is relatively built out with limited developable vacant parcels in various locations throughout the City. Since there is no concentration of vacant parcels in a single area and most are located within existing residential tracts, the future development of said parcels would not impair the implementation of or interfere with existing emergency plans. Therefore, there would be no impact as a result of the proposed General Plan Update.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

h) The Safety 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. 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. While the wildfire 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. With the following policies in place related to fire, there will be no impact as a result of the proposed General Plan Update:

- Promote education and safety awareness pertaining to all hazards which affect Rancho Palos Verdes residents and adjacent communities.
- Adopt and enforce building codes, ordinances, and regulations using best practices which contain design and construction standards based upon appropriate levels of risk and hazard.
- Encourage cooperation among adjacent communities to ensure law enforcement and fire protection mutual aid in emergency situations.
- 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.
- Continue to cooperate with fire protection agencies in utilizing public facilities for water and refueling location.
- Develop and implement stringent site design and maintenance criteria for areas of high fire hazard potential in coordination with fire protection agencies.
- Implement reasonable and consistent house numbering and street naming systems.
- Coordinate with the Fire Department to provide adequate emergency access to all streets, including the end points of cul-de-sacs, and along the sides of structures.
- Ensure the availability of paramedic rescue and fire suppression services to all areas of the City.
- Maintain and implement a current Standard Emergency Management Systems (SEMS) Plan to cope with major disasters.

9. HYDROLOGY AND WATER QUALITY: Would the proposal:					
a) Violate any water quality standard or wastewater discharge requirements?	8				√
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater?	1, 8				√
c) Substantially alter the existing drainage pattern of the site or areas, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off site?	1, 10				√
d) Substantially alter the existing drainage pattern of the site or areas including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	1, 10				√
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	1				√
f) Otherwise substantially degrade water quality?					√
g) Place housing within a 100-year flood hazard area, as mapped on a Federal					√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Flood Hazard Boundary or Flood Insurance Rate map or other flood hazard delineation map?					
h) Place within a 100-year flood hazard area, structures which would impede or redirect flood flows?					√
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	11				√
j) Inundation by seiche, tsunami, or mudflow?	11				√

Comments:

a, b, e, f, k, l) The water needs of the City of Rancho Palos Verdes are served by the California Water Service Company (CWSC), which operates within the regulations and standards of the Public Utilities Commission. The sole function of CWSC is to supply the City with sufficient fire safety requirements and adequate amounts of potable drinking water at a pressure consistent with accepted standards. While the General Plan Update is based on the build out scenario of the City which may result in an increase in housing units as a result of development on the remaining developable vacant lots, prior to development, CWSE will verify if there is an adequate water supply to meet the need of the new housing units. This would be addressed under separate environmental review of each specific project. Therefore, there will be no impact as a result of the General Plan Update.

There are three large waste water discharge points, all located within 20 miles of the Rancho Palos Verdes coast. Management of land use practices within the City, such as drainage courses aid in reducing waste water discharges so that the ocean's ability to assimilate wastes would not be exceeded. It should be noted that projects resulting from the development of the remaining vacant lots in the City will have to provide drainage plans to be reviewed by the Building and Safety Department with consistency with the current standards and may be subject to National Pollutant Discharge Elimination System (NPDES) review, including Best Management Practices. Therefore, there will be no impact as a result of the General Plan Update.

c, d) According to the USGS map, there are blue-line streams in some areas within the City of Rancho Palos Verdes. The proposed General Plan Update does not function as an entitlement that allows for development. However, it is based on a built out scenario of the remaining vacant lots of the City. Although there is no construction allowed over blue-line stream areas, site-specific environmental analysis will be reviewed prior to any construction on vacant lots near said areas to address potential impacts. Therefore, there will be no impact as a result of the General Plan Update.

g,h) The properties within the City of Rancho Palos Verdes are exempted from Flood Hazard Maps due to its topographic nature. This action was initiated and accomplished by the County of Los Angeles prior to 1984 and this amendment will not affect the exemption. Therefore, there will be no impact as a result of the General Plan Update.

i, j) There are no dams and levees in the City of Rancho Palos Verdes. Given that there are no rivers, there is no potential exposure to seiche. Additionally, all available buildable vacant areas are located significantly above sea level, preventing exposure to tsunamis. As evidenced in the City's zoning map, areas with potential susceptibility to mudflow, such as Open Space Hazard zones do not permit new residential construction. Therefore, there will be no impact as a result of the General Plan Update.

10. LAND USE AND PLANNING. Would the proposal:					
a) Physically divide and established community?	1, 2				√
b) Conflict with any applicable land use plan, policy, or regulation including, but not limited to the general plan, specific plan, local coastal plan, or zoning ordinance?	1, 2, 3, 8				√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	1, 4				√

Comments:

a) The proposed General Plan Update will have no impact to the established community since it simply takes into account the built-out scenario of the City. More specifically, the existing developable vacant lots are located within existing residential tracts, peppered throughout the City. As such, the project will not disrupt the physical arrangement of an established community.

b) The proposed General Plan Update includes modifications to the Hazard boundary line, or a land use change for portions of 666 individual properties. The Hazard areas will be more accurate, limited to hillsides, areas of known active or historical landslides and areas where preservation of the topography was necessary to protect the public health, safety and welfare. The land use designation name for the “Hazard” areas will be changed to “Open-Space Hillside” for all properties except those within the Coastal Bluffs, Landslide Moratorium Area and other known landslide areas.

Additional land use changes are proposed to correct ambiguities between the General Plan Land Use Map and the Zoning Map. The primary reason for the differences is that the 1975 General Plan Land Use Map have colored ‘blobs’ that represent areas with different land uses while the 2012 Zoning Map includes individual parcels and is more accurate due to the use of more advanced technology to create the map. As such, the General Plan Land Use Map will include minor corrections to better represent the land use areas as intended.

Additional land use changes are proposed for consistency with the existing uses of the site. More specifically, existing parks with recreational amenities and improvements have inconsistent land use designations of Residential, Agricultural, Commercial and Hazard. Land use designation changes to Recreational-Passive is proposed for these park properties for consistency with the current use of the sites. With these changes to the land use designations, there are no impacts as a result of the proposed General Plan Update.

c) The City entered into a Planning Agreement with the California Department of Fish and Game and the U.S. Fish and Wildlife Service to develop an NCCP (Natural Communities Conservation Planning) subarea plan that will encompass the entire City in 1996. The purpose of this plan is to identify and provide for the area-wide protection of natural wildlife diversity, while allowing for compatible and appropriate development and growth. Subsequently, in 2004, the City adopted a Palos Verdes Peninsula (PVP) Subarea NCCP Plan that identified an approximate 1,400-acre habitat preserve. In 2005 and 2009, the City completed land acquisitions that completed the creation of the 1,400 acre Preserve identified in the City Council approved NCCP. The City’s NCCP requires the City to *“amend relevant sections of the RPV General Plan to identify all Preserve lands and their attendant land use restrictions”*. Since the existing General Plan Land Use Map does not have a land use classification for “Preserve”, a new land use designation of “Open Space Preserve” will be created to classify the preserve areas identified in the 2004 PVP NCCP Plan. The new “Open Space Preserve” only applies to City-owned properties and one parcel owned by the Palos Verdes Peninsula Land Conservancy. Therefore, there are no impacts as a result of the proposed General Plan Update.

11. MINERAL RESOURCES. Would the proposal:					
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	1				√
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan?	1, 8				√

Comments:

For the most part, the subsurface geology of Rancho Palos Verdes consists of metamorphic rock with intruded igneous rock. These rock types are generally not known as sources for economic resources such as oil and/or gas. More specifically, three exploratory wells were drilled from 1947 to 1951 at what is now Terranea Resort Hotel, south of 25th Street and Trump National Golf Club. According to the logs filed with the State Division of Oil and Gas, none of these wells showed any indication of oil or gas. From 1948 to 1958, the land in Rancho Palos Verdes was quarried for

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
basalt, diatomaceous earth, and Palos Verdes stone. Considering the rather low market value of the various mineral resources in Rancho Palos Verdes relative to the land's value as residential or commercial real estate, it is highly unlikely that landowners of the remaining vacant parcels would wish to utilize the land for mining or quarrying operations. Given the community's goal of maintaining a rural atmosphere, conflicts which might otherwise arise relative to desired land use are not likely to occur. Therefore, there will be no impacts to mineral resources as a result of the proposed General Plan Update.					
12. NOISE. Would the project result in:					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?	1, 9				√
b) Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels?	1, 9				√
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	1, 9				√
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	1, 9				√
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?					√
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?					√

Comments:

a – d) The Noise Element of the General Plan Update contemplates a slight population increase through General Plan build-out. The bulk of this increase will be reflected in low density residential development, therefore not requiring the extensive and on-going 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 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 called 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 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. Additionally, the Noise Element of the General Plan Update includes the following policies to further control and minimize noise impacts. Therefore, there would be no impacts to noise as a result of the proposed General Plan Update.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact

Transportation Noise

- Encourage through traffic to utilize existing arterials and collectors so that local roads are not used as by-passes or short-cuts in order to minimize noise.
- Control traffic flows of heavy construction vehicles en route to and from construction sites to minimize noise.
- Encourage the State and Federal governments to actively control and reduce vehicle noise emissions.
- 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

- Develop an ordinance to control noise commensurate with local ambiance.
- Maintain current and up-to-date information on noise control measures, on both fixed point and vehicular noise sources.
- Coordinate with all public agencies, especially our adjoining jurisdictions to study and/or control noise emissions.

Land Use Planning and Noise Control

- Mitigate impacts generated by steady state noise intrusion (e.g., with land strip buffers, landscaping, and site design).
- Regulate land use so that there is a minimal degree of noise impact on adjacent land uses.
- Require strict noise attenuation measures where appropriate.
- 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.
- Require the minimization of noise emissions from commercial activities by screening and buffering techniques.

e, f) The City of Rancho Palos Verdes does not contain, border or is in close proximity of any airports to cause any impacts to cause exposure to noise levels resulting from an airport or a private air strip. Therefore, there would be no impact caused by the propose General Plan Update.

13. POPULATION AND HOUSING. Would the project:

a) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or major infrastructure)?	1				√
b) Displace existing housing, especially affordable housing?	1				√
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	1				√

Comments:

a) The General Plan Update contemplates a slight population increase though General Plan build-out. The bulk of this increase will be reflected in low density residential development. The City's adopted 2013-2021 Housing Element contemplates modest gains in population growth projections. More specifically, the Southern California Association of Governments 2012 Regional Transportation Plan Forecast shows an increase of 100 persons and 100 households over a period of 12 years (between 2008 and 2020). Taking into account the average gain of 8 persons per year, from the current year of 2015, the population is projected to increase by approximately 40 persons and 40 households by year 2020. With the current population at 41,643, this is less than a 1% increase for the next 5 years. Given the minimal increase in the projected population growth, there will be no impacts as a result of the proposed General Plan Update.

b-c) The General Plan's build-out scenario takes into account the development of all remaining developable parcels in the City, thereby creating more units. It does not involve displacing or replacing any existing housing, especially affordable housing. Therefore, there will be no impacts as a result of the proposed General Plan Update.

14. PUBLIC SERVICES.

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provisions of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:					
i) Fire protection?	1, 2			√	
ii) Police protection?	1, 2			√	
iii) Schools?	1, 2			√	
iv) Parks?	1, 2			√	
v) Other public facilities?	1, 2			√	
Comments: The General Plan Update contemplates a slight population increase though General Plan build-out. The bulk of this increase will be reflected in low density residential development. These remaining vacant lots are scattered within existing residential tracts in the City. Given the limited number of vacant lots within established residential tracts and a less than 1% increase in the population over the next 5 years, the impacts to public services would be nominal and therefore will result in less than significant impacts.					
15. RECREATION.					
a) Would the project increase the use of neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	1, 2			√	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	1, 2			√	
Comments: The General Plan Update contemplates a slight population increase though General Plan build-out. The bulk of this increase will be reflected in low density residential development. These remaining vacant lots are scattered within existing residential tracts in the City. Given the limited number of vacant lots within established residential tracts and a less than 1% increase in the population over the next 5 years, the impacts to recreation would be nominal and therefore will result in less than significant impacts.					
16. TRANSPORTATION/TRAFFIC. Would the project:					
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	1, 8				√
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county					√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
congestion management agency for designated roads or highways?					
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?					√
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment?					√
e) Result in inadequate emergency access?	1				√
f) Conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	1, 8				√
Comments: Given that the proposed increase in population and housing as a result of the General Plan Update's build out scenario is relatively minor with a projection of approximately 40 persons and 40 households by year 2020, along with most vacant lots located within established residential tracts scattered throughout the City, there will be no substantial adverse impacts to transportation and traffic levels, patterns, uses, access, etc. The housing unit increase will be site-specific and as with all construction, any proposed project resulting from the proposed amendment will be reviewed in regards to design and adequate parking capacity on-site. Additionally, applicable site-specific traffic analysis will be reviewed prior to future construction for any potential impacts. Therefore, there will be no impacts to transportation/traffic as a result of the General Plan Update.					
17. UTILITIES AND SERVICE SYSTEMS. Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?					√
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?					√
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?					√
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?					√
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?					√

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?					√
g) Comply with federal, state, and local statures and regulations related to solid waste?					√
Comments: The General Plan Update contemplates a slight population increase though General Plan build-out. The bulk of this increase will be reflected in low density residential development. These remaining vacant lots are scattered within existing residential tracts in the City. Given the limited number of vacant lots and a less than 1% increase in the population over the next 5 years (by 2020), the impacts to utilities and service systems would be nominal and therefore will result in no impacts.					
18. MANDATORY FINDINGS OF SIGNIFICANCE.					
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	4				√
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects)?	1				√
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	1				√

Comments:

a) The City entered into a Planning Agreement with the California Department of Fish and Game and the U.S. Fish and Wildlife Service to develop an NCCP (Natural Communities Conservation Planning) subarea plan that will encompass the entire City in 1996. In 2004, the City adopted a Palos Verdes Peninsula (PVP) Subarea NCCP Plan that identified an approximate 1,400-acre habitat preserve. In 2005 and 2009, the City completed land acquisitions that completed the creation of the 1,400 acre Preserve identified in the City Council approved NCCP. Since the existing General Plan Land Use Map does not have a land use classification for "Preserve", a new land use designation of "Open Space Preserve" will be created to classify the preserve areas identified in the 2004 PVP NCCP Plan. The new "Open Space Preserve" only applies to City-owned properties and one parcel owned by the Palos Verdes Peninsula Land Conservancy. Therefore, there are no impacts as a result of the proposed General Plan Update.

b-c) The proposed General Plan Update is based on a future build out of the remaining vacant lots scattered within established low density residential tracts within the City, and maintenance of the existing development patterns of the community. The proposed project is a text update to the existing General Plan, its goals and policies along with a series of land use changes which will be reflected in the updated General Plan Land Use Map. As repeated in previous sections, the number of remaining lots are minimal and will consist of infill development within existing residential neighborhoods. Additionally, the projected population growth is less than 1% over the next 5 years. Furthermore, site

Issues and Supporting Information Sources	Sources	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
specific analysis will be required prior to the development of any vacant lot. As such, there will be no substantial adverse effects as a result of the General Plan Update and therefore, there will be no impacts.					

18. EARLIER ANALYSES.
Earlier analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or Negative Declaration. Section 15063 (c) (3) (D). In this case a discussion should identify the following items:
a) **Earlier analysis used.** Identify earlier analyses and state where they are available for review.
Comments: An EIR was certified with the original 1975 General Plan and a copy is available within the existing 1975 General Plan document (pages 253-261).
b) **Impacts adequately addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
Comments: The earlier EIR is sectioned into more broader categories: Environmental Impact of the Proposed Action, Any Adverse Environmental Effects Which Cannot be Avoided if the Proposal is Implemented, Mitigation Measures Proposed to Minimize the Impact, Alternatives to the Proposed Action, the Relationship Between Local Short Term Uses of Man's Environment and the Maintenance and Enhancement of Long Term Productivity, Any Irreversible Environmental Changes Which Would be Involved in the Proposed Action Should it be Implemented, and the Growth-Inducing Impact of the Proposed Action. The earlier EIR appeared to have answered all of the checklist items in more generalized format, referring to sections of the General Plan document itself. The EIR states that the General Plan document in itself is a mitigation measure as it proposes to protect and manage the natural environment of the City and, through the environmental analysis of specific development proposals, it is intended that specific mitigation measures would be required. Additionally, mitigation measures were often contained in policy statements of each element with the General Plan.
c) **Mitigation measures.** For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions of the project.
Comments: None.

19. SOURCE REFERENCES	
1	City of Rancho Palos Verdes, Rancho Palos Verdes General Plan, and associated Environmental Impact Report. Rancho Palos Verdes, California as amended through August 2001
2	City of Rancho Palos Verdes Zoning Map
3	City of Rancho Palos Verdes, Coastal Specific Plan and associated Environmental Impact Report, Rancho Palos Verdes, California: December 1978
4	City of Rancho Palos Verdes NCCP Phase 1 Map
5	LSA. Air Quality Analysis. February 2011.
6	The Seismic Zone Map (3/25/99), Department of Conservation of the State of California, Alquist-Priolo Earthquake Fault Zone (5/1/99)
7	City of Rancho Palos Verdes Archeology Map
8	City of Rancho Palos Verdes Municipal Code
9	LSA. Noise Impact Analysis. October 2010.
10	U.S. Geological Survey Map
11	Tsunami Inundation Map for Emergency Planning (Torrance & San Pedro Quadrangle: March 1, 2009)
12	FEMA. DFIRM Map. 2010
13	County of Los Angeles Fire Department. Very High Fire Hazard Severity Zone Map. 2009
14	Willdan Engineering. Traffic Impact Analysis. July 19, 2010.

Appendix A

I.1 Palos Verdes Peninsula

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, now rises above the Los Angeles Basin to a maximum of 1,480 feet, with uniquely terraced configurations and steep, rocky cliffs jutting upward 50 to 300 feet from the ocean. Erosion has 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 history is equally interesting, from the Native American Tongva people who migrated to the area, the Spanish explorers and missionaries, cattle ranchers of the Rancho de los Palos Verdes land grant, and to the whalers 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, beautiful rolling terrain, mild climate, and clean air, the Peninsula is a most desirable place to live. Home construction began in the 1920's and has continued to the present. The rate of construction increased dramatically in the 1960's, substantially increasing the area's density, primarily in the unincorporated areas of the Peninsula now known as the City of Rancho Palos Verdes.

I.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 the manager of the cattle ranch grew barley for hay and grain 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. 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.

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, opennesss, or sensitive environment. During the 1960's, the citizens of the unincorporated area repeatedly attempted to convince the County to restrain from this kind of uncontrolled developed and to institute planning and zoning regulations more consistent with the area's unique qualities. Homeowners' associations bonded into the Peninsula Advisory Council, and the citizens' group Save Our Coastline was created to consolidate efforts to promote proper limitations on the development of the Peninsula's coastal areas. The majority of such attempts failed, however, as the County repeatedly authorized higher density uses of many pristine areas of the community.

Efforts to incorporate the Peninsula's fourth city (Rancho Palos Verdes) began in 1962 and 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. After many legal battles and several disappointing setbacks, the California Supreme Court ruled unanimously in September 1972, in the case of Curtis vs. Board of Supervisors, that landowners could not prevent voters from determining their municipal government. After this court decision, the Local Area Formation Commission (LAFCO) permitted the citywide election 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 five City Council members. 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). Utilizing a council-manager 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 of Rancho Palos Verdes continues to offer magnificent views, open spaces, and clean air and remains as an extremely desirable place to live.

I.3 What is a General Plan and What are its Regulatory Requirements?

Not unlike many other parts of the Country, major milestones in the State of California's Planning Law date to the early 1900's, when the State'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."*

What is a General Plan? The California Supreme Court has defined the General Plan as the *"constitution for future development."* Perhaps a better description comes from the State's General Plan Guidelines (Guidelines), which state that *"the General Plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private."* Basically, then, 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 State's Guidelines, the General Plan serves to:

- *"Identify the community's land use, circulation, environmental, economic and social goals and policies as they relate to land use and development.*
- *Provide a basis for local government decision-making, including decisions on development approvals and exactions.*

- *Provide citizens with opportunities to participate in the planning and decision-making processes of their communities.*
- *Inform citizens, developers, decisions-makers, and other cities and counties of the ground rules that guide development within a particular community."*

In preparing or amending a General Plan, certain basic considerations are essential, including

- **Comprehensiveness**: A General Plan must cover a city's entire planning area and address the broad range of issues associated with a city's development.
- **Internal Consistency**: On five different dimensions of "internal consistency," there can be no policy conflicts, either textual or graphic, between any components of the General Plan: 1) Equal status among elements; 2) Consistency between elements; 3) Consistency within elements; 4) Area plan consistency; and 5) Text and diagram consistency.
- **Long-Term Perspective**: While the time frame for specific issues may be different, a General Plan is most often designed to span a 15-20 year period for the City to make decisions that comply with all of its aspects of "internal consistency," while recognizing the future need for General Plan Amendments after such period to adjust for possibly unforeseeable changes in land use.

While the General Plan includes text and graphics to describe existing and proposed development within the City, it more importantly includes a set of Goals and Policies used to formulate a direction or plan for the future development of the City. In fact, State Law requires that General Plans include 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 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 Element; Social Services; and Scenic Highway – and these continue to be included within this updated General Plan.

I.4 Adoption of the General Plan

The original City Council instituted processes to try to obtain maximum citizen participation in the development of the City's first General Plan. Toward this purpose, the City Council appointed a Steering Committee to organize a General Plan Goals Committee. The Committee involved some 200 citizens who worked together in subcommittees. The Committee submitted a report to the Council that was a statement of goals, objectives, and policy recommendations on the various elements of the proposed General Plan. Additionally, the City held public hearings during which citizens were invited to speak on the Plan.

The City's first General Plan was adopted on June 26, 1975, less than two 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 upon 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 first 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 Recreation and Parks Committee
- City's Finance Advisory Committee
- City's Traffic Committee
- City's 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 Land Conservancy

The purpose of the Steering Committee was to review all of the goals and policies of the 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 statement of the existing goals and policies that were created in 1975 still applies to 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 60 public meetings and the City Council held **13** prior to the Council's adoption of the General Plan on (______________). 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.

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

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

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

Goals

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

1. 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. Protect and preserve all significant archaeological, paleontological, and historical resources within the City.

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

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

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 amongst them that serve as the basis in which the environmental resource management policies are developed. For example, the discussion below on "Climate" describes the components of weather, which affects the City in terms of temperatures, winds, precipitation, and air quality. The "Biotic Resources" portion describes the significant ecologic habitats associated with the land-based natural vegetation communities, as well as ocean related resources along the immediate shoreline. The section on "Geotechnical Factors" includes topographic conditions, geologic hazards, and mineral resources. Hydrology covers the natural and man-made water drainage patterns within the City and the factors affecting them, as well as their influence on the other natural environment factors.

Climate

Rancho Palos Verdes has one of the most ideal climates of the world. Its average maximum and minimum temperatures range approximately between 67°F. and 50°F., and annual precipitation is approximately 11" to 15".

Precipitation intensity is variable during storms. Records of maximum precipitation rates are not available specifically for the City; however, data from the Botanic Garden area of the Peninsula indicates that 0.3 of an inch has fallen within a five-minute period and 1.1 inches in a one hour period (Gales). The latter occurred 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 2 – Climate Zones).

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

Zone 1 – Average Monthly Temperatures

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

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

Zone 2 – Average Monthly Temperatures

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
High	56	61.5	61.5	64.5	66	67.5	72.5	75.5	72	69	65	59.5
Low	44	48	52.5	49	52	53	59	60.5	58	54.5	50	51

Zone 3 – Middle Highlands/Eastern Upper Slopes. This climate 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.

Zone 3 – Average Monthly Temperatures

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

This mild climate of Rancho Palos Verdes with its soil and plant nutrients has created a setting enabling a wide variety of both native and non-native plant species to grow within the City. In order to flourish, many non-native 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 took advantage of this environmental quality but has since given way to residential development also attracted to the mild climate and clean air.

Air Quality and Climate Change

Air quality is affected by various emission sources as well as atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. The combination of topography, inversion layers, abundant sunshine, and emissions from the second largest urban area in the United States make the Los Angeles Basin, as a whole, one of the top 5 worst air pollution problem areas in the nation.

The City of Rancho Palos Verdes is located at the southwestern border of the Basin, adjacent to the Pacific Ocean, with winds that blow predominantly from the west-southwest at relatively low velocities. The mild winds typically transport the air pollutants, generated in the urbanized areas of the Los Angeles Basin, away from the City and towards the inland areas to the east. As a result, with the rare exception of on to off shore wind conditions ("Santa Anas"), the City of Rancho Palos Verdes' air pollutant level is better than the Los Angeles basin and consistently registers below the State and Federal emission standards.

The air quality station closest to Rancho Palos Verdes is the North Long Beach Station. This station monitors all criteria pollutants and is summarized in the table below. As reflected in this data, the levels of carbon monoxide, ozone, coarse and fine particulates, nitrogen dioxide, and sulfur dioxide are consistently below the relevant State and National standards in the general vicinity.

POLLUTANT	STANDARD	2011	2012	2013
Carbon Monoxide (CO)				
Max. 8-hr concentration (ppm)		2.56	2.17	ND[1]
No. of days exceeded:	State: ≥ 9 ppm	0	0	ND
	National: ≥ 9 ppm	0	0	ND
Ozone (O_3)				
Max. 1-hr concentration (ppm)		0.073	0.084	0.092
No. of days exceeded:	State: > 0.09 ppm	0	0	0
Max. 8-hr concentration (ppm)		0.062	0.067	0.071
No. of days exceeded:	State: > 0.07 ppm	0	0	1
	National: > 0.075 ppm	0	0	0
Coarse Particulates (PM_{10})				
Max. 24-hr concentration (μg/m³)		43	45	37
No. of days exceeded:	State: > 50 μg/m³	0	0	0
	National: > 150 μg/m³	0	0	0
Fine Particulates ($PM_{2.5}$)				
Max. 24-hr concentration (μg/m³)		44	58.6	51.7
No. of days exceeded:	National: > 35 μg/m³	1	4	2
Nitrogen Dioxide (NO_2)				
Max. 1-hr concentration (ppm)		0.106	0.077	0.066
No. of days exceeded:	State: > 0.18 ppm	0	0	0
	National: > 0.1 ppm	1	0	0
Sulfur Dioxide (SO_2)				
Max. 1-hr concentration (ppm)		0.004	0.003	0.001
No. of days exceeded:	State: > 0.04 ppm	0	0	0
	National: > 0.075 ppm	0	0	0

California's Efforts to Reduce Greenhouse Gas Emissions. The Earth's atmosphere is constantly changing. While there may be some disagreement on the causes of current climate change, the State of California's position is that climate change is at least partially the result of increased greenhouse gas (GHG) emissions into the atmosphere, which exacerbates global warming.

The first comprehensive State policy to address climate change was established through an Executive Order by Governor Schwarzenegger in 2005. It established the following ambitious GHG reduction targets for the State: 1) Reduce GHG emissions to 2000 levels by 2010; 2) Reduce to 1990 levels by 2020; and 3) Reduce to 80% below 1990 levels by 2050. This Order is binding only on State agencies and has no force of law for local governments. The Global Warming Solutions Act of 2006 (AB32)

[1] There was insufficient data available to determine the value.

codified the GHG emissions target by directing the Air Resources Board (ARB) to reduce the State's global warming emissions to 1990 levels by 2020. ARB's Scoping Plan (Plan) outlines a variety of strategies to reduce emissions in the State to 1990 levels by 2020. The Plan discusses (but does not mandate) ways in which local governments can achieve direct GHG reductions, such as actions to reduce energy use at their own facilities, to increase recycling, to reduce waste and water use, and to reduce carbon emissions from their vehicle fleets.

In 2008, Governor Schwarzenegger signed Senate Bill 375. This bill takes AB32 a bit further by: 1) requiring the ARB to establish regional targets for reduction in GHGs from passenger cars and small trucks associated with land use decisions; 2) requiring metropolitan planning agencies (ex. SCAG) to create a Sustainable Communities Strategy (SCS) in their Regional Transportation Plan (RTP) to meet reduction targets in GHGs; 3) requiring that funding decisions for regional transportation projects be internally consistent within the RTP; 4) aligning the Regional Housing Needs Assessment (RHNA) with the RTP; and 5) providing CEQA relief in the form of streamlining and exemptions for projects that are consistent with the RTP SCS. While there are no mandates placed upon local governments for implementation of SB375, the last two items noted above can affect local governments.

Rancho Palos Verdes Efforts to Reduce Greenhouse Gas Emissions. One of the first steps a city can take toward protecting the environment from GHG emissions and promoting environmental stewardship is to identify and account for its own sources of emissions including municipal and communitywide emissions. To assist with this effort, the South Bay Cities Council of Governments (SBCCOG) completed greenhouse gas emissions inventories – for both government operations and communitywide activities for the years 2005 and 2007 for each city in the South Bay, including Rancho Palos Verdes.

The SBCCOG released a Community Greenhouse Gas Emissions Inventory Report in 2010, showing that in 2007, the City generated approximately 0.0277 teragrams (tg - one million metric tons) of carbon dioxide. A teragram is a globally recognized standard metric unit used to measure emission levels.

The projected construction activities (see Circulation Element) and related population increases (see Land Use Element) based on a built-out scenario that estimates the impact following the development of all vacant lots in the City could directly or indirectly contribute to the generation of additional GHG emissions through the removal of vegetation, construction activities, energy use (gas, electricity and water), solid waste disposal, and motor vehicle use. However, given the limited number of vacant lots left to build on in the City and the limited population increase expected, the additional increase in emissions is expected to be insignificant.

Although the potential increase in GHG emission levels in the City are not projected to be significant, the City is committed to maintaining high standards for public health and to continue to improve air quality and GHG emissions. The City has remodeled municipal facilities to increase energy efficiency, purchased fuel-efficient fleet vehicles, developed water conservation ordinances, expanded office recycling, and promoted alternative transportation options. It has influenced energy efficiency through its authority over land use planning, permitting, local ordinance, and environmental outreach, and education. For example, a 'Green Building' ordinance was adopted in 2008 as an incentive for builders to construct a new or convert an existing structure to the California's Build It Green standards. This program provides incentives that include expedited review and reimbursement of half of the City's application fees. Additionally, the California Building Code has been recently updated to include green building standards (2010), requiring energy efficient development.

The following policies are designed to help reduce GHGs through more efficient energy systems and recycling, reductions in vehicle miles traveled, and the preservation of open space areas.

Climate Change Policies:

Public Facilities and Developments

1. Continue to work with SBCCOG 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 managing the City's transportation fleet fueling standards to achieve the greatest number of hybrid and alternative fuel vehicles.

4. Support the development of alternative fuel infrastructure that is publicly accessible.

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, the City will 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 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 (CEQA), and if potential impacts are identified, require mitigation to reduce the impact to a level less than significant, where technically and economically feasible.

9. Continue to enforce State Title 24[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 developers with a faster 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].

12. Provide information to educate residents and businesses on topics such as waste reduction, recycling, green buildings and landscaping, and renewable energy generation. Utilize a range of tools including fact sheets, website newsletters, advertising, and workshops to reach potential audiences.

13. Continue to provide subsidies in application fees for solar panels, skylights, high efficient pool/spa pumps, tankless water heaters, and energy star[3] units to promote efficient use of energy and conservation.

[1] Title 24 of the California Code of Regulations is also titled The Energy Efficiency Standards for Residential and Nonresidential Buildings were created and 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 (MTA) adopted and updated several CMPs. Cities are required to continue adopting an annual self-certified conformance resolution for conformance with the CMP requirements.

[3] ENERGY STAR is a label often found in various products, such as appliances, which have been certified based on testing in EPA (Environmental Protection Agency)-recognized laboratories that ensures less energy consumption and greenhouse gas emissions than their peers.

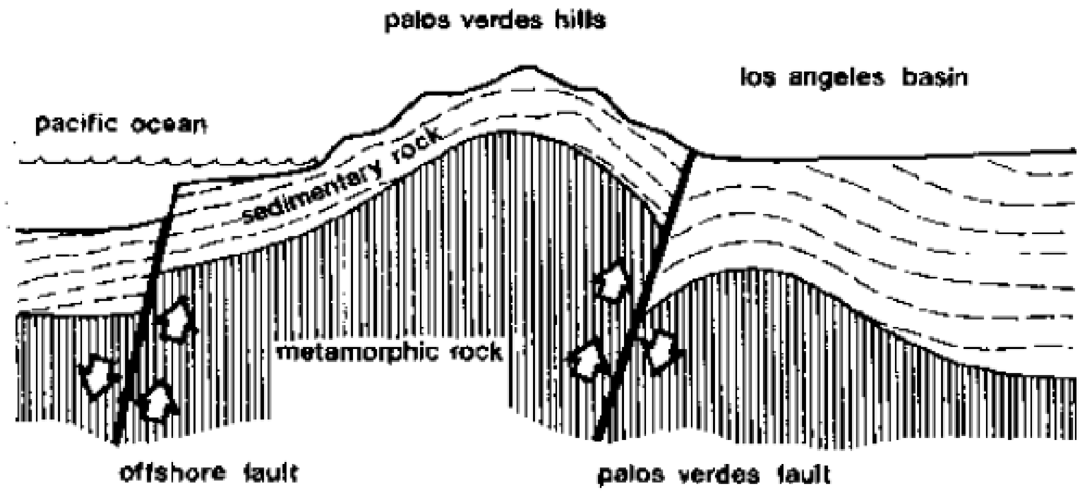
Topography

Development on the Palos Verdes Peninsula has taken advantage of plateaus created over the millennia by the natural terracing caused by changing sea levels and uplifting. In some areas, steep slopes have created difficulties in developing access, utility service, and site improvements resulting in constrained urban development. Within the City, 40% to 50% of all land area would fall into the category of steep slopes with inclines of approximately 25% and above, the remainder being less than 25% in steepness. (See Figure 3 – Slope Gradients). Slope is usually expressed by a percentage figure equal to the number of feet of rise per 100 feet of horizontal distance. Land with average slopes of 10% or less are considered to be flat to rolling and are most easily and generally the first lands to be developed. This pattern of development is apparent in most areas of urban development. Lands of 10% to 25% topography are hilly but construction on this type of terrain is relatively common. Slopes between 25% and 35% become steep, and costs of mass construction begin to increase substantially. Development within this area is often associated with extensive adverse environmental impact, problems of access, maintenance, and appearance. Steeper slopes within this category are generally more suitable for custom house sites and more innovative design solutions. Slopes above 35% are considered as extreme, and development is not, under all but the most unusual and individual circumstances, economically feasible.

Due to the fact that Rancho Palos Verdes is a hillside community with slopes ranging from 5% steepness to over 35% steepness, development across the hillsides is limited. As a result, the community is developed with larger properties offering more open space. In addition, the topography and subsurface strata create various geologic conditions and geotechnical factors that influence how development occurs throughout the City. As a result, in many cases, the topography and geologic conditions have created opportunities to preserve open spaces for visual and/or public recreational resources.

Geologic Conditions & Geotechnical Factors

Geologic Conditions. The Palos Verdes Peninsula bedrock is composed of a metamorphic core blanketed by sequences of younger sedimentary rock. The structure is complicated by smaller-scale folding, and both the schist and sedimentary rocks have been intruded by irregular masses of basaltic volcanic rocks. This entire block has been uplifted by movement on two sub-parallel bounding faults, the Palos Verdes fault on the northeast and the San Pedro fault offshore on the southwest. (See figure below) A series of thirteen staircase marine terraces developed surrounding the Palos Verdes Peninsula during late Pleistocene and Holocene geologic time (the last few hundred thousand years). The sandy marine terrace deposits and overlying deposits of landward origin now occupy some of these benches. The landscape in parts of this area has also been significantly modified by the movement of massive landslides during the time interval between the formation of the oldest terraces and the present.



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

The Monterey Formation is more than 2000 feet thick on the Palos Verdes Peninsula. It has been divided into three members on the basis of rock type: the Altamira Shale, the Valmonte Diatomite (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 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. Thick layers of volcanic ash deposited million 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.

The City of 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 will not be a major factor in determining land use overall in Rancho Palos Verdes. This being said, it is still possible that renewed movement on some existing landslides could be triggered by strong seismic shaking, but this would only occur if these areas are in a meta-stable condition before the earthquake.

Geotechnical Factors/Landslides. Rock type, the structure of the rock, the quantity of available water, and the topographical conditions are factors that influence landslides. Landslides have occurred on the Peninsula along a fault that resulted in surface displacement during the Holocene Epoch and the Pleistocene Epoch which had a history of movement approximately 11,000 and up to 1.6 million years ago, respectively. The locations of these existing slides, some of which have horizontal dimensions of thousands of feet, are known from previous mapping (Vonder Linden and Jahns).

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

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 man's activities.

The following four categories of slope stability have been mapped, shown on Figure 4 (Slope Stability)—Active Landslide, Old Landslide, Possible Landslide, and Non-Landslide areas. The four categories of slope stability have been developed from the landslide mapping developed by Envicom as a portion of the "Geotechnical and Public Safety Report for Cities of Rancho Palos Verdes, Rolling Hills Estates, and Rolling Hills." Old Landslide Areas are presently in a metastable condition and could change to Active Landslides with minor changes in the natural or man-made environment, while other older landslide areas are in a stable condition and could be suitable for residential development (subject to detailed geologic investigations) and human habitation. The significance of the slope stability categories in terms of land use planning are described here (Interpretations by Earth Sciences Associates).

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

- ***Old Landslide areas.*** Areas determined by investigative techniques by a geologist 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. 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 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 where no natural landslides have been identified. A wide range of existing and potential slope stability also exists within this category, and new landslides could be triggered in some areas by human activities, such as excavation. Most of the areas, however, would not be subject to slope failures if developments were carried out properly. Although there is less chance of slope stability problem in this area, geologic and soil engineering investigations should still be required for any proposed development.

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

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

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

The five categories are briefly described as follows (Figure 5 – 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 at the time, the Coastal Setback Zone was established and included all land within Category 1a, Category 1b, Category 2 and Category 3.

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

Mineral Resources

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

According to Woodring, the Palos Verdes Hills (two-thirds of which are Rancho Palos Verdes) have three distinguishable subsurface components, or stratigraphy. These components of geologic time are the epochs, upper and lower Miocene, which date back about 25,000,000 years, and the period Jurassic, which dates back 180,000,000 years. To give some reference to these dates, the Miocene epoch is when mammals like dogs, cats, and horses began to acquire modern characteristics and man-like apes appeared. The Jurassic period is that time in geologic history when the Sierra Nevada Mountains uplifted, and primitive birds appeared. Stratigraphy, in conjunction with the subsurface geology, is significant when one is exploring for valuable resources such as oil and gas. For instance, the Torrance oil field, in which stratigraphy is also characterized by upper and lower Miocene, has a subsurface geology in the sedimentary rock class. Sedimentary rocks are porous and capable of holding deposits such as oil and/or gas within their structure. For the most part, the subsurface geology of Rancho Palos Verdes consists of metamorphic rock with intruded igneous rock. These rock types are generally not known as sources for economic resources such as oil and/or gas. However, it should be noted that the area of Westmont Plaza on the Eastside of the City is underlaid by large petroleum deposits which extend to Long Beach, Wilmington, and San Pedro.

Resources Extracted via Drilling. The first oil well was drilled by the Newton Development Company adjacent to what is now the Terranea Resort Hotel site at Long Point. This well reached a depth of 4,500 feet. The stratigraphy of the well consisted of Miocene to 1,560 feet, turning into volcanic and finally hitting schist at 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, three exploratory wells were drilled in what is now Rancho Palos Verdes. The Lesco Oil Corporation well was drilled in June 1947 just south of 25th Street, and the McVicar well in the vicinity of what is now known as Trump National Golf Club was drilled in 1951. All of these wells were drilled along the coast, where the Miocene layer is deepest. According to the logs filed with the State Division of Oil and Gas, none of these wells showed any indication of oil or gas.

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 versus geothermal potential for electrical energy production. The latter would require hot holes, those wells having temperatures of 212° and above. This kind of heat does not exist in the area at economical drilling depths. The former only requires temperatures above 150° F. This range of temperature is present in many wells in the area, specifically the Torrance oil fields.

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

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

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 1900's. 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 operation may have occurred in the Via Colinita area of Rancho Palos Verdes, probably basalt. In the early 1970's, the County Building and Safety Department had reported problems with some settling of homes in the area, which may have resulted from mining operations that took place. Unlike oil and gas wells, mining and quarrying operations did not have to file for permits with the State, making documented support of these suspicions difficult, if not impossible, to substantiate.

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

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

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

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

Considering the rather low market value of the various mineral resources in Rancho Palos Verdes relative to the land's value as residential or commercial real estate, it is highly unlikely that landowners would wish to utilize the land for mining or quarrying operations. Given the community's goal of maintaining a rural atmosphere, conflicts which might otherwise arise relative to desired land use are not likely to occur.

Hydrology

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

The drainage pattern of Rancho Palos Verdes is divided by a central ridge causing runoff to flow in several directions (Figure 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 flow into the ocean.

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

Little downcutting of drainage canyon bottoms around the City is currently taking place due to erosion because they are already essentially in bedrock. However, Lower San Ramon Canyon is experiencing scour, which is the lowering of the canyon bottom due to erosion. The City continues to make efforts toward mitigating 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 far, more material is carried to the sea by movement of landslides, such as Portuguese Bend, than by stream erosion. Small amounts of material deposited on the beaches by runoff remain only until the next big storm, when it is then washed away by the larger waves and carried southeast by the longshore current. The coastal shelf around the peninsula is primarily rocky as most of the beach sand is transported to other areas along the coast.

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

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

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

The City of Rancho Palos Verdes currently implements the NPDES program as a requirement for certain development proposals. The NPDES process requires developers to incorporate low impact development standards to minimize the amount of runoff and minimize exposure to pollutants such as trash, nutrients, oil and grease, copper, zinc, lead, cadmium, and bacteria. Developers must choose a type of Best Management Practices to mitigate potential pollutants. Applicable projects will not be issued grading, demolition, or building permits unless approval of a NPDES plan is obtained. It should also be noted that the City has adopted a landscape ordinance intended to save water and reduce the amount of runoff into the oceans. Furthermore, Pest Management Plans integrated into Landscape Plans also minimize for harmful chemicals.

Currently, there are a number of existing channels and storm drains which have been both privately and publicly developed. Most have been designed to standards of the LA County Flood Control District and have been deeded to the District. In 2005, residents approved a Storm Drain User Fee, which was established to provide funding for the City's Storm Drain Improvement and Maintenance Program in order to adequately maintain facilities. For fiscal year 2014-2015, the fee was based on $96.75 per Equivalent Residential Unit (ERU) increasing by the lesser of Consumer Price Index or 2% per year at the City Council's discretion). The Storm Drain User Fee will expire in 2016, yielding an estimated $13 million to assist in paying for construction projects, storm drain lining, maintenance, staffing and engineering. In 2009, the City's McCarrell Canyon Storm Drain Project was awarded the 2009 Project of the Year in the Facilities Category by the Southern California Chapter of the American Public Works Association (APWA). This project was established as one of the highest priority planning goals established by the City Council for the Water Quality and Flood Protection Program. The McCarrell Canyon project was paid for with General Fund reserves and storm drain user fees. It will likely be necessary to seek and secure other funding sources to continue the water quality and storm drain programs when the user fee expires in June 2016. As urban development continues to occur, private developers may be required to construct proper storm drain facilities to accommodate the impacts of the development projects.

Biotic Resources

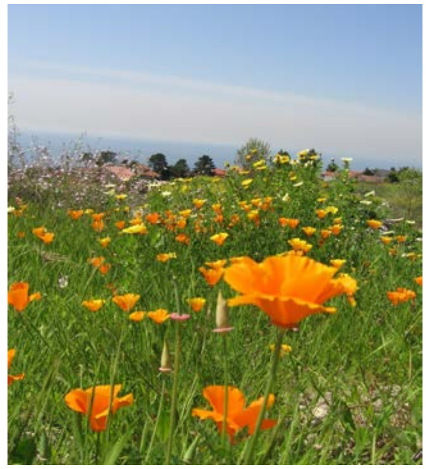
The vegetation community found in Rancho Palos Verdes is Coastal Sage Scrub, Southern Cactus Scrub, Coastal Bluff Scrub, Saltbush Scrub, and some riparian woodland. Since the Peninsula was once an island, many of the plant types are closer to Catalina Island flora than to the chaparral found in the Santa Monica Mountains.

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

Natural Communities Conservation Plan (NCCP)

In 1996, Rancho Palos Verdes entered into an agreement with the State Department of Fish and Game and U.S. Fish and Wildlife Service, collectively referred to as "Wildlife Agencies", to take the lead in the preparation of a Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP). Although the NCCP/HCP covers vegetation and wildlife species found across the entire City, it also created a designated "Preserve" to conserve and re-vegetate sensitive native habitats within Rancho Palos Verdes and provide adequate habitat linkages between patches of conserved habitat. Through a partnership with the Palos Verdes Peninsula Land Conservancy (PVPLC), the City was able to acquire upwards of 1,400 acres of land through public dedications of City-owned land, private donations of land, and formal land purchases. This partnership not only lead efforts in the various forms of land acquisitions for the designated Preserve areas, but also provided necessary support for the design and implementation of the formal NCCP/HCP. Due to the large quantity 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 referred to as the *Open Space Preserve* Land Use designation. These Preserve areas are shown on Figure 7 – Biotic Resources.

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



Vegetation Communities. Sensitive habitats within the City's NCCP/HCP are those that are considered rare in the region, support sensitive species of plants and animals, and/or are subject to regulatory protection through various federal, state, or local policies or regulations. Habitats in RPV include all wetland habitat types (consisting primarily of riparian scrub) and all upland scrub habitats. Grasslands are the first plant community to dominate an area after clearing, either by fire or by human intervention. While some native plants such as Needle Grass, broadleave herbs, or wildflowers will fill in these clear areas, much of the flora is made up of non-native Mediterranean annual grasses, fennel, or mustard. But if patches of native grassland are identified, this habitat should also be considered sensitive. Habitats dominated by non-native plant species (e.g., non-native grassland, exotic woodland, and disturbed vegetation) are generally not considered sensitive. However, non-native grassland is considered sensitive where it occurs in large, contiguous areas because it may provide vital foraging habitat for raptors and support other sensitive plant and wildlife species. Smaller patches of non-native grassland that are contiguous with larger areas of biological open space are also important because they contribute to a habitat mosaic that can be used by sensitive species.

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

Table CO-1
Vegetation Communities in Rancho Palos Verdes (Permit Area)

Natural Vegetation Community	Acres
Coastal Sage Scrub Sub-associations	
CSS – Artemisia Dominated	94.2
CSS – Baccharis Dominated	7.2
CSS – Encelia Dominated	8.2
CSS – Eriogonum Dominated	13.8
CSS – Rhus Dominated	233.9

Natural Vegetation Community	Acres
CSS – Salvia Dominated	25.9
CSS – Undifferentiated	642.3
Saltbush Scrub	7.2
Southern Cactus Scrub (SCS)	99.5
Southern Coastal Bluff Scrub	135.0
Grassland	952.5
Riparian Scrub	2.5
Exotic Woodland	75.4
Disturbed Vegetation	164.9
Subtotal Vegetation	*2,462.5*
Other	
Cliff Face and Rocky Shore	71.8
Disturbed Areas	164.9
Agriculture	17.6
Developed	5981.0
Subtotal Other	*6,235.3*
Total Acreage	8,697.8

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

Reserve Areas within the NCCP

There also exists in Rancho Palos Verdes a number of significant wildlife habitats that are directly associated with vegetation communities. As noted earlier, the City established a NCCP/HCP to preserve the biodiversity within the City boundaries while allowing for continued 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, or economic goals and public access to these open spaces. This approach involved examining opportunities and constraints and incorporating biologically valuable lands into the Preserve. Within the NCCP/HCP is a dedicated Preserve with specified reserve areas. All of these reserve areas are to be managed for the City by the Palos Verdes Peninsula Land Conservancy. These reserve areas along with their corresponding acreage are identified in the Table below.

Table CO-2

Reserve Areas within the NCCP/HCP Preserve
(also referred to as Management Units of Preserve)

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

*Note: 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 which is under State jurisdiction.

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

Table CO-3
Sensitive Species List for the RPV 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

Common Name	Scientific Name	Status
Coastal California Gnatcatcher	*Polioptila californica californica*	FT, SSC
Cactus Wren	*Campylorhynchus brunneicapillus*	NCCP Focal Species SSC

FE = Federally endangered
FT = Federally threatened
SSC = State Species of Concern
CNPS List 1B = Plants, rare, threatened, or endangered in California and elsewhere
CNPS List 4 = Plants of limited distribution - a watch list

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

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

Ocean Resources

The Palos Verdes Peninsula has long been extensively recognized for its beautiful shoreline and rich, abundant marine life. The shoreline is utilized by sport and commercial fisherman, hikers, skin divers, beachcombers, and students. This intense activity combined with other forces from the heavily developed Los Angeles and Orange Counties have affected the ocean environment surrounding the Peninsula. In the estimation of a number of qualified sources, the thousands of species of marine organisms that inhabit the tidepools were once depleted to dangerously low numbers due to excessive use and under-management of the intertidal shoreline area. Some species have been eliminated from the area while others faced the same threat.

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

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

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

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

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

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

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

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

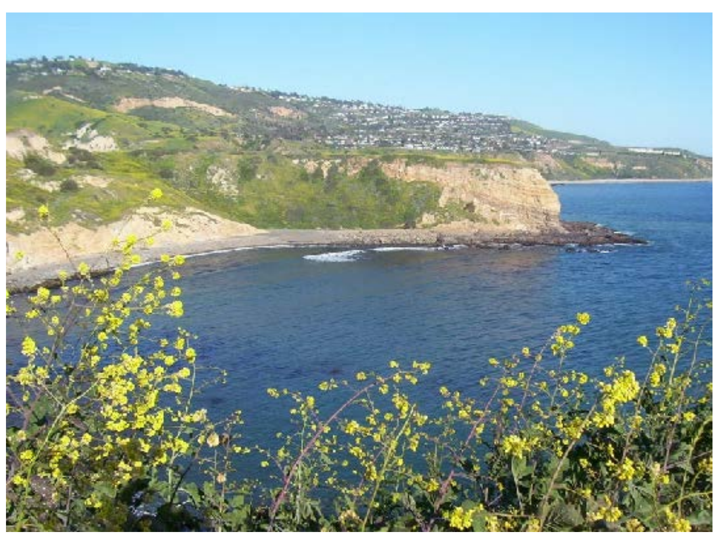
In 1996, the environmental group, Los Angeles Waterkeeper, embarked on a kelp restoration project, again focused on the Palos Verdes Shelf. Through this project, giant kelp was successfully cultivated in a lab and transferred back to its natural ocean environment. Since then, Los Angeles Waterkeeper has been monitoring and restoring the Palos Verdes area. In 2014, extensive surveys mapped out reef 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 Rancho Palos Verdes shoreline has been a major activity area for commercial fishing of species such as lobster, white sea bass, abalone, and crab as well as various species of rock and kelp fish. All of these species were depleted to the point of endangerment and require management for recovery time. Furthermore, the fishing public has been discouraged from consuming certain species of fish (i.e., white croaker, etc.) over the past several years due to the health risks associated with possible DDT contamination.

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

According to the South Coast Regional Commission's estimates, there are provisions for the docking of a very large number of private boats in the South Coast Region. Many private boats are docked within 20 miles of Rancho Palos Verdes. As such, the South Coast Region is probably the most heavily used region in terms of pleasure craft. The large numbers of fishermen and skin divers associated with these pleasure craft in combination with shore fishermen and divers indicate that recreational fishermen contribute heavily to the extraction of the marine resources. In 1999, State Legislators passed the Marine Life Protection Act (MLPA) and proposals to create protected marine areas off of 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.

Abalone Cove Shoreline Park and Pelican Cove (formally Point Vicente Fishing Access) are two of the more ecologically diverse coastal regions in the peninsula. To address man-made impacts, these two coastal regions have been designated as ~~a~~ State Marine Conservation Areas, along the City's coastline, by the California Department Fish and Wildlife. The Abalone Cove SMCA prohibits all "hook and line" fishing at this location and further restricts other fishing practices in the area to only allow recreational take of pelagic finfish. The Point Vicente SMCA prohibits the taking of all living marine resources, including "hook and line" fishing and spear fishing. However, scientific



research and habitat restoration efforts will continue to be allowed through a special permit issued by the Department of Fish and Wildlife.

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

Tide pools and rock intertidal areas are prime areas for the extraction of many of these organisms. Many schools and colleges in the area offer oceanography, marine biology, ecology, and other ocean related classes which utilize the shoreline of Rancho Palos Verdes for observation and study. Specimens are collected for study purposes and taken back to school laboratories. This research and study though further depleting the marine life, is essential in developing attitudes and management policies for proper conservation practices in the future.

Another damaging effect on tide pools and rocky intertidal areas is that of abuse by the unknowledgeable tide pool visitor. Numerous marine organisms attach 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, and food remnants leaving an aesthetically unpleasing environment for the next visitor. Years ago these practices went unnoticed but due to the numerous visitors to the shore during the last decade, the tidal areas of Rancho Palos Verdes have suffered severely.

As a result of the denuded tide pools and general environmental degradation, restrictions have now been placed on unwarranted collection. The California Superintendent of Public Instruction and the Department of Fish and Game have developed guidelines for conserving tide pool resources. Today, State legislation prohibits the taking of any tide pool organisms without a permit from the Department of Fish and Game. Permits are issued to only those county education offices which adopted approved plans for conservation of tide pool life and who employ a staff biologist to conduct the program. The main problem now is enforcement with those who are unaware of the laws or refuse to comply with them. In 2010, the City hired a Park Ranger to patrol, control and educate people recreationally using the City's beaches, parks and trails to help ensure that sensitive areas throughout the City, including tide pools, are maintained in a thriving state.

The City could elect to gain control over the tidelands (area from mean high tide line seaward 3 miles) from the State Lands Commission. In this manner the City 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, 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.

Resource Classification

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

All factors (ecological 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 would be natural topography alteration resulting in a change in hydrologic patterns, which in turn may deprive natural vegetation of adequate irrigation, and thus causing a degradation of wildlife habitat. An analysis of the basic ecological units as described in the previous chapters enabled an understanding allowing identification and classification of critical areas for management considerations. As a result, two classifications evolved which delineate:

1. Areas for Consideration of Public Health and Safety.
2. Areas for Preservation of Natural Resources.

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. 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, 8 and 9 are those natural resource elements having unique values meriting consideration for preservation.

Below is a list of the Resource Management Districts.

Table CO-4 - Code Designations

Resource Management District	Code Designation
Coastal Zone	RM 1
Extreme Slope (greater than 35%)	RM 2
High Slope (between 25% to 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

Areas for the Consideration of Public Health & Safety

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

The Resource Management Districts related to Public Health and Safety and their numeric code are as follows:

Table CO-5 - Code Designations

Resource Management District	Code Designation
Coastal Sea Cliff Erosion	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

The location of these 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 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, ground and surface water conditions and variations, and other factors affecting slope stability. The studies describe the effects of the proposed development and must prove to the satisfaction of the City Geologist that the proposed development conforms to existing site conditions and presents no significant risk to human life, or adverse environmental impact before approval for any development is granted.

RM 2 – Extreme Slope. 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 cutting into slopes and embankments are potential instigators of landslide and the probability of these occurrences can be high within this district. Developments should consider retaining natural topographic conditions. Practices distorting the topography of hillsides are limited pursuant to the City's Development Code. Non-structural uses such as passive park, trails, agriculture, etc., are permitted along with minor alterations for ancillary accessory structures. Detailed engineering/geologic study may be required for development proposals or use to demonstrate to the satisfaction of the City that the proposed development or use will not significantly alter the existing topography, pose risk to human life or cause adverse environmental impact. Due to the scale of the accompanying maps, some areas of extreme slopes may not have been plotted, just as there may be some isolated areas identified as extreme slope which are not actually 35% or greater. It is intended, however, that all slope areas will be subject to the development criteria cited for the actual slope category a particular parcel is classified.

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

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

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

Areas for the 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.

Table CO-6 - Code Designations

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

The location of these Resource Management Districts may be found on Figure 9. 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 maintain the optimum operation of the hydrologic cycle since it constitutes an important resource (water) and interacts with other resources (vegetation, ocean resources). The fact that all watershed systems within Rancho Palos Verdes are either influenced by or influence other jurisdictions requires that full regional cooperation be sought and agreement be developed with regard to the management of these resources. Watershed management should prohibit activities that create excessive silt, increase drainage load, cause pollutant runoff, increase canyon-wall erosion, or potential for landslide. Present drainage courses are generally stable and the characteristics of these courses should remain natural. Any substantial modification to stream flow, channel configuration, or ocean outfalls should be restricted to prevent increased erosion and coastal degradation. Development projects located near environmentally sensitive areas and/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 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 shall follow established NCCP 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 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 shall follow established NCCP guidelines.

Conservation

Conservation of Areas with Multiple Resource Management Districts

The Conservation and Open Space Element is a composite of those Management Resource Districts requiring considerations of public health and safety, and those areas requiring preservation of natural resources. As discussed earlier, the manner of their relationships may have different affects upon other management districts. Further, some districts may have more sensitivity towards future development within that district than others. All of the individual conservation efforts and development criteria described earlier in each Resource Management District, shall be considered together when there are multiple districts in one area. Thus, multiple

Resource Management Districts falling in one specific area will naturally have more sensitivity to future development as opposed to areas with only one Resource Management District. For 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.

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

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 human activities during these times, often erroneously called "pre-history." The only records we have of 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 people of earlier times related to one another, their god, and to nature. Such insight may well be the key to understanding 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. 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 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 Rancho Palos Verdes, several significant archaeological sites are known to exist. In addition to these known sites, there are areas within Rancho Palos Verdes which are "probable" archaeological sites. The area around these sites should also be considered as "archaeologically sensitive."

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

The most prominent of the archaeological phenomena which occurs on the Peninsula is the middens left by the Tongva-Indians 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 Rancho Palos Verdes' coastline where the Tongva-Indians 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 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 in upper Portuguese Bend.

There are other areas in Rancho Palos Verdes which have archaeological significance. Many of these sites have already been impacted by construction. As a result, those few remaining undisturbed archaeological sites have an increased significance and added archaeological value in that they become the remaining, but decreasing, vestige of human history 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 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); the Portuguese Bend Riding Club and stables, which serves as the hub of a social sector in the area; and the Lloyd Wright-designed Wayfarers Chapel, which was placed on the National Register in 2005. These sites and structures represent the major historical points in Rancho Palos Verdes.

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

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 to not make any decision. Traditionally, such a policy of non-decision by the affected governmental unit has added to the rapid depletion of the nation's archaeological resource.

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

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

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

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

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

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

Vehicles for Identification and Protection of Archaeological Resources. The California Historical Resources Information System includes the statewide Historical Resources Inventory database maintained by the Office of Historic Preservation and the records maintained and managed, under contract, by eleven independent regional Information Centers. The Information Centers provide archeological and historical resources information, on a fee-for-service basis, to local governments and individuals with responsibilities under the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA), as well as to the general public. The South Central Coastal Information Center, responsible for information collected in Los Angeles County, is located at California State University, Fullerton.

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

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

Open Spaces and Recreational Resources

This portion of the Element inventories the variety of Open Space and Recreational resource opportunities within the City. The City has natural open space (some privately owned and some under City jurisdiction including Preserves subject to NCCP guidelines) and parks that include a mix of active and/or passive uses. These Open Space and Recreational areas are shown on Figure 10 – Open Space Rec.

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 Open Space Areas

To serve aesthetic means as well as preserving natural resources and protecting the public's health and safety, many of the existing residential subdivisions developed within the City as Residential Planned Developments include open space areas that are subdivided parcels dedicated to be preserved as open space, and are privately owned - typically by the subdivision's Homeowner's Associations. These open space areas often include trails and vista points that were required as part of the subdivision and maintained through dedicated public access easements. It is also worthy to note that some open space areas within existing subdivisions serve as recreational opportunities. Within Rancho Palos Verdes, various types of private facilities (tennis courts, equestrian centers, beach clubs, etc.) are available to individuals who either pay a fee for their use or are members of the club operating the facility.

Additionally, there are many individual parcels in the City that are privately owned and due to their topographic and/or geologic nature, the parcel may not be able to be developed. As a result, a portion or the entirety of these parcels often have a land use designation of "Hazard" or "Open Space Hillside", which prohibit most types of development. These parcels also 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.

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

Finally, it is worth noting that the City is home to eight elementary schools, three middle schools, and one high school under the jurisdiction of the School District, and Marymount California University, and The Salvation Army College. While these campuses have buildings on them, they also have fairly extensive open space areas used recreationally by the students that attend the facilities as well as members of the community.

Public Open Space Areas

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

Recreational Resources

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.

City of Rancho Palos Verdes Recreational Parks and Facilities

Abalone Cove Shoreline Park – Recreational Passive/Open Space Preserve: This park features access through the Abalone Cove Reserve, which is part of the City's NCCP, 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 (Upper Site) – Recreational Active: This 28.32 acre park, with its well-manicured parkland and active community center, is one of the most popular in the City. Among the features available for public enjoyment in the upper park area are baseball and soccer fields, numerous picnic areas with barbecues, playground equipment suitable for toddlers to adolescents, and a well-used ¼ mile walking path. Most of the 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 to provide space for government meetings.

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, and comfortable locations for enjoying panoramic views of Catalina Island north to Malibu. In 2009, the City Council took action to initiate improvements to the lower portion of Hesse Park for the purpose of improving accessibility to all user groups and enhancing the aesthetic condition of the Park.

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

Upper Point Vicente Park/Civic Center – Recreational Passive, Institutional Public and Open Space Preserve: Formerly a WWII bunker site and Nike Missile Base, this 73.3 acre site is comprised of 8.23 acres dedicated to Institutional Use; 51.3 acres of Open Space Preserve lands; and 13.82 acres of Recreational Passive park land. The site surrounds a 3.9 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, Palos Verdes on the Net computer center and 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 51.3 acres of Open Space Preserve lands sloping down the hillside, known as the Alta Vicente Reserve, will be encumbered by a conservation easement as well as the POU. The NCCP 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 and PUMP document.

In 2004, the City Council identified the development of a new Civic Center on the upper flat area as one of its tactical goals. Along these lines, the City's Coast Vision Plan (adopted September 2008) identified the site as suitable for a new City Hall, Community Center, and Cultural Center along with a Village Green, additional parking spaces and trail heads. In 2009, the City Council initiated the creation of a Civic Center Master Plan, however, in 2012 this planning effort was placed on hold. 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. Any changes in land use to the property through future Master Planning efforts would 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, and an off-street parking lot.

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

Don C. Wallace Radio Ranch Museum – 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 more than 30 years ago. 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.

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 Trump National. The park includes the monument sign for Trump National Golf Course, a drinking fountain at the trailhead. Views of Catalina Island and the ocean can be observed from this park.

Pelican Cove – 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.

Shoreline Park – Open Space Preserve: This Park is entirely within the Ocean Trails Reserve. 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 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 in an effort 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 Active: Gateway Park is approximately 17-acres in size, located at the southern tip of the Portuguese Bend Preserve. As part of the Coast Vision Plan, Gateway Park was identified to include an equestrian center and a parking lot that would also serve as a trailhead to the Preserve. No permanent structures are envisioned on this property due to the active land movement in the area.

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) in the City and partially in the City of Los Angeles. The park offers dramatic panoramic views of Catalina Island, Los Angeles, and Long Beach Harbors**,** Los Angeles to the north, and the San Bernardino Mountain ranges. Several hiking trails are on the property as well as restored native habitat areas. The site also includes a 4,000 square foot nature center, with indoor and outdoor classrooms. A picnic area, barbecues and playground overlook are also within the park boundaries.

Los Verdes golf Course – 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).

Palos Verdes Peninsula Unified School District Facilities

Although the Palos Verdes Peninsula Unified School District's facilities are under their own jurisdiction, the District 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.

NCCP Reserve Areas

Abalone Cove Reserve. This reserve consists of a 63-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 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 Barkentine 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 98.5 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 and equestrians. It also contains habitat corridors deemed essential for maintaining stable populations of California Gnatcatchers and Cactus Wren.

Filiorum Reserve. This 190 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. The Filiorum Reserve also includes the Del Cerro Buffer, which is property owned by the City, is 17.44 acres, and consists of very steep slopes immediately adjacent to Del Cerro Park.

Portuguese Bend Reserve. This property owned by the City is 423.9 acres and includes a portion of the active landslide. This area is used by hikers and equestrians.

Forrestal Reserve. The property owned by the City was acquired from the Diamond Brothers Three Partnership in December, 1996. The total cost of the property was funded through two revenue sources: Los Angeles County Regional Park and Open Space District at $4,300,000, and the California Wildlife Conservation Board at $3,400,000. The property is 154.9 acres in size. There are some trails that exist on the property as well as a paved road and significant drainage structures remaining from a proposed subdivision.

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

Lunada Canyon. This property owned by the Palos Verdes Peninsula Land Conservancy is 20 acres. This parcel is contiguous with Agua Amarga Reserve and also has pristine habitat.

Alta Vicente Reserve. This 51.3 acre parcel is below the upper flat area of Upper Point Vicente City Hall 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. Johnathan Atwood did an extensive study of the Coastal Gnatcatcher at this site and influenced the policies for the focus species for the NCCP. 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 70.5 acres were acquired through dedication as a condition of the development of the 79 lot Ocean Front Estates subdivision. The dedications were made under the Quimby Act. Included in the dedication, at the top of the bluff and extending the full length of the ocean frontage of the development, are approximately 47 acres of open space served by a trail system and a public parking lot. An additional 24 acres of restored native habitat is also included in the project. 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 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. 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 reserve is within the Trump National Golf Club site. While the 5.5 acre Founders Park and some open space lots have been dedicated and accepted by the City, 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 property was received in satisfaction of the conditions of the Quimby Act in conjunction with the 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 94.5 acres and is very steep with commanding views of the ocean and Catalina. Although Palos Verdes Drive East is within this reserve boundary, parking and access to the open space areas is very difficult. Portions of the reserve are at the San Ramon canyon bottom that may require some erosion mitigation.

Vista Del Norte Reserve. A 19.72-acre parcel was purchased by the City's former Redevelopment Agency for approximately $702,000 in March, 2000 in the hopes of developing Senior Affordable Housing to meet the City's affordable housing needs. The purchase amount came from the Redevelopment Agency's Housing Set-Aside Fund. In 2009, the City and Agency approved a Parcel Map that subdivided the parcel into two parcels: Parcel #1 - a 2.92 acre parcel to accommodate the development of a 34-unit senior affordable housing project ("Mirandela"); and the remainder Parcel #2, which is owned by the City and part of the NCCP called the Vista Del Norte Reserve. This is a 16.8 acre steep parcel that was split off from the

RDA Crestridge Parcel. It borders Rolling Hills Estates along Indian Peak Road and has some native habitat and trails.

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

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

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

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

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

Trump National Golf Club. In addition to the other open space that will be deeded to the City, the Trump National Habitat Conservation Plan (HCP) is required to maintain two open space lots under private ownership. One is the 5.3-acre Forrestal Draw (Canyon) parcel and the other is the 4.4-acre Upper La Rotonda Canyon parcel. Since these two lots are to remain privately owned they cannot be formally dedicated to the Preserve without the property owner's consent. It is anticipated that the property owner may wish to either dedicate the habitat portions of these lots to the Preserve or create a conservation easement.

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

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

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

Private Lands in Montemalaga Canyon. There are several privately owned tax parcels located in the northern portion of the City within Montemalaga Canyon that total 64.3 acres and could add habitat value to the City's Preserve. In 2014, the City Council authorized enrolling 58 acres of the Montemalaga Canyon into the City's Palos Verdes Nature Preserve once a conservation easement is recorded on the property.

Additional Public Open Space

Cherry Hill Lots. Six Cherry Hill lots were purchased from the RDA when the City moved Palos Verdes Drive South back into its original easement in 1988. Since that time, additional lots were purchased, totaling 5.8 acres in area including the originally acquired RDA properties. Most of these lots are unimproved however at least one lot has dewatering facilities on a portion of the property. The City is currently in the process of acquiring two additional tax defaulted properties, with the purchases anticipated to be complete in 2016.

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

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.

Coast Vision Plan

Adopted on September 2, 2008, the Coast Vision Plan represents over two years of planning to create an informational planning document for the City's coastal areas (including five key sites not included in the City's Palos Verdes Nature Preserve), with public access, interpretive materials, recreational amenities, and other facilities to improve the experience of the coast and open space for residents of and visitors to the Peninsula. The Plan presents a vision, goals, concept designs and design guidance that seek to cohesively link key open space properties and public lands along the coast, including the NCCP properties located within the Palos Verdes Nature Preserve.

Policies

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

Conservation Policies

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

1. Permit development within the Sea Cliff Erosion Area (RM 1) only if demonstrated, through detailed geologic analysis, that the design and setbacks are adequate to insure public safety and to maintain physical, biologic, and scenic resources. Due to the sensitive nature of RM 1, this area is included as an integral part of the Coastal Specific Plan.

2. Allow only low intensity activities within Resource Management District of extreme slopes (RM 2).

3. Require any development within the Resource Management Districts of high slopes (RM 3) and old landslide area (RM 5) to perform at least one, and preferably two, independent engineering studies concerning the geo-technical, soils, and other stability factors (including seismic considerations) affecting this site following established geological industry standards.

4. 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.

5. 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.

6. 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).

7. In addition to the Abalone Cove Ecological Reserve, establish the rocky intertidal areas throughout the remainder of the City's coastline as marine reserves and enforce all regulations concerning marine resources (Resource Management District~~s~~–RM 7).

8. 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.

9. Require developments within Resource Management Districts containing Natural Vegetation (RM 9) to revegetate with appropriate locally native plants wherever reasonably possible whenever clearing of vegetation is required.

10. Stringently regulate irrigation, natural drainage, and other water related considerations in both new development and existing uses affecting existing or potential slide areas.

11. Consider development exceptions in areas otherwise precluding development for health and safety reasons, only if the development can establish beyond a reasonable doubt that it can overcome the conditions otherwise precluding development, and is otherwise compatible with the intent of the General and Specific Plans for the area.

12. 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. These lists should be distributed to all applicants for business licenses in the City. Additionally, the City should make efforts (including brochures, pamphlets, local community television, etc.) to continually inform and educate all residents and business operators about the impact of chemicals such as fertilizers, insecticides and herbicides on the environment and to encourage responsible use and disposal of such materials.

13. 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.

14. Maintain the existing natural vegetation of the City in its natural state 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.

15. Require a master landscape plan, with an Integrated Pest Management Plan, for any proposed development demonstrating enhancement and protection of natural vegetation proposed, selection of new complementing vegetation, and enhancement of the environmental factors.

Policies Specific to the Natural Communities Conservation Plan

16. Implement the Rancho Palos Verdes Natural Communities Conservation Plan (NCCP).

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. Collect baseline data for air and water quality in order to develop standards for evaluation of the impacts of current or proposed development in and adjacent to Rancho Palos Verdes.

20. 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.

21. Encourage study of and funding to preserve native flora and fauna.

Habitat Protection

24. Work with neighboring jurisdictions to manage contiguous wildlife and habitat areas and recreational amenities such as trails.

25. 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.

Cultural Resources Policies

30. 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. Forward Environmental Impact Reports to the California State University, Fullerton, SCCIC's clearinghouse for this area.

33. 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.

34. Attempt to acquire the Point Vicente Lighthouse property as an extension of Point Vicente Park. Consider supporting the addition of other appropriate historic sites in the City to the State and National Historic Register.

35. 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.

Open Space and Recreational Resources Policies

36. Provide appropriate access to public land.

37. Promote and/or sponsor recreation programs within the City.

38. Encourage local, public, non-profit recreational and cultural activities.

39. Seek County, State, Federal and private funds to acquire, improve and maintain recreational lands.

40. Work through the State and Federal government in support of legislation resulting in City acquisition of land.

41. 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.

42. Encourage institutions to provide public use of its recreation facilities.

43. Encourage the building of playing fields, where appropriate, for multiple uses by various recreational groups.

The State of California requires a Land Use Element to be included in every local government general plan. According to the State's General plan Guidelines, the Land Use Element shall designate the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, 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 uses shall consider the identification of land and natural resources suitable for designation in the Conservation and Open Space Element. The Land Use Element shall 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 flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources.

The City's Land Use 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.

In preparation of the City's first General Plan, these determinants were overlaid for the various areas and analyzed for their relationships. The initial step was to determine which areas had characteristics that should preclude them from use for physical development. The primary determinants were natural environmental constraints and safety. These areas are discussed and summarized in the Conservation and Open Space Element and Safety Element of this Plan.

In the City's first 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, in addition to the concepts of overlay control districts and specific plan areas.

Goals

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

1. Provide for land uses that will be sensitive to and enhance the natural environment and character of the City, supply appropriate facilities to serve residents and visitors, 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. Preserve and enhance the visual character and physical quality of existing neighborhoods and housing in a manner which serves the needs of the residents.

4. Rancho Palos Verdes is a residential City dedicated to the preservation of open space. The City shall discourage activities that are not compatible with the terrain and environmental characteristics of a respective region of the City. Activities shall

be carefully and strictly controlled, and limited, giving consideration to the respective neighboring residential or open space areas.

5. Encourage the development of institutional facilities to serve the needs of its residents. Such development shall be carefully and strictly controlled, and limited, giving consideration to the respective neighboring residential or open space areas.

6. Endeavor to provide, develop, and maintain recreational facilities and programs of various types to provide a variety of activities.

7. Existing agricultural uses within the City shall be allowed so long as they are in concert with the environmental objectives stated elsewhere in the General Plan.

After laying out the goals and introduction for the Land Use Element, it continues by identifying 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 slope. They also represent areas designated as Open Space Preservation, which make up the City's Palos Verdes Nature Preserve.

- The Urban Activity Areas include~~s~~ the Residential (also discussed in the Housing Element), Commercial, Institutional, Recreational, Agricultural, and Infrastructure Facility land use designations.

Also included is the analysis of population and housing trends from the City's incorporation to "build out" in 2030. The Land Use Element then goes on to discuss the application of special districts such as Overlay Control Districts and Specific Plan that have been adopted for certain sites or areas within the City. The Land Use Element then touches briefly upon the compatibility of development activity in adjacent jurisdictions with the City of Rancho Palos Verdes. Finally, the element enumerates the City's Land Use Policies.

Natural Environment / Hazard Areas

Natural environment/hazard areas to be maintained encompass approximately 1,710 acres of land. There are three separate land use designations that encompass these areas: "Hazard", "Open Space Hillside" and "Open Space Preserve." Descriptions of each of these designations follow.

Hazard

The Hazard 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 Conservation and Open Space Element and the Safety Element in the section on areas for consideration of public health and safety.

The Hazard Area designation includes an area of existing residences, part of the Portuguese Bend community, located within the active Portuguese Bend landslide. This Plan recognizes these existing residences, in a density range of 1-2 d.u./acre, overlaid with the Hazard designation. The criteria and policies to regulate this area have been codified in the City's Landslide Moratorium Ordinance (Chapter 15.20 of the Rancho Palos Verdes 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.

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.

Open Space Hillside

The Open Space Hillside areas also possess extreme physical constraints and will be maintained in open space at this time, with very light intensity uses permitted such as agriculture, recreational activities, and very minor structures, for the protection of public health, safety, and welfare. The constraints include: active landslide and extreme slope of 35 percent or greater. These relate directly back to the analysis and policies in the Conservation and Open Space Element and the Safety Element in the section on areas for 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.

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 1,367 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. These properties have been consolidated under the ownership of the City to form the "backbone" of the Palos Verdes Nature Preserve.

Urban Land Areas

Urban activity areas encompass the majority of the land uses in the City, totaling approximately 6,564 acres.

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 2013, the City is nearly built out. As described in Table LU-1 below, there remain limited opportunities for new residential or non-residential development of "raw" land within the City.

As such, new development activity is expected to be mainly limited to the "re-development" of existing developed sites.

Table LU-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 Land Areas:			**6,564**
Residential*	5,110	390	5,500
Commercial	273	9	282
Institutional	338	10	348
Recreational	396	17	413
Infrastructure	21	0	21
TOTAL			**8,274**

* 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.

Residential

Residential activities are the major land use in the City, with existing and proposed residential uses encompassing approximately 5,500 acres (66.5% of the total land area). Approximately 390 acres are vacant and 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. The discussion of residential opportunities and constraints throughout the City is discussed in the Housing and Social Services Element of the General Plan

Residential Densities

The Land Use Element establishes several ranges of residential density. These density 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 multi-family residences.

- ***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 deadend streets, and providing development types consistent with the adjacent neighborhoods, while preserving the most sensitive areas of the canyons. This development approach would serve to mitigate environmental impacts.

- ***1 Dwelling Unit per acre.*** Land designated in this density in the original General Plan was of two primary types. Firstly, areas identified in the Conservation and Open Space 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, areas in the Coastal Specific Plan District that were not yet committed to urban use 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. Since the adoption of the City's 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.*** Land designated in this density range in the original General Plan had 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. Since the adoption of the City's first General Plan, most of this land has been committed to urban use, including the *Seacrest*, *Seabreeze, Alta Vista*, *The Island View*, *Seacliff Hills*, *Rancho Palos Verdes Estates* and *Park Place* neighborhoods. 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.

- ***2 to 4 Dwelling Units per Acre.*** Land designated in this density range in the original General Plan had low and moderate physical and social constraints and the density was compatible with the adjacent existing and future densities. At the time of the adoption of the City's first General Plan, most of this land had already been committed to urban use. Since the adoption of the original General Plan, vacant land in this density range has been developed, including the *Wallace Ranch*, *Alida Place*, *Tuscan Village* and *Villa Verde* neighborhoods. There currently remain only a few, widely scattered larger parcels designated for this density that could be developed in the future.

- ***4 to 6 Dwelling Units per Acre.*** Land designated in this density range in the original General Plan had generally low physical and social constraints. 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.

- ***6 to 12 Dwelling Units per Acre.*** Land designated in this density range in the original General Plan had much the same determinants 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. Since the adoption of the original General Plan, vacant land in this density range has been developed, including the *Villa Capri* and *La Cima* neighborhoods. There currently remain no vacant parcels designated for this density that could be developed in the future.

- ***12 to 22 Dwelling Units per Acre.*** Land 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. Only one parcel of vacant land is designated in this density range. Entitlements to develop a 28-unit condominium project (*Highridge Condominiums*) on this 1.23-acre site were granted by the City in 2008 and construction of the project began in 2013.

Commercial

Existing Commercial Activity

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 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 still limited, although they were substantially expanded as a result of the annexation of the Eastview area in 1983. Located in the Eastview area, 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. Major tenants in The Terraces includes an LA Fitness center (formerly known as Bally's Fitness), a Marshall's department store (which replaced a former Do-It Center home improvement center), a Trader Joe's market and a 6-screen multiplex cinema.

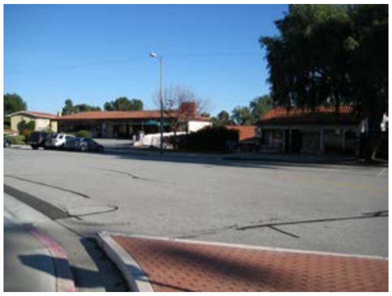
The second largest retail facility in the City is the 6.35-acre Golden Cove Center, located at Hawthorne Boulevard and Palos Verdes Drive West. The Golden Cove Center was also extensively renovated and expanded beginning in the late 1990s. Major tenants in the Golden Cove Center includes the Peninsula Montessori School (occupying the renovated former Vons supermarket building), a Trader Joe's market (replacing the former bank building that had been occupied by the Golden Lotus restaurant), and the Admiral Risty restaurant. Three freestanding pad buildings along the Palos Verdes Drive West frontage of the site were constructed in the early 2000s and are occupied by a Starbucks coffee shop, a Subway sandwich shop and other food/restaurant tenants. The existing 2-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, the former Unocal service station at the corner of Hawthorne Boulevard and Palos Verdes Drive West was renovated in the early 2000s and re-opened as a 7-11 convenience store and Citgo gasoline station.

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. In 2010, major tenants in Westmont Plaza included a Smart & Final store (which occupies the space vacated by a former Albertson's supermarket), a Wells Fargo bank, a Coco's restaurant and a veterinary hospital (occupying a renovated former Reuben's Steakhouse restaurant building).

The fourth largest commercial center in the City is the Ralphs supermarket on a 4.52-acre site at 30019 Hawthorne Boulevard. The building was originally occupied by a Hughes supermarket and included several interior suites that were separately occupied by a bank branch, an independent pharmacy, The Appetizer sandwich shop and a postal annex. Ralphs' parent company acquired the Hughes chain and renovated the building in the early 2000s, converting it into an upscale "Ralphs Fresh Fair" supermarket. With the exception of a small portion of the building that is still occupied by a bank branch, the site is now effectively a single-tenant commercial center.

Other commercial centers in the City include:

- Miraleste Plaza, with several small retail 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,
- Five other automotive service stations at various locations in the City (decreased from ten service stations in 1975).
- A stand-alone Veterinarian Hospital near the Golden Cove Center.

Office Space

Office space activities in Rancho Palos Verdes occur mainly in a strip of multi-tenant buildings along the north side of Silver Spur Road. This 17.03-acre district was developed with 5 multi-story office buildings constructed during the 1980s and 1990s (430, 450, 500, 550 and 580 Silver Spur Road). 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. The City's most recent office building development is a financial institution located at the northwest corner of Crest Road and Hawthorne Boulevard.

Commercial Recreational

Commercial recreational activity in Rancho Palos Verdes consists of the former site of the large entertainment/recreation attraction at Long Point, Marineland of the Pacific. The Marineland restaurant and motel closed during the late 1970s and, after passing through the ownership of several different entities, the entire facility was closed in 1987. Applications to redevelop the site as a resort complex were considered by the City during the late 1980s and into the 1990s, but did not come to fruition at that time.

In 2000, Destination Resorts International submitted the initial applications for development of a hotel and golf resort on the Long Point property and portions of adjacent City-owned property. In 2002, these applications were revised to contain the entire project to the former Marineland site. After a series of further project revisions and public hearings before the Rancho Palos Verdes City Council and the California Coastal Commission from 2002 to 2006, the Terranea Resort was eventually approved. The approved Terranea project encompassed the following facilities and amenities:

- A 400-room resort hotel (bungalows included) with a short game golf course (9 golf holes);
- 50 casitas (a maximum of 3 keys per unit);
- 32 single-keyed villa units; and,
- Conference center, golf club house, spa, related commercial uses, restaurants, public trails and park areas, coastal access points, 100 public parking spaces, and natural open space and habitat areas.

The demolition of the remaining buildings and infrastructure from the former Marineland development occurred in Summer 2006, and the Terranea Resort opened in Summer 2009.

Industrial Activity

The majority of industrial activities within the Palos Verdes Peninsula were formerly located on the northern face of the hill, and many of these have been replaced by other uses since 1975. Rolling Hills Estates contained most of the industrial areas, these being Northrop's scientific research and development center on Crest Road (now the site of a 68-home, gated residential neighborhood); the former Palos Verdes landfill (closed in 1980); and Chandler's quarry, which is now in use as an inert landfill but has been proposed for residential development. Industrial activities are nonexistent within Rancho Palos Verdes and will not be induced under the General Plan. This decision is based on the inability of the Peninsula to support traffic and site impacts that are associated with this type of activity, 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.

The City approved the first Master Plan for Green Hills in 1991. This original Master Plan allowed for 194,340 cubic yards of grading to be balanced on site (i.e., no import or export) and the development of 2.44 acres of additional mausoleum footprint area; 11.87 acres of additional burial sites; 27.21 acres of additional ground burial sites; and 3.72 acres of additional roads.

In 2007, the City approved a revision to Green Hills' Master Plan, which is intended to guide the development of the property over a period of 30 to 50 years. The 2007 Master Plan Revision allows up to a total of 643,259 cubic yards of grading, which includes 97,964 cubic yards of import for the mausoleum buildings proposed throughout the cemetery site, and all cut and fill associated with ground burials throughout the cemetery site for the life of the Master Plan. The import of fill material will be conducted in phases as each mausoleum building is constructed. The Master Plan Revision also clarifies the total number of ground burial sites permitted; allows a reconfiguration, relocation and expansion of a previously-approved mausoleum building, resulting in 5 separate mausoleum buildings with each footprint measuring 23,653 square feet at a location that is approximately 300-feet farther west than approved in the original Master Plan; allows a new 75,131-square-foot mausoleum building to the west of the existing mortuary; allows a larger mausoleum building than previously approved for the area southeast of the existing maintenance yard; and allows a reduction in the size of the previously approved mausoleum building at the southwest side of the cemetery. In summary, the Master Plan Revision allows a net increase of 2.17 acres of mausoleum footprint area and allows for a total of 643,259 cubic yards of grading over the next 30 to 50 years, as compared to the original 1991 Master Plan.

Future Commercial Activity

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.

Retail

In 1975, the General Plan identified two retail activity areas in order to meet expected future retail demand. The first area involved the opening for development of a 7.16-acre parcel adjacent to the Golden Cove Center. In 1984, the City approved the re-designation of a 6.10-acre portion of this site for residential use at a density of 6 to 12 dwelling units per acre. The City subsequently approved the 49-unit *Villa Capri* project on this portion of the site, which was constructed in 1989. The remaining 1.06-acre portion of the site is the current location of a new Veterinary Hospital. As such, in 2013 there is no longer vacant land abutting the Golden Cove Center that is available for its future expansion.

The second retail activity area was not specifically located, but would have introduced a new neighborhood-scale commercial center in the southeastern section of the City, as a part of what is now the Trump National Golf Club. However, the entitlements granted by the City and the California Coastal Commission for what is now Trump National did not include the designation of a site for a neighborhood commercial center.

In 1980, the City re-designated a vacant, 2.05-acre property at 980 Silver Spur Road from office use to retail use. A commercial development on the property was subsequently approved by the City in 1986, but these entitlements expired in 1990 after the City had granted several extensions. The property owner ultimately donated the property to the City in 1994. Therefore, the General Plan does not identify this site as a location for future growth of retail commercial activity. Further, as part of the City's 2014 General Plan Update, this property's land use designation was changed from Commercial to Recreational-Passive.

With the annexation of the Eastview area in 1983, the commercial corridor along Western Avenue became a part of the City. All of the properties within this corridor that are designated for retail use were developed at the time of their annexation, and remain so in 2010. Therefore, the General Plan does not identify locations for future growth of retail commercial activity in the Eastview area.

In summary, the General Plan does not identify any available vacant land 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 the renovation and remodeling of existing retail developments, as was recently completed at the Golden Cove Center. One such opportunity is the City's recent efforts towards improving 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

There is 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

Service Stations

The number of service stations in the City of Rancho Palos Verdes has decreased from ten in 1975 to six in 2013. There is no longer an oversupply of such uses along Crest Road or Palos Verdes Drive South, such as had previously existed in 1975. However, in order to ensure that the supply of automotive service stations in the City remains sufficient to provide for 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, which is discussed in greater detail further on in this Element, is intended to preserve existing automotive commercial services, which are essential to the residents of the City. The development criteria for such projects require that the design of the project reduce adverse impacts on adjoining residential areas.

There are eight (8) properties that are subject to the Automotive Service Station Overlay Control (OC-4) District regulations. Of these, seven (7) sites retain some form of automotive service use, although not all of them still involve the dispensing of gasoline. The eighth site is located at the southeast corner of Crest Road and Whitley Collins Drive, and is the former site of a Unocal service station that was demolished in the 1990s.

This 0.47-acre site is currently undeveloped. It is a pad lot with nearly equal frontages along both Crest Road and Whitley Collins Drive. While the Unocal service station was in operation, the site's soil was contaminated by leaking underground gasoline storage tanks. In 1996, the remediation process began with the removal of contaminated soil. From 1997 to 2010, temporary soil and groundwater remediation equipment was operated on the site, first by Unocal and eventually by Chevron. This equipment was removed from the site in 2010 when the Los Angeles Regional Water Quality Control Board determined that active remediation measures were no longer necessary for the site. With the removal of this equipment, the only remaining site improvements are a perimeter fence and ornamental landscaping, which Chevron is required to maintain. The OC-4 designation for the site could allow for the future re-establishment of an automotive service use on this site. Any such future use of this site should be of very light intensity due to the character of the site and to minimize traffic impacts.

As an alternative to service station use, the underlying 1 to 2 Dwelling Units per Acre residential land use designation for the property would allow single-family residential development. Given the small size of the site, this would allow for the development of only one single-family residence, which depending upon the value of the land, might or might not be financially feasible for a future developer. Any future proposal to increase the maximum allowable residential density for this site should be carefully considered for its impacts upon adjacent residential uses. Alternative commercial uses (such as retail) would introduce too much intensity of use to the site, resulting in conflicts with surrounding land uses.

Commercial Land Use Designations

The Land Use Element designates approximately 282 acres for commercial use, 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 most of a retail or office type. Approximately 9 acres are vacant and proposed 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.

Commercial uses tend to have environmental impacts unless small in scale and very carefully designed.

Over the course of the past thirty-five years, the community has become accustomed to and dependent upon certain commercial activities, which are scattered 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.

Institutional

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.

Public Activities (Figure 11 – Public Facilities)

City Facilities

The City is presently operating as a contract city. Contracts with Los Angeles County include services for police and fire protection. The present City staff provides most other administrative and public service to the City's residents.

Since 1975, the City has acquired the old Nike missile sites for parkland (Del Cerro Park) and the City Hall site. While the 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. The buildings at the City Hall site have undergone very modest upgrades over the years to accommodate expanded City services, a City storage yard, Peninsula Seniors and Palos Verdes on the Net. 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).

Fire Protection Facilities

Currently, the County of Los Angeles provides fire protection to the City of Rancho Palos Verdes through the operation of the following fire stations, two of which are located within the City:

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

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 portion of Friendship Park and a communications tower located south of the Peninsula Center area.

State Facilities

There are no State facilities or land in the City.

Federal Facilities

There are three Federal facilities in the City. These include the Point Vicente Lighthouse and Coast Guard Station (29 acres); 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 services for the City are headquartered at the main post office in Rolling Hills Estates; there is no branch post office in the City. However, it should be noted that the City successfully petitioned the U.S. Postal Service to assign the 90275 ZIP code to all of Rancho Palos Verdes in the early 1990s, 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.

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). In 2012, the District enrolled approximately 11,839 students. The District's reputation for having a high-quality education system attracts many families to this suburban area and its schools. Students attend two early childhood centers, ten elementary schools, three intermediate schools, two comprehensive high schools and one continuation school. 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 PTA programs support and enrich school delivery systems.

There are, within the boundaries of the City, one early childhood center, eight elementary schools, and two intermediate schools; however, attendance boundaries extend across city boundaries. The District owns no other property in the City with exception to playing fields adjacent to the Ladera Linda Community Center site.

The District grew most rapidly between 1955 and 1965, when fourteen of the 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 1980's, four elementary schools were closed due to declining enrollment. School enrollment reached a high of 17,836 in 1973-74. There was a small "bump" in enrollment in FY 2005-06, but the District's projected enrollment has declined over the years to a projected 11,700 in 2015. As such, the demand for additional classrooms and classroom seats is not expected to increase in the foreseeable future.

The District discontinued bus service in 1964. Presently, student bus transportation is provided by the Palos Verdes Peninsula Transit Authority (PVPTA), a joint powers authority serving the District and all four cities on the Peninsula and beyond. The PVPTA operates from District-owned property in the City of Rolling Hills that was originally used as the District's administrative offices. Nevertheless, there is a large amount of automobile traffic to and from all schools

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 within the District was expected to be in Rancho Palos Verdes. With the adoption of the City's original General Plan, the residential densities previously proposed by the County were substantially reduced, particularly within the coastal portion of the City. Furthermore, the City's acquisition of undeveloped, open-space areas has also reduced the potential future "inventory" of new households within the District's boundaries. At this point, it is not clear if there will be a continuing need for either additional schools and/or expansion of existing facilities. It is concluded that, at minimum, the community is faced with continual enrollment boundary changes. Nevertheless, the City must continue to work closely with the District in planning, projections, and school needs.

The District currently occupies the former 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. The City supports a potential, permanent joint-use facility with the District on the Nike site in the City as a part of a future civic center complex.

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. There are, within the boundary of the City, one elementary school and one intermediate 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. However, in 1998, the City was successful (with the assistance of local

State legislators) in passing legislation allowing Eastview residents to send their children to PVPUSD schools.

Libraries

The Palos Verdes Library District (PVLD) serves the entire Peninsula. 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 1,000,000 books, which is extremely high for the Peninsula's population. The 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 as part of the civic center of the City.

Private Schools

The Peninsula contains several private schools: Chadwick School, Peninsula Montessori School, Rolling Hills Country Day School and St. John Fisher, plus several nursery schools and day care centers.

The growing demand for child care centers and nursery schools has generated the problem of ensuring 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.

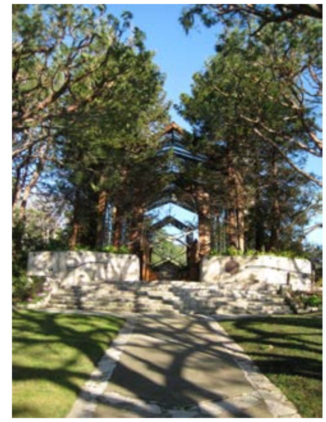
Colleges

The community college district serving the Palos Verdes Peninsula is the Los Angeles Community College District. The nearest community college is Los Angeles Harbor College located in Wilmington.

Marymount California University has been in Rancho Palos Verdes since 1958. A major modernization of the campus facilities on Palos Verdes Drive East was approved by the City in June 2010. It has also been recently accredited to offer 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. A major expansion of this facility was approved by the City in the 1990s but was not constructed. However, in 2008, a 3-story addition to an existing dormitory building was approved to provide additional cadet housing.

Religious Activities



There are twenty churches and one synagogue on the Peninsula. Ten churches are based in the City; seven have their own physical facilities. Four additional church buildings have been constructed on the Peninsula since 1975. The Plan designates an area for religious and 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.

Institutional Land Use Designations

The Land Use Element designates approximately 348 acres for institutional use. Approximately 9.82 acres are vacant and proposed for new institutional use. Institutional uses include facilities for 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. Institutional uses exist in the area, and the intent is to provide for a complex of future such uses, rather than allowing them to scatter throughout the community, where they are sometimes incompatible with other uses. Within this area there exist three senior housing facilities that have been approved by the City as being uses that are compatible with the Institutional land use designation:

- *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 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.

- Located between the *Belmont Village* and *Mirandela* projects is the vacant 9.82-acre property. Since the late 1990s, several commercial developers have proposed senior. "market-rate" condominium projects on this site. In 2013 the City Council approved a 60 unit age restricted (55 years+) market rate condominium project that includes a clubhouse, resident services, three affordable housing units and a public access trail through the project site.

Another major area designated for institutional use is a portion of_the current Point Vicente Park and Civic Center, a former Nike missile site that was acquired from the U.S. government in 1976. In 2010, the Rancho Palos Verdes City Council had a tactical goal of developing a new civic center on this site, however master planning efforts have been put on hold.

In considering the future development of institutional sites, environmental impacts must be mitigated through proper design.

Recreational

Recreational activity 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 this section briefly covers recreational activity areas, a detailed discussion of the available active and passive recreational activity areas in the City can be found in the Conservation/Open Space Element. Additionally, path and trail networks, systems which involve linear right-of-way for the purpose of transportation or recreation, are addressed within the Circulation Element.

The City has established a City-wide park acreage standard of 4 acres per 1,000 population. Based upon the City's 2013 Census population of 42,448 persons, this equates to a park acreage standard of 166.5 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 golf courses, private recreational facilities, public school playing fields and the property owned and operated by the Miraleste Recreation and Park District.

As authorized by the Subdivision Map Act, the City requires the dedication of land or the payment of in-lieu fees (so-called "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 (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. Additionally, some existing facilities may be changed to either increase or decrease their recreational opportunities.

As of 2010, there were proposals submitted for the development, expansion and/or enhancement of the following three (3) City-owned recreational facilities:

- Lower Hesse Park and Grandview Park: The City is considering improvements to both Lower Hesse Park and Grandview Park. The park improvement plans are essentially intended to improve accessibility to all park user groups, and to enhance the aesthetic condition of both parks. The City is considering such amenities as a dog park, trails, exercise and play equipment, and picnic and restroom facilities at either or both sites. The City conducted public workshops to engage the public in the design process for both park projects, and at the time of the preparation of this General Plan, the Grandview Park project was still being processed, while a scaled back Lower Hesse Park project has begun construction.

- Abalone Cove Shoreline Park: In December 2011, the City received a grant from the Land and Water Conservation Fund (LWCF) for the following improvements, which were completed in November 2014. The grant award reimbursed the City for 50% of the project cost of these improvements.

  - Replacing picnic tables and benches;
  - Replacing trash receptacles;
  - Installing a drinking fountain;
  - Installing mutt mitt dispensers;
  - Improving trailheads and all trails/paths;
  - Replacing bluff top fencing;
  - Installing interpretive signs along trails;

- Installing viewing nodes with viewing station telescopes;
- Installing boulders;
- Install landscaping and irrigation;
- Constructing an exploration play area; and
- Installing bike racks.

Recreational Land Use Designations

The Land Use Element designates approximately 413 acres for recreational use. Recreational uses are held by public agencies and developed or proposed for development for active or passive recreational activity. Additional recreational land may be designated after more specific study is made of community 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.

The environmental impacts of the development of new recreational facilities should be low.

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.

Historically, agriculture in the City has been 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. Former agricultural practices included 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. This area is now owned by the City and is no longer in agricultural use.

The second area is not designated on the Land Use Plan but consists of two farming sites located on opposite sides of Palos Verdes Drive South near Point Vicente. Both of the farms are located on leased portions of City-owned sites which are used for other activities. However, the lease for farming activity on the Lower Point Vicente site has been terminated. 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 previously existed 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. Currently, there are none in operation.

Infrastructure Facility

The Land Use Element designates approximately 21 acres 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. However, designated facilities include reservoirs and electric utility substations.

Population Projections

The Land Use Plan designates 399.48 acres for new residential development. Table LU-2 below provides a breakdown by land use category of where new residential development is expected.

Table LU-2: 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	1262	130.87	1438.79	34.23
1-2 d.u./acre/Hazard Area*		45.92		
2-4 d.u./acre	2208	40.07	2248.07	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	**3804**	**399.48**	**4203.48**	**100.00**

* This combined land use designation occurs within the active Portuguese Bend landslide area.

Although it 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 LU-3 reflects the most recent U.S. Census 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 LU-4's estimate of the total number of "build-out" dwelling units being 16,935 in 2030.

Table LU-3: Dwelling Units by Type and Total Population, 1980 to 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
Multi-family	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

Table LU-3: Dwelling Units by Type and Total Population, 1980 to 2030

	Census 1980	Census 1990	Census 2000	Census 2010	Projected 2020	Projected 2030
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 LU-4 and LU-5 below. The greatest increases in population are expected within areas of the City designated for development at a density of less than 4 d.u. per acre, which for the most part tend to be in-fill lots.

Table LU-4: 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
Multi-Family*	2,645	16.35	88*	11.64	2,733	16.14
TOTAL	**16,179**	**100.00**	**756**	**100.00**	**16,935**	**100.00**

* "Multi-family – 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.

Table LU-5: 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
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**	**1927**

Table LU-5: Projected New Residential Units and Population Increase by Density Range by 2030

Density Ranges	Undeveloped Acreage	Projected Dwelling Units	Projected Additional Population**

* This combined land use designation occurs within the active Portuguese Bend landslide area.
** Population projections assume 2.65 persons/DU and 3.80% vacancy rate, based upon State Department of Finance estimates (2010).
*** Assumes development of approved 28-unit condominium project.
**** Assumes development of approved 60-unit senior condominium project.

Overlay Control Districts

Overlay Control Districts are incorporated into the General Plan in order to further reduce impacts that could be induced by 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 extreme conditions were placed in open space), 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, to possess special features, and have been incorporated for the following reasons:

- 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.

Control Districts Applying to Natural Factors

Areas delineated within this control district shall develop 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.

Control Districts Applying to Socio/Cultural Factors

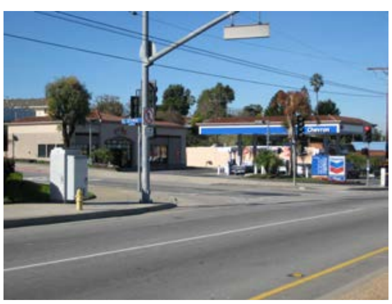
Land areas within this District shall preserve, protect, and maintain land and water areas and improvements which have significant historical, archaeological, or cultural importance to the public.

Control Districts Applying to Urban Activities

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.

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.

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 Section 17.40.070 of the City's Municipal Code.

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 Section 17.40.080 of the City's Municipal Code.

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 Palos Verdes 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.

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 five specific plan districts, one within its coastal region (Coastal Specific Plan District) and 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). It should also be noted that 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 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.

Coastal Specific Plan District

Rancho Palos Verdes, being a newly-incorporated City as of September 1973, was under legislative law to adopt a General Plan by June 1975. This time schedule would be severe to most established cities; and, being a newly-incorporated city required an assemblage of base information. An environmental resource inventory, census profile, and economic base perspective were developed, on which sound land use and fiscal projections could be based. In the course of preparing this plan, it became evident that the time constraint would not permit a thorough study of the City's highly complex and sensitive coastline. Therefore, s specific plan district was designated on the coastal area to permit further study of this environment.

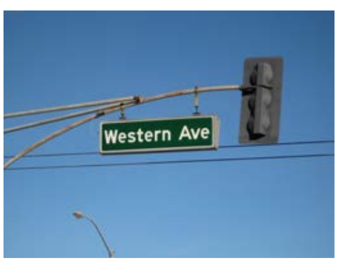
It was quite evident that, in preparing the Coastal Specific Plan, it would be necessary to further assess physical factors. A more accurate definition of bluff stability was needed so that those areas which were geologically unstable could be accurately identified and areas capable of supporting structures would be known. Biological input was crucially needed to better assess both terrestrial and marine habitats and to develop sound land use and resource policies which would not only ensure their continued existence but also increase the quality of these habitats where feasible.

Land use decisions had to respond to environmentally sensitive natural features as well as physical limitations of infrastructural systems. These systems have defined limitations due to the City's location on a peninsula, which limits the direction from which their networks can provide service. All land use decisions and policies had to be based on a sound fiscal approach, which is a primary concern of the City.

Not only were physical factors important, but also social concerns. It was indicated through the passage of Proposition 20 in 1972 that the entire state of California was concerned with the management of the State's coastline, for which Rancho Palos Verdes is the primary governing body of 7-1/2 miles. It is important that the coastal specific plan respond not only to local social need; a perspective must also be maintained as to its value as a locally defined public resource.

At the onset of the study, jurisdictional control of land use and zoning matters was undefined. It was unclear whether the California legislature would maintain local control of coastal areas or whether a state Coastal Commission would evolve as an overseeing agency, presiding over local jurisdictions to ensure their compliance with the California Coastal Plan (the plan founded on the passage of Proposition 20). Therefore, a close watch over the progress of associated coastal legislation needed to be maintained in order to evaluate the relative compatibility/non-compatibility of these issues with the City's Coastal Specific Plan.

The subsequent 1976 Coastal Act redefined the Coastal Commission's jurisdiction within the City to coincide with the established Coastal Specific Plan District. Therefore, this Plan not only serves as a local specific plan, but also represents the City's Local Land Use Plan component of the Local Coastal Program, as mandated by the 1976 act. In adopting the Coastal Specific Plan in December 1978, the City found that this plan addresses the required 1976 Coastal Act goals and policies, as they are intended to apply to the City’s segment of the California coastline. The California Coastal Commission subsequently certified the City’s Coastal Specific Plan District in April 1983.



Western Avenue Specific Plans

There are 3 separate Western Specific Plans covering 3 distinct districts as discussed below. As discussed earlier, the City has begun efforts towards improving 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 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 compliment 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 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 compliment 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 which 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.

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.

Former Redevelopment Project Area

The Rancho Palos Verdes 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 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 Redevelopment Agency had carried out an active and successful redevelopment program since the activation of the Agency 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 Rancho Palos Verdes Redevelopment Agency (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 up the affairs of the former RDA in accordance with state law.

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. The specific restrictions imposed within the LMA are described in the City's Landslide Moratorium Ordinance

(Chapter 15.20 of the Rancho Palos Verdes 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 (LME). New construction is not permitted on properties in the LMA that are not currently developed with residential structures unless a Moratorium Exclusion (ME) is granted, which would effectively remove the subject properties from the LMA.

In 2002, a group of *Portuguese Bend* property owners filed an ME 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 ME application was deemed incomplete for processing, the applicants filed suit against the City. Eventually, the case (*Monks v. Rancho Palos Verdes*) 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 LMEs for their lots. The City began issuing LMEs 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 31 undeveloped lots in Zone 2 to be developed with new residences. Although this discussion has been tabled, if enacted, this would result in the possible future development of up to 47 new residences on existing legal lots in Zone 2 within the *Portuguese Bend* community. Additionally, in early 2015, a code amendment has been initiated to revise the Landslide Moratorium Ordinance that could permit the property owners of the following undeveloped lots to develop one dwelling unit:

- The 94-acre *Point View* property ~~is~~ located on the inland side of Palos Verdes Drive South between the *Portuguese Bend* and *Upper Abalone Cove* communities.

- The 28-acre *Plumtree* property ~~is~~ located immediately upslope from the *Portuguese Bend* community at the terminus of Plumtree Road. It is a portion excluded from the "Upper Filiorum" property, which was acquired by the City in 2009 for inclusion to the Palos Verdes Nature Preserve.

In addition to the consideration of new development on existing vacant lots in the Landslide Moratorium Area (LMA), there has been requests to exclude larger undeveloped tracts of land from the LMA to allow for future development. The City has yet to act upon a request for a Moratorium Exclusion (ME). However, the City expects that a 6.94-acre property located at 20 Vanderlip may seek approval of an ME to allow the subdivision of the property into four single family residential lots.

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 the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The Flood Insurance Rate Maps (FIRM) prepared by FEMA indicate that most of the City of Rancho Palos Verdes 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 nature preserves; and other public and private properties. Much of this property is designated as Hazard Area or Open Space Preserve 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.

Compatibility of Adjacent Activity Areas to Rancho Palos Verdes

In evaluating the impacts of adjacent activity areas outside of the City upon 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 contained Northrop's research and development facility, a small nursery, and large amounts of undeveloped land, a portion of which was then in agricultural use. In recent years, nearly all of these sites have been developed or redeveloped, with the exception of the former nursery at the northeast corner of Crest Road and Highridge Road. The northern area consists of residential condominium developments along Highridge Road and the Peninsula Center commercial district. The major concern here was the degree of intensity to which vacant commercial lands might develop in the future. 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.

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. 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 CEQA and/or entitlement process. Since 2002, the City has offered its input on a number of controversial proposals in surrounding jurisdictions, including:

- The *Ponte Vista* 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;

- The development of a residence in Palos Verdes Estates that abutted and could have adversely affected views from the City's Grandview Park; and,
- A number of proposals for the expansion of container terminals and other facilities in the Port of Los Angeles.

The City should continue to monitor development in nearby communities to ensure that adverse impacts upon the City and its residents are avoided or minimized.

Policies

Compatibility of Adjacent Land Use Areas

1. Work in conjunction with neighboring jurisdictions when development plans are submitted to either this City or the other jurisdictions which generate impacts across jurisdictional lines.

Residential Land Use Policies

2. Retain the present predominance of single-family residences found throughout the City. Allow for the maintenance and replacement of existing non-conforming multi-family residential uses.

3. Require all new housing developed to include suitable and adequate landscaping, open space, and other design amenities to meet the City's standards.

4. Encourage and assist in the maintenance and improvement of all residential neighborhoods so as to maintain local standards of housing quality and design.

5. Maintain and update the Development codes with quality standards, being flexible to new technology and techniques of building.

6. Require all developments that include open space 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.

7. Control the alteration of natural terrain.

8. Encourage energy and water conservation in housing design.

9. Require that development reasonably protects corridor-related views.

10. Prohibit encroachment on existing scenic views reasonably expected by neighboring residents.

11. Enforce height controls to reasonably minimize view obstructions.

12. Encourage all development to preserve neighboring site privacy.

13. Preserve the rural and open character of the City through zoning, cooperation with other jurisdictions, and acquisition of open space land.

14. Require all new housing and significant improvements to existing housing to consider neighborhood compatibility.

Commercial Land Use Policies

15. Place commercial and institutional developments under the same building orientation controls as residential developments in regard to topographic and climatic design factors.

16. Require that commercial and institutional activity buffer and mitigate negative impacts on adjoining residential areas.

17. Required commercial and institutional development to be designed to maximize pedestrian safety.

18. Require that scenic view 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.

19. Require commercial and institutional sites to limit the exposure of parking and exterior service areas from the view of adjoining sites and circulation routes.

20. Specify the mix of standard and compact parking spaces for new development to ensure that all parking requirements are met.

21. 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

22. Require any new schools and encourage existing schools to provide adequate on-site parking and automobile access.

23. Incorporate the Coast Guard Station into Lower Point Vicente Park when it is deactivated.

24. Coordinate with the School District on cross-jurisdictional issues.

25. Encourage implementation of plans for pedestrian and bicycling networks linking residential areas with schools for the safety of children.

26. Review the location and site design of future institutional uses to ensure their compatibility with adjacent sites.

27. Encourage mitigation of the adverse aesthetic impacts of utility facilities.

28. Encourage the unification of the Eastview students into the Palos Verdes Peninsula Unified School District.

Recreational Land Use Policy

29. Encourage local groups to participate in the planning, development, and maintenance of recreation facilities.

Agricultural Land Use Policies

30. Encourage preservation of agricultural activities.

31. Encourage continued operation of existing produce and flower stands.

Open Space Preservation Land Use Policy

32. All land with an Open Space Preservation Land Use Designation shall be utilized in compliance with the City's NCCP.

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 General Plan. The element also has a role in planning for the future with regards 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. Their location and nature 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." While not all inclusive, the Rancho Palos Verdes' Circulation Maps illustrate arterials, collectors, and local streets; bus routes; public transit routes, bikeways; and trails.

The purpose of this element is to present a plan to ensure that transportation, including public transportation services, and utilities, are constantly available to permit orderly growth and to promote the public health, safety, and welfare. The 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 retrofit) 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 utilizing complete street concepts to integrate the needs of all users of the roadway system consistent with the California Complete Streets Act of 2008 (AB 1358).

Goals

To set the context of the Circulation Element, the following are its goals:

1. Ensure adequate public utilities and communication services to all residents, while considering environmental, aesthetic and view impacts.

2. Provide and maintain a safe, efficient and comprehensive system of roads and trails, and to coordinate them with other jurisdictions and agencies.

3. Facilitate mobility of residents through 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 (AB 1358).

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
- Path 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.

Vehicular Networks

Rancho Palos Verdes residents, like most Southern Californians, rely on the automobile as the principal mode of transportation. 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 the development of this Plan are the potential effects 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 in respect to congestion and pollution. Therefore, the proposals and recommendations made herein reflect this concern.

Freeways

There are no freeways on the Peninsula now and it is not likely there ever will be in the future. Peninsula residents, however, have access to and use the extensive freeway network which is so much a part of travel in Southern California. The Harbor and San Diego Freeways act as principal links to commuters and to distant points.

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.

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 collect**s** 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;
- Western Avenue; and
- 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. Arterials are typically characterized by both two-lane and four-lane undivided roadways.

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

- Indian Peak;
- Ridgegate Drive;
- Granvia Altamira; and,
- Montemalaga Drive.

Local. Local streets are minor networks that have the principal function to provide access to adjoining property. 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 12 – 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 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, 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 City's existing character, community desires, or impact on neighboring cities.

A detailed analysis of the existing street system within Rancho Palos Verdes was performed on July 19, 2010 and is summarized in this document. The results 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 unacceptable Levels of Service (LOS E or F). Traffic impacts are determined through assessing traffic volumes at intersections and roadway segments, and assigning a Level of Service (LOS). A 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 or F are unacceptable levels during the AM peak hour and/or the PM peak hour. Congestion at 22 of the highest traffic intersections was measured resulting in 18 of 22 operating at acceptable levels.

However, the following four intersections are currently operating at unacceptable levels of service:

- Grayslake Rd.—Highridge Rd., at Hawthorne Blvd
- Forrestal Dr.—Ocean Trails Dr., at PV Drive South
- PV Drive East, at Miraleste Drive
- PV Drive East, at PV Drive South

There are 28 roadway segments studied through the traffic analysis for the general plan update. The existing LOS of the 28 roadway segments assessed reveals that 20 roadway segments are currently operating at LOS A; two are operating at LOS B; one is operating at LOS C; and, two are operating at LOS D (LOS A thru D are acceptable Levels). The following three roadway segments are currently operating at unacceptable levels of LOS F:

- Hawthorne Boulevard – Indian Peak Road to Grayslake Road/Highridge Road
- Palos Verdes Drive East – North City limit to Miraleste Drive
- Palos Verdes Drive South – Palos Verdes Drive East to East City limit

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, build-out of the remaining 439 vacant developable parcels (436 of which are 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 build-out 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 within 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 build-out.

Planned roadway and intersection improvements were also included in the future growth analysis. 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 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. 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 build-out 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. Notwithstanding, some of the intersection 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. As such, incorporating improvements by build-out year 2035 will help mitigate the increase traffic volumes resulting from ultimate build-out.

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 to be distorted, warped and broken, which impacts the smooth flow of traffic through this area of the City. However, the City spends approximately $574,500 annually (Fiscal Year 2014-2015) in repairs and maintenance to 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 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 is the San Ramon Canyon. The erosion of San Ramon 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 the San Ramon Canyon, the City completed its largest and most expensive (15.5 million) public works project in 2014 – a tunneled system that will transfers water in San Ramon Canyon to the Ocean.

Relation to Air Quality

Air pollution on a local level is induced by various sources, including vehicular traffic, emissions associated with short-term construction of development projects, specific types of equipment, paints and solvents, and even consumer products. Air quality in the City has been relatively good due to the topography, despite the increase in population and cars since incorporation.

In 2005, 78,681 metric tons of CO_2 were generated from travel activities originating within the City's boundaries and traveling to a destination outside of the community; more emissions, 80,301 metric tons of CO_2, were generated by travel that started outside of the City and ended within the City's boundary. A small portion of emissions (7,080 metric tons of CO_2) can be attributed to vehicle trips that started and ended within the boundary. The majority of on-road travel emissions (94%) are from gasoline powered passenger vehicles while the remaining (6%) are the result to diesel powered vehicles. Emissions related to off-road vehicles, such as lawn, garden, construction, industrial and light commercial equipment make up about 1% of the total emissions.

Since 1990, studies (SBCCOG, 2011) have shown declines in emissions primarily due to increased fuel efficiency of gasoline powered passenger vehicles. In 1990, the average mpg (miles per gallon) for passenger vehicles was 15.945 and in 2005 the average mpg was 18.61. That is a 16.71% improvement in fuel efficiency from 1990 to 2005.

According to the air quality study (LSA, 2010), with a built-out scenario that estimates the impact following the development of all vacant lots in the City, an increase of 58,000 metric tons of CO_2 will be generated from travel emissions. If the population increases at the same rate while the fuel efficiency continues to improve, a further decline in emissions can be expected in the future years.

Despite anticipated decline in future emission levels, there may be localized air quality impacts at congested roadways and intersections. The primary source of CO_2 is vehicle idling time and related traffic flow conditions. Typically, high CO_2 concentrations are associated with extremely high traffic volumes, normally occurring during peak traffic hours. Based on a Traffic Impact Analysis (Wildan Engineering, July 19, 2010) for the existing and built-out scenarios, the CO_2 concentrations at various signalized intersections at peak traffic conditions will remain below the corresponding State and Federal CO_2 standards. Therefore, no significant impacts on local air quality for CO_2 are anticipated in the future years.

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. However, there are techniques which can be implemented at the local level to reduce traffic noise impacts. For outdoor activity areas (i.e., yards, patios, etc.) within the 65 dBA CNEL contour, a sound wall with a minimum wall height of 5 ft could be provided to reduce the exterior noise levels for residential or other noise-sensitive land uses.

To meet the State's 45 dBA CNEL interior-noise standard and to achieve the indoor air-exchange ventilation requirements specified in the Uniform Building Code, all residential structures within the 65 dBA CNEL contour along major roadway segments that do not have shielding from natural or manmade barriers could have mechanical ventilation to ensure that windows can remain closed for a prolonged period of time. In addition, residential homes proposed within the 65 dBA CNEL contour along major roadway segments that have no natural or manmade barriers providing shielding effect could have building façade upgrades (i.e., double-paned windows, solid-core wood doors, etc). See the Noise Element for a depiction of the 65 dBA CNEL contours and additional information regarding traffic noise impacts and possible efforts to address those impacts.

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. 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 13 – Public Transit).

PV Transit provides a fixed route and dial-a-ride services on the Palos Verdes Peninsula. The fixed route service includes eight 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.

The dial-a-ride service goes off the Palos Verdes Peninsula for medical purposes. The service goes to all hospitals, medical buildings, and doctors offices in Torrance, Harbor City, San Pedro, and Redondo Beach.

Taxi service is available on the Peninsula; however, due to the relatively high expense, few residents rely on this system for daily transportation needs.

Path and Trail Networks

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 functioning 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 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 (AB 1358).

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.

Sidewalks

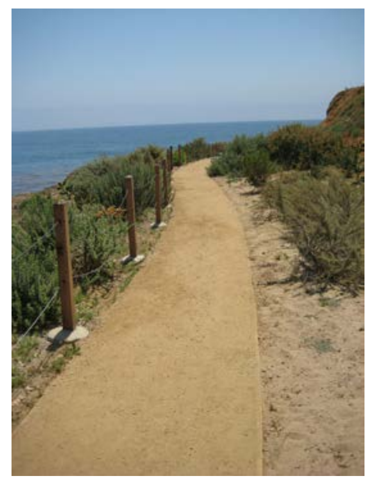
While the roadway system focuses on the opportunity for vehicular travel, the walkway (i.e., sidewalk) system enhances and increases opportunities for pedestrian foot travel, such as walking, jogging, and hiking. Unlike trails, which are typified as natural paths providing recreational opportunities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

The Public Works Department has an annual sidewalk repair program to ensure the continual maintenance of the existing sidewalk system. The intent of this program is to correct potentially hazardous portions of existing sidewalks, driveway approaches and parkways which could pose a problem to pedestrians. The City has established a program to help assure that the damaged improvements 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 ADA compliance and consistency with applicable laws and design standards.

The Vision Plan also identified the enhancement of pedestrian pathways along roadways either through the development of city standard sidewalks or permeable paving such as decomposed granite, where appropriate (i.e., trails, as discussed above). In addition, the Vision Plan identifies 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 City annually adopt a Capital Improvement Plan (CIP), which is a guide for the efficient and effective provision of resources for improving and maintaining public infrastructure and facilities. The CIP 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.

Pedestrian Trails

While sidewalks are typically known for their impervious surfaces paralleling streets and roadways, pedestrian trails are nodes that are typically identified by their pervious surfaces and are typically paths that do not parallel a street or roadway; rather, these nodes typically traverse open space area to offer a more natural experience and enjoyment. These pedestrian trails also connect their user to natural and scenic points on the peninsula that can only be attained by foot due to topographic and/or environmental sensitivities that make it inappropriate to be accessed by motorized vehicles or by other means.



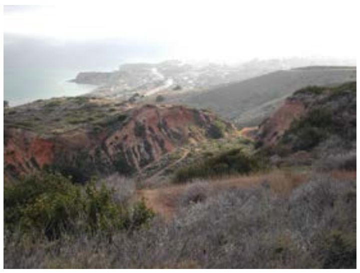
Pedestrian trails are an important part of a balanced transportation network; however, the primary function of pedestrian trails is to a more recreational need.

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 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.

Within Rancho Palos Verdes, two general locations now support major concentrations of horses and limited equestrian trails. They are: the East side and the Portuguese Bend area. The equestrian trails in the Conceptual Trails Plan 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.

Trails Network Plan



The City's first General Plan identified broad deficiencies with the path and trail networks within the City of Rancho Palos Verdes. 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 utilized 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 (CTP) was last updated in 1993, the CTP has been augmented by additional documents. Thus, the current Trails Network Plan consists of the following documents:

- Conceptual Trails Plan (1993);
- Conceptual Bikeways Plan (1996);
- Preserve Trails Plan (2008); and,
- Coast Vision Plan (2009)

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 into the Conceptual Trails Plan does not legally grant the use of the trail by the public or in any way guarantee their eventual implementation.

In August 2004, the City Council approved the NCCP subarea plan for final review and approval by the Resource Agencies. The Council-approved NCCP requires the City and the Palos Verdes Peninsula Land Conservancy to develop a Public Use Master Plan (PUMP) document that identifies how public use of the Preserve should be managed. Specifically, the PUMP is to address issues such as public access, trailhead locations, parking, trail uses, fencing, signs, and other issues that may arise. As part of the PUMP preparation process, a Preserve Trails Plan was adopted by the City Council in April 2008 that identifies the permitted trail routes and the permitted trail uses (pedestrian, equestrian, and bicycle) within the Palos Verdes Nature Preserve. Adoption of the Preserve Trails Plan augments the Conceptual Trails Plan.

The Conceptual Trails Plan was further augmented with the 2009 adoption of the Coast Vision Plan. The Coast Vision Plan includes components to establish a continuous coastal access trail linkage through the City's Coastal Zone, implementing the 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 bicycle.

In summary, the Coast Vision Plan, the Public Use Master Plan's (PUMP's) Preserve Trails Plan, and the NCCP 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.

Conceptual Bikeways Plan

The Conceptual Bikeways Plan identifies bikeway opportunities within the community to facilitate the acquisition and development of new bikeways through development proposals, Public Works projects, and voluntary efforts. This plan was developed with 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 bicyclist concerns. Bicycle safety is jeopardized due to bike/auto and bike/pedestrian confrontation on the street, and the lack of space given over to bicycle movement. Conflicts between bicycles 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.

Bicycling has, for many years, 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 commute trips occur within the City due to the ratio of jobs to population. As is the case for many cities through the nation, the number of commute trips is expected to grow with the growth in population. It will likely remain insignificant within the City of Rancho Palos Verdes 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 due to the picturesque nature of the Peninsula and the views to be enjoyed while utilizing the various bikeways. Several of the bikeways can be categorized as semi-regional in nature since 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 recent adoption and implementation of the Vision Plan, PUMP and the Trails Plan, there is a need to update the Conceptual Bikeways Plan. The update must analyze and identify opportunities to provide connections and linkages from the bikeway network to the multi-use trails identified in the Vision Plan and the PUMP. While no attempt is made here to designate specific designs for the Conceptual Bikeways Plan update, it could be consolidated with the Conceptual Trails Plan to create a comprehensive Trails Network Plan. The following goals should be considered in the comprehensive Trails Network Plan.

- Create an efficient, safe, and enjoyable bikeway system that separates conflicting locomotion modes.

- Where possible, design on the street, bikeways to flow with traffic and be designated with painted indicators or signs, rather than curbs or other physical devices.
- Minimize or restrict parking on bikeways.
- Locate scenic and recreation routes sufficiently far away from bluff and canyon-hazard areas for safety.
- Design a system of standardized signs should be established throughout the Peninsula.
- Utilize complete street concepts to integrate the needs of all users of the roadway system, including cyclists.

Future Planning Efforts

As mentioned above, the Trails Network Plan (TNP) consists of a combination of a variety of individual documents. However, the Conceptual Trails Plan and the Conceptual Bikeway Plan portions of the City's current TNP 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 Forrestal Nature Preserve, the Palos Verdes Nature Preserve, the coastal zone and adjoining areas, but there has been no comprehensive, citywide update to the TNP. 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 by the end of 2015.

Infrastructure Systems

The existing infrastructure and infrastructure improvement plans meet~~s~~ the current needs of Rancho Palos Verdes. 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 regarding infrastructure function. All infrastructure networks, to some degree, 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 demands on the infrastructure system continue to grow and change over time. Communications infrastructure did not include mobile phone networks 20 years ago or wide band 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 technologic advancements as well as that associated with build-out and increased population. The infrastructure system is constantly being maintained, modified, repaired, upgraded, and/or extended by the appropriate provider to meet demand. The ultimate build-out and increased population will not create a significant adverse impact on the infrastructure system since the population increase resulting from build-out will not be substantial. Further, requirements on developments to include best management practices, and water and energy efficient components work to maintain and enhance the infrastructure system.

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.

Resource Systems

Water

One of the most vital components in the infrastructure is the water distribution system. 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 (Cal Water). Operating within the regulation and standards of the State Utilities Commission, the sole function of 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. 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. 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.

The Palos Verdes water system distributes water through two distinct water distribution systems. These systems are commonly referred to as the "D-500" and the "Ridge" systems. 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 the 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 northeast 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 Pipeline 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 Pipeline Project were already 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 2016.

Additionally, Cal Water released a draft Conservation Master Plan to expand existing conservation programs and develop new programs in the Palos Verdes District over the next five years, to comply with the recently adopted state policy (Senate Bill No. 7) that requires a statewide 20% reduction in per capital urban water use by 2020. In the past five years, per capita demand in the Palos Verdes district averaged 284 gallons per day, exceeding the statewide average by 48%. This demand is projected to increase by 0.4% by 2015 and 0.8% by 2020. Conservation will not only aid in meeting increased demands, 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. More specifically, the purpose and intent of the Ordinance is to:

- 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 fifty percent in total area;
- Promote water management practices and water waste prevention for existing landscapes; and
- 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 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) 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 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.

The natural gas distribution system consists of resource facilities and networks. Resource facilities include natural gas processing and transmission facilities that are located outside the Palos Verdes Peninsula area. Natural gas networks, on the other hand, consist of the physical infrastructure in place within the City that is used to deliver natural gas to the residents of the City; in many cases the natural gas network-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 all gas lines are potentially dangerous if broken or severely damaged. Thus, the distribution network in the Portuguese Bend slide area is of critical concern. However, most lines are above ground to facilitate constant inspection and periodic maintenance. Otherwise, no areas of significant deficiencies were found within the city.

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 Rancho Palos Verdes customers appear to be satisfactory meeting the present demand. Further expansion of the natural gas infrastructure will be wholly determined by future growth patterns; however, future growth would come from build-out of the remaining 439 vacant developable parcels (436 of which are single-family residential) in the City. Since the infrastructure is in place, build-out 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 SCG 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 the colder times to retain heat, and turning off unnecessary lights.

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.

Electric. 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, two of which are located within the City of Rancho Palos Verdes. The power distribution network consists of major source lines 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. The only problem area associated with the electrical component of the urban infrastructure exists in the Portuguese Bend slide area since they may be susceptible to damage from earth movements. Otherwise, no 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. Limitations do exist in respect to undergrounding utility lines; however, the distribution lines can and are being undergrounded.

Southern California Edison (SCE) is the nation's largest purchaser of renewable energy from wind, solar, biomass, geothermal and small hydrogen suppliers, which makes up approximately 16% of the power delivered to its customers. Southern California Edison has begun construction of the nation's largest wind transmission project. When completed, this project will be capable of delivering additional electricity from wind farms and other generating companies. Currently, SCE has sufficient contracts in place that, when delivered, will meet 20% or more of its customers' energy need with renewable energy. In addition, SCE is investing in grid technologies to enable the delivery of more renewable energy into the electricity supply, provide customers more power to control their energy use and costs, and 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 even more energy and prevent depletion of a valuable resource.

Although SCE is able to meet the current energy needs of the City, 465 new housing units are projected based on a built-out scenario, after development of the remaining vacant land in the City (Traffic Impact Analysis – Willdan Engineering, 2010). According to SCE, the existing energy system will be able to support the additional housing units, if the annual growth rate remains similar to the previous years. This is because SCE is continuously upgrading and researching methods to preserve and provide more energy to meet future needs of the City.

Disposal and Recovery Systems

Sanitation

The sanitation component of the infrastructure is divided into two basic groups. These are sewer systems and the solid waste 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.

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 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 Rancho Palos Verdes for the maintenance and repair of the sewer system. With the exception of Abalone Cove, since incorporation the County has maintained the sewer system located in the City. In regards to the Abalone Cove area, the maintenance and repair responsibilities are borne by the City of Rancho Palos Verdes. Maintenance and repair activities that the Los Angeles County Department of Public Works, Consolidated Sewer Maintenance District (LACSMD) perform, 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 Los Angeles County Department of Public Works is responsible for the continuing operations of sewer collection system and to identify and correct pipeline capacity related problems found within 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 of Rancho Palos Verdes. Since the City is responsible for all aspects of operating and maintaining this system, the City collects a fee from property owners through the Abalone Cove Sewer Fee.

The Abalone Cove sewer system consists of 44 grinder pumps, with 14 of them serving one parcel and 3 duplex grinder pumps serving two or more residences. The three duplex grinder pumps are located on Abalone Cove Shoreline Park, off of West Pomegranate Drive, and off of Vanderlip Road. The system was installed in 2001 to replace septic systems in landslide areas. There are 130 manholes, 1 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 pipe is generally accepted as 50 years. This leaves the remaining design service life for most of the system at less than 10 years. As a result there will most likely be an increasing trend in pipe structural failures with time.

Sewer System Master Plan: The City prepared a Sewer System Master Plan in 2003 that includes 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. It was determined that the full operational costs associated with the system should 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.

Solid Waste

The collection of refuse in Rancho Palos Verdes is a service which is carried out by two 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. This component of the infrastructure is unlike others, in that the companies charged with the collection of solid wastes acts only as the medium, 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. 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 future population increase in Rancho Palos Verdes should pose no problems in relation to the collecting of refuse.

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.

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. The document identifies deficiencies in the City's storm drainage system and recommends various improvements and corrections to the system. Another update to the Master Plan of Drainage is expected to be completed in 2015. The Update acknowledges and takes ~~took~~ into account the modifications and/or additions to the storm drain system that occurred after the 2004 Master Plan, which included implementing recommendations of the 2004 Master Plan and various private developments that took place.

The impacts of existing and future flood control networks are basically related to pollution and erosion at flood control/natural system interfaces in addition to visual quality. 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 creating 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.

The flood control/storm drain system is not a continuous system of networks which have a common origin, but rather it is a system comprised of an intermittent series of individual networks. Most of the drainage facilities were constructed by the Los Angeles County Department of Public Works prior to incorporation of the City. There are still a number of facilities owned and maintained by the LACDPW. In 1998, a comprehensive Master Plan of Drainage was completed by the City, and in 2004 an Update to the Storm Drain Master Plan was prepared. The Plan identified serious storm drain deficiencies that required significant repair. The update identified a total of 38 high-priority projects, which was the basis for establishing a "user fee" that was approved by the voters in 2007. Most of the higher priority projects are located in the Los Angeles Drainage Area. As mentioned previously, another update to the Master Plan of Drainage is expected to be complete in late 2015.

Some priority projects identified in the 2004 Master Plan of Drainage have been completed, such as the McCarrell Canyon Storm Drain system, which was completed in 2009. Due to the inadequate size of the storm drain, the inlet would become overwhelmed in moderate rain conditions, resulting in water forced to cross Palos Verdes Drive South. Further, the outlet was an open drain that cascaded over the bluff down to the ocean. The McCarrell Canyon storm drain project was completed for safety and to protect property, and as a new "backbone" drainage system for McCarrell and Barkentine Canyons. The outlet was also modified to include a large diameter slant drain to the beach and pipelines connecting the existing pipes to the new system.

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

Communication Systems

The communication 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 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 are a crucial tool to transmit and receive emergency messages.

The following communication 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. The telephone is the most accessible and widely used communication system available to the general public. The City of Rancho Palos Verdes is served by Verizon and AT&T for their landlines. However, individuals can contract their cell phones and laptops with any company of their choice and are not limited to Verizon and AT&T. Wireless companies are always improving the wireless communication in the City through the construction of cell towers. Both Verizon and AT&T 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.

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 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. The fiscal impact of conventional telephone communication (maintenance, installation, and service costs) is absorbed by the customer, and rate increases will be subject to the Public Utilities Commission.

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.

Broadcast Communications. Broadcast communications are those systems which have no wires or transmission lines, 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, information, and entertainment. No 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. 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 can be mitigated through the use of landscaping techniques.

Policies

Transportation Systems Policies

It is the policy of the City to:

1. Balance traffic impacts to residential neighborhoods with efficient traffic flow and public safety by implementing appropriate traffic-calming measures.

2. Require any new developments or redevelopment to provide streets wide enough to support the City's future traffic needs and to address potential impacts to nearby intersections resulting from such developments.

3 Encourage synchronization and coordination of traffic signals along arterials.

4. Future residential developments shall provide direct access to roadways other than arterials.

5. Work with other Peninsula cities and/or regional agencies to improve public transportation on the Peninsula and to provide access to other destinations in the region.

6. Implement the Trail Network Plan to meet the recreational needs of the community, while maintaining the unique character of the Peninsula.

7. Coordinate and cooperate with neighboring jurisdictions to develop trail networks.

8. Prohibit motorized vehicles from using paths and trails, except for disabled access, emergency or maintenance vehicles.

9. Require that all new developments, where appropriate, establish paths and trails.

10. Seek funding for acquisition, development and maintenance of trails.

11. 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.

12. Include safety measures such as the separation of uses, fences, signage, etc., in the design and construction of paths and trails.

13. Encourage the safe and courteous use of trails by educating users as appropriate.

14. Provide appropriate public access to the Rancho Palos Verdes shoreline.

15. Explore options to develop a City equestrian park.

16. Require adequate off-street parking for all existing and future development.

17. Develop appropriate ordinances to regulate street parking, parking on narrow residential streets, and parking of recreational, commercial and/or oversized vehicles.

18. Coordinate and cooperate with school districts, and parent and community groups to provide safe and proximate access to schools.

19. 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 collector or arterial road (b) Provisions are made to guarantee the future up-keep of the streets, (c) Dedication of non-vehicular easements may be required.

20. 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, which meet 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.

21. If City land is sold, any appropriate public access easement, restriction, reservation and/or right of way should be recorded.

22. Descriptions of relevant trails in the Trails Network Plan should be provided to potential applicants when inquiries for development are first made.

23. Design and construct new trails in accordance with the Trails Network Plan and other National, State and local standards, where appropriate.

24. When constructing paths and trails, require the use of construction techniques that minimize the impact on the environment.

25. Where appropriate, align trails to maximize access to scenic resources.

26. 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.

27. 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.

Infrastructure Systems Policies

It is the policy of the City to:

28. Discourage the installation or extension of any infrastructure 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.

29. Allow new development only where adequate infrastructure systems can reasonably be provided.

30. 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.

Resource System Policies

It is the policy of the City to:

31. Ensure that the resource companies provide~~s~~ all areas of the City with adequate service including adequate back-up and growth capabilities.

32. Encourage the use of alternative water and energy generation sources.

33. Promote, practice and encourage workable energy and water conservation techniques.

34. Review any proposed development, major new resource uses, or significant changes to resource system for impacts to the surrounding neighborhood and community.

35. 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.

36. Encourage the California Water Service Company to complete a Conservation Plan that provides for the availability of a recycled water system in the City.

37. Underground all new power lines and communications cables. Implement programs to place existing lines and cables underground where feasible.

38. Encourage the establishment of undergrounding assessment districts by homeowners, in areas of existing overhead lines.

39. Investigate funding sources to be used in local undergrounding programs for areas of existing overhead lines.

Disposal/Recovery System Policies

It is the policy of the City to:

40. Encourage waste reduction and recycling programs.

41. Require all new developments to provide sanitary sewers connected to the County Sanitation District's system.

42. Require the connection to the Los Angeles County Sanitation District's sewers in in existing development if alternative sewerage systems endanger public health, safety and welfare.

Flood Control/Storm Drain Systems Policies

It is the policy of the City to:

43. Encourage the retention of all remaining natural watercourses in their natural state.

44. 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.

45. Require that all flood control/natural water source interfaces and systems minimize erosion.

46. Promote compliance with regulations controlling pollution impacts generated by development runoff.

47. Promote compliance with regulations controlling discharge of wastewater into the ocean.

Communication Systems Policies

It is the policy of the City to:

48. Investigate alternative cable communications systems that take advantage of new technology, which could disseminate information and issues to communities and/or the City as a whole.

49. Require the underground installation of cable communications.

50. 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.

The City's location on the Palos Verdes Peninsula affords views that are one of the most valuable natural resources on the Peninsula. Views of the ocean, off-shore islands, distant mountains, and city 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, ridges, and bluffs themselves 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. The purpose of this Element is to provide continued guidance through the establishment of goals and policies to ensure the continued preservation, restoration, and enhancement of significant visual resources within the City.

To set the context for preserving, restoring and enhancing the visual resources within the City, the following goal has been established:

Goal

1. 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 shall be the goal 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 Visual Resources Element begins by introducing the reader to the three main types of Visual Resources within the City – 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 the Visual Resources are viewed utilizing Viewing Stations, which include Viewing Sites, Viewing Points and Visual Corridors. The following section of the Element focuses on areas within the City to have views Preserved or Restored including Undeveloped Areas that upon their development may have an affect upon existing Visual Resources. The Element then concludes with a discussion of the various Implementation Tools, including Visual Resources Policies that the City has used and will continue to use to preserve, restore and enhance Visual Resources.

The associated Visual Resources, Viewing Stations, and areas to be preserved, restored or enhanced are denoted on the accompanying map which provides the reader a graphic understanding of the descriptions provided within the text of the Element.

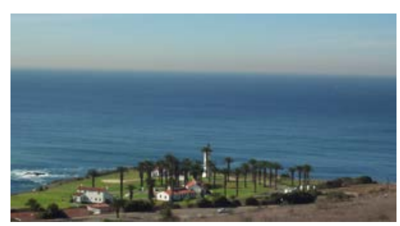
Types of Visual Resources

Visual Resources (See Figure 14) are divided into three categories: Views, 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.

Views

A view is a scene or panorama observed from a given vantage point. Views represent a panoramic visual aspect which extends to the horizon of a distant focal point (Catalina Island, rather than a 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).

Vistas



A vista is a confined view, which is usually directed toward a dominant element or landmark. A vista, unlike a view, may be created by features that visually frame the vista. Each vista has, in simplest terms, a viewing station, an object or objects to be seen and intermediate features that frame the vista. 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.

Urban Design

Urban design is different from the above resources as this visual resource 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 insuring that the development of each parcel of land or additions to existing structures not only occurs in a manner which is harmonious with the land, but also maintains an architectural aesthetic and character representative of neighborhoods 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 the visual accent to neighborhood aesthetics and character

Visual Resources of Rancho Palos Verdes

The following are visual resources (See Figure 14) within and surrounding the City of Rancho Palos Verdes. They are described in three general categories: natural, man-made and urban design

Natural Visual Resources

Natural visual resources include the following:

<u>Natural Areas:</u> Natural features that provide viewers with a feeling for the rural atmosphere in the City. The best examples are the Portuguese Bend Preserve, major canyon systems, and open spaces adjacent to view corridors.

<u>Shoreline:</u> The irregular shoreline configuration is a prominent feature along the Palos Verdes Peninsula, including Portuguese Point, Inspiration Point and Point Vicente. Distant shorelines can also be enjoyed from multiple locations throughout the Peninsula which are visually accessible to the public.

<u>Sea Cliff:</u> The Palos Verdes Peninsula shoreline is characterized by vertical cliffs forming rocky, narrow beaches and coves. Sea cliffs are observed from open land 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.

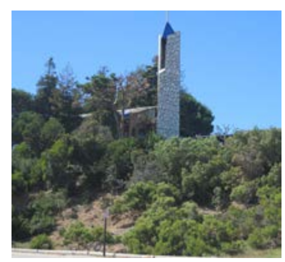
Major Canyons: These represent the location of additional vegetation, shadows, and other visual focal elements in the dominant topography of Rancho Palos Verdes.

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.

Significant Tree Groupings (mass, linear): Because of the random presence of 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. 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 which can obstruct vision of the night sky. As a result, Rancho Palos Verdes 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.

Man-made Visual Resources



Man-made 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 city lights at night.

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 a process of 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 established review guidelines for new construction to enhance Urban Design during the development review process. Such design standards and guidelines are used to review new residential developments and are further discussed in the Implementation Tools section of this Element. 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 Residential Tract, Portuguese Bend, Terranea Casitas, and the Trump National Residential Tracts. Additionally, within some neighborhoods are public and private landscaping design characteristics worth noting: ecologically-based streetscapes of Oceanfront Estates tract, the mature trees of Miraleste, non view-obstructing vegetation in the Seabreeze residential tract and the semi-rural streetscapes of the Portuguese Bend neighborhood.

Viewing Stations

Viewing Stations (See Figure 15) are places where people can enjoy the visual resources of Rancho Palos Verdes. They include both public and private spaces. The viewing stations are described in three categories: Viewing Points, Viewing Sites, and View Corridors.

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 have been made since the founding of the City, which includes turnouts at the Terranea Resort, Abalone Cove, along Hawthorne Boulevard and Trump National Golf Club.

Viewing Sites

Viewing Sites are larger areas which, due to their physical locations on the Peninsula, provide a significant viewing vantage. Since the City's incorporation, several viewing sites have been established, which include Del Cerro Park, Hesse Park, Lower and Upper Point Vicente, Oceanfront Estates public trails, Trump National's public trails, Founder's Park, and Terranea's public trails.

View Corridors

View Corridors are major circulation roads, 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.

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 vista 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.

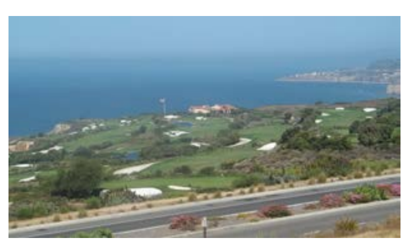
Path and Trail Corridors: Major paths and trails in the City primarily run along borders of significant natural features (ridge route-coastal bluff). Therefore, visual impacts from existing/proposed developments along these routes occur mainly on one side, with some occurrences on both sides. This condition, whereby development exists or is proposed on one side or both sides of paths 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 trails entering intruding into areas with large open vistas.

Preservation and Enhancement of Visual Resources

Natural Areas to be Preserved

Most large areas of natural land are protected from development by the Coastal Specific Plan and the City's habitat preserve areas but some areas of natural land, especially City right-of-way areas along Palos Verdes Drive East are vulnerable to alteration due to view clearance, roadway improvements, and/or trail enhancements (See Figure 16).

Developed Areas to be Preserved



Developed areas of particular visual interest are mainly located along Palos Verdes Drive South. From this corridor, the 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.

Developed Areas to be Restored

Since the adoption of the initial General Plan in 1975, certain corridors, i.e. Crest Road between Hawthorne Boulevard and Crenshaw Boulevard, have been restored to enhance and preserve the views and vistas. Roadway and median improvements along Palos Verdes Drive South and West have also been completed. However, due to past land grading and County 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. The 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 while Hawthorne Boulevard needs continued preservation of views and vistas.

Visual Corridors to be Preserved

The concern over these areas is how a proposed development will visually impact a corridor. 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 on Crest Road and Palos Verdes Drive South/West have been developed as residential tracts that have been designed to protect the views and vistas. There is a continuing need to manage the foliage bordering the Visual Corridors to keep it from obstructing views. Smaller, contiguous and non-contiguous underdeveloped parcels of land still exist throughout the City and should be designed to consider impacts to visual resources.

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 all forms of unwanted light caused by the use of artificial light. Excessive light can be visually disruptive to humans and nocturnal animal species 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 stadium lighting. Projects should be designed to mitigate light pollution.

Implementation Tools

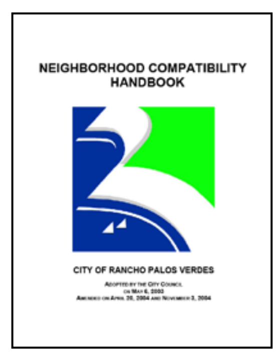
Since City incorporation, the City Council has adopted various documents to assist the public in proposing and reviewing developments in accordance to the General Plan and Municipal Code. This section describes the different ordinances, documents and methods in which the City manages and preserves views, vistas and urban design within the City. The following are implementation tools that work towards achieving the preservation and enhancement of the different visual resources. All of these documents are available for viewing at the City's Community Development Department.

View Restoration and Preservation Ordinance and Guidelines

In November 1989 the voters of the City of Rancho Palos Verdes passed an initiative to protect views by establishing height limits 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 for view impairment caused by foliage. These guidelines are known as the Height Variation Guidelines and the View Restoration and Preservation Guidelines and Procedures, respectively.

To be consistent with the intent to protect views and vistas from residential properties, the City Council also adopted a policy to protect views impaired by foliage located on City-owned property. View restoration requests involving City-owned trees are processed by the City through the issuance of a City Tree Review Permit application pursuant to the City's Municipal Code.

Guidelines and Procedures for Neighborhood Compatibility

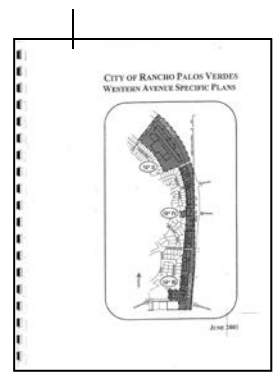


The City of Rancho Palos Verdes' General Plan contains policies on many aspects of residential development including neighborhood compatibility. Neighborhood compatibility is an urban design concept that attempts to balance new residential development with the preservation of the rural and semi-rural character of the City. To this end, in 2003, the City adopted recommended 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 suggested neighborhood compatibility guidelines are meant to assist residents and developers in the preparation and design of residential development projects by review of a project's scale, architecture and setbacks within the context of the immediate, surrounding neighborhood.

Coastal Specific Plan

A Coastal Specific Plan was prepared in 1978 to further study and assess resources along the Rancho Palos Verdes coastline. One of the goals of the Coastal Specific Plan was 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 defined 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 public and private development conforms to the principles set forth in the General Plan.

Western Avenue Specific Plans



The intent and purpose of the Western Avenue Specific Plans were 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 were prepared to protect adjacent residential property from the impacts of commercial development and to encourage the revitalization of the area. The plans identify themes that both create a Rancho Palos Verdes identity and distinguish the area from neighboring Los Angeles. The plans integrate the unique aspects of the Eastview area into the overall character of Rancho Palos Verdes, assist in preserving views, and improve the urban design for this area.

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, taking into account the issues of traffic safety.

3. Preserve and enhance existing positive visual elements, while restoring those that have been lost.

4. Consider the visual character of neighborhoods consistent with the General Plan and Neighborhood Compatibility Guidelines.

5. Develop and post vista points to provide safe off-road areas where views may be enjoyed.

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 which will impact corridor-related views to mitigate their impact.

9. Develop a program for the restoration of existing areas which negatively impact view corridors.

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. Work with adjoining jurisdictions to preserve and restore the view corridors from major thoroughfares, taking into account the issues of traffic safety.

The residents of the Peninsula have historically dealt with the various natural and man-induced hazards affecting the area; including earthquakes, land movements, wildfires and tsunamis. The increased population on the Peninsula over the years means more people are exposed to these risks and has created 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 in 2014. Hazard mitigation is defined by 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 earthquake, wildfire, earth movement (landslide & debris flow), and tsunami.

Similar to the Joint Hazards Mitigation Plan (2014), the Safety 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. 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.

Goals

To set the context for this element, the goals are as follows:

1. Provide for the protection of life and property from both natural and man-made hazards within the community.

2. Provide 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. Develop 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. Protect life and property and reduce adverse economic, environmental, and social impacts resulting from any geologic activity.

Wildfire Hazard

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 significant damage to structures, valuable watershed and increased risk of mud flows. 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
- Urban Fire
- Other Factors Leading to Fires
- Fire Hazard Zone

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 played significant roles in shaping the terrestrial ecology and wildfire hazards potential. Two geographical factors important in this discussion include (1) the makeup of the local soils and (2) the topography of the Peninsula. The soils 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 communities.

Development in some localities has extended into canyon areas and in some cases has reduced the fire hazard by removing the vegetation. However, 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 California Department of Forestry and Fire Protection between the years 1923 and 2003 identify the twenty largest California wildland fires that were 100 acres or larger in area. In the past 20 years, there were two fire incidents greater than 100 acres within the City of Rancho Palos Verdes. In 2005, the "San Clemente Fire" burned 179 acres and moved up toward the City of Rolling Hills and Portuguese Bend, advancing up Del Cerro Canyon near Del Cerro Park. In 2009, the "Palos Verdes Fire" burned approximately 209 acres, of which 181 acres was City owned land in the Portuguese Bend area designated as a Nature Preserve.

Between 1989 and 2008, there were a total of 61 fire incidents ranging from a small structural fire within a residential condo up to 70 acres in size (brush fire) within the Peninsula. Approximately 24% of these fire incidents were structural while the remaining were brush fires. Natural fires on the Peninsula are very rare. Of all the fires recorded on the Peninsula in the last 40 years, only 1 was caused by natural events such as lighting. 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.

Interface Fire

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. Rancho Palos Verdes is a hillside community containing a variety of land uses ranging from high density apartments and condominium developments to very low density hillside units. The increased "interface" between urban/suburban areas and the open spaces caused by expansion has produced significant increase in threats to life and property from fires, pushing existing fire protection systems beyond original or current 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, 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. Ninety percent of the local fires in Palos Verdes 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.

Urban Fire

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 for structural fire. Additionally, cinders from wood-burning fireplaces that remain alive and travel considerable distances have also been blamed for fire-starts near residential locations.

Buildings with open stairwells, substandard electrical wiring, improper storage or faulty heating systems are considered to be hazardous. Upon ignition, the fire spreads rapidly through the building. A common example of a fire hazardous building is older, multi-story structures. However, there are no major clusters of this 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 type 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).

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.

Secondary Effects: A result of both wild fires and urban fires (adjacent to canyons) is the partial or total depletion of vegetation, which may result in potential erosion and/or 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 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 travel down slope just above the impervious layer, carrying away the weakened material as a debris flow (California Geologic Survey Note 33, 2007).

Other Factors Leading to Fires

Human Proximity: Human proximity also tends to increase the activity of off-road vehicles, such as motorcycles in nearby open areas. This activity is becoming an ever-increasing source of brush-fires, as the trend accelerates toward such recreational pursuits.

Vegetation: The density and distribution of vegetation can define the overall hazard of fire and its intensity in a particular area. 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: 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: 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 outbreaks tend to accompany the "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: Recent concerns about the 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 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 degree of slope in a fire burn area can determine the type of heavy equipment and strategy method that can be used.

Topography: Topography influences the movement in 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. Gulches and canyons can funnel 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 Hazard Zone

In 2008, the Department of Forestry and Fire Protection (CAL FIRE), together with input from the local Los Angeles County Fire Stations updated the City's Fire Hazard Severity Zone Map (Figure 17 - FHSZ) indicating that the entire City, excluding portions of the City located east of Western Avenue (approximately 98 acres involving 322 single-family and 123 multi-family units) is classified as Very High Fire Hazard Severity Zone (VHFHSZ).

Pursuant to the State Government Code, properties located within VHFHSZ must maintain certain defensible space through specific fuel modification (brush clearing) requirements. These fuel modification requirements are enforced wholly by Los Angeles County Fire Department. Furthermore, property owners located within a VHFHSZ must disclose that their property is located within a VHFHSZ at the time of sale. These requirements have been in place, since the original State Government Code dealing with VHFHSZ's was adopted in 1995.

Flood Hazard

In general, three 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 inadequacies in local storm drain facilities. Dam 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 geologic phenomena including 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, 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 property occupants. For areas with denuded vegetation as a result of a fire, it can take about four to five years for vegetation to significantly recover, about ten years to fully recover.

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. 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 Federal Emergency Management Agency (FEMA) identifies the Lunada and Agua Amarga canyons; Portuguese Bend and Forrestal nature preserves; and other public and private properties as flood zone category D (See Figure 18 – Potential Flood & Inundation Maps). Flood zones are geographic areas that the 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.

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, there are few vacant residential lots 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.

Water Storage Facility Failure

Palos Verdes Reservoir is the largest water impoundment owned by the Metropolitan Water District on the Peninsula, located near Palos Verdes Drive 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 determined.

There are twelve other water impoundments 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). 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.

Each of the water storage facilities may be subject to severe ground shaking, given a major seismic event on the San Andreas, Newport-Inglewood or Palos Verdes faults. The ability of the water storage facilities to withstand the anticipated ground shaking is not correctly known. Other hazardous geologic phenomena, particularly landslides are most likely to be the cause of the structural failures of water impoundments. 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 a water storage facility failure will not be great, with the possible exception of Palos Verdes Reservoir. However, other results indirectly related to a water storage shortage failure 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. Acknowledging this potential, the California Water Service Company has an emergency contingency plan which 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 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.

Geologic Hazard

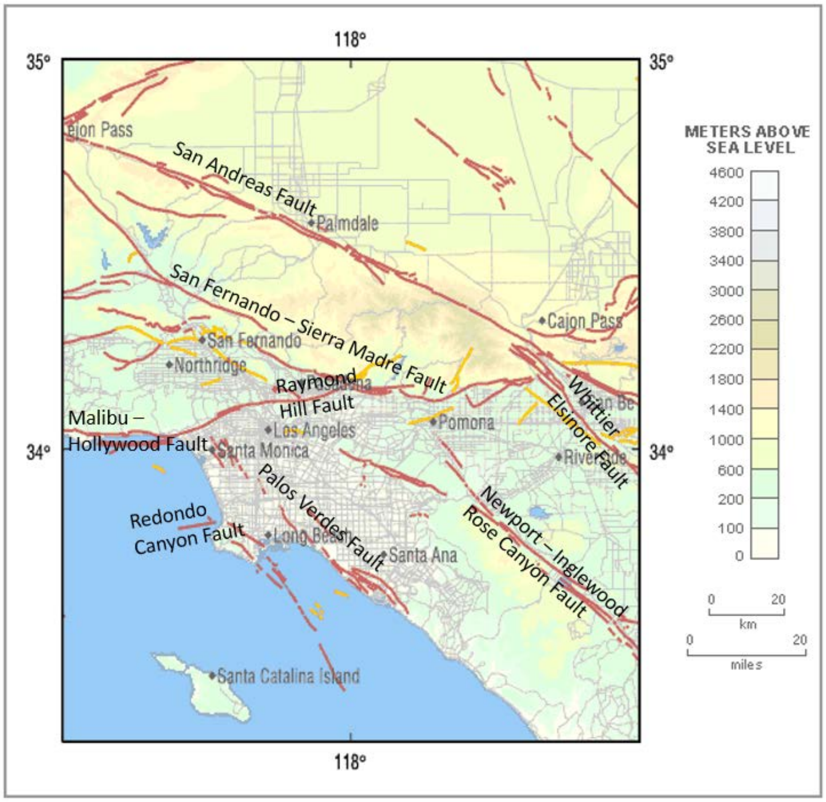
The Palos Verdes Peninsula is composed of a sequence of sedimentary and metamorphic rock which has been folded and uplifted along the Palos Verdes fault on the north and an unnamed fault in the offshore area to the south. (See Conservation & Open Space Element for geologic profile of Palos Verdes Peninsula.) 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. Five geologic formations are present on the Peninsula including the Catalina Schist, Monterey Formation, San Pedro Formation, intrusive volcanic rocks, and marine terrace deposits. 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 terrace 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.

Seismic Hazard

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 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 trends northwest-southeast and marks the eastern termination of the Palos Verdes Hills. The potentially active Cabrillo fault also trends northwest-southeast and extends from Cabrillo Beach to near the center of the Peninsula. The 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 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 for 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 damage to lifeline and infrastructure in 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 12. 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. 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 occurrence (currently "overdue" for an occurrence). 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 on the table. However, maximum magnitude and recurrence interval is generally poorly understood.

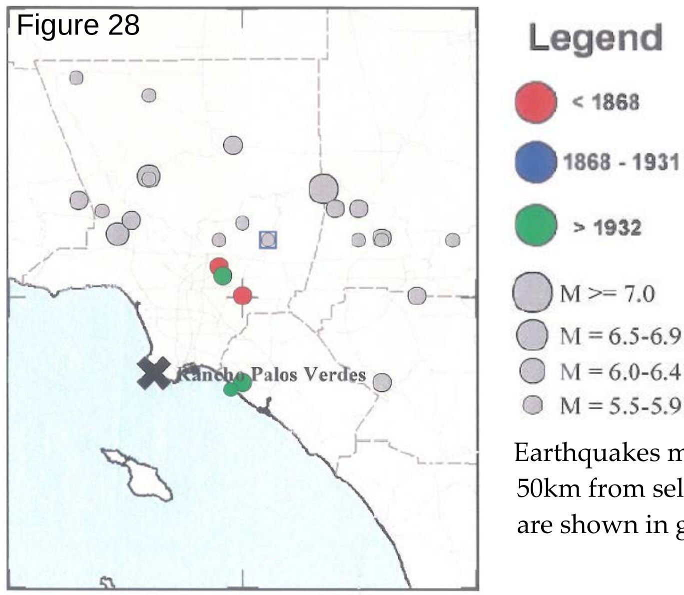
TABLE 12 Fault	Approximate Distance from Study Area (Miles)	Estimated Maximum Earthquake Event		
		Maximum Earthquake Event Magnitude (Mw)	Peak Site Acceleration (g)	Estimated Site Intensity Modified Mercalli Scale
Palos Verdes	1-4	7.3	0.691	XI
Newport-Inglewood	10	7.1	0.337	IX
Puente Hills Blind Thrust	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

The following is an abbreviated version of the 12 levels of Modified Mercalli intensity.

- **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 Palos Verdes Peninsula will be significantly less then the effects of the Newport-Inglewood, Palos Verdes or San Andres faults. 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 Palos Verdes Peninsula.

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. There are no significant trends of earthquake epicenters or groundwater conditions indicating a buried active fault within the City. Figure 28 below presents a plot of all recorded earthquake epicenters in the area from 1932 through 2008.



Earthquakes more than 50km from selected location are shown in gray.

Active and Potentially Active Faults

As described above, below is a discussion of the following known faults and its impact 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 is within a mile of the Palos Verdes Peninsula and poses the most significant earthquake hazard to the City due to its proximity. 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).

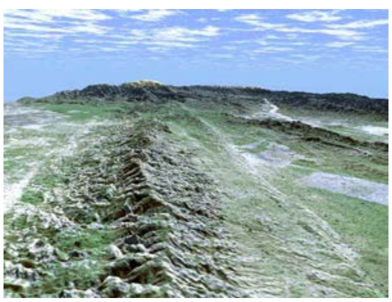
The earthquakes that have had a significant effect on the Palos Verdes Peninsula, in historic times, have originated principally as the result of movement on segments of the nearby Newport-Inglewood fault zone. The most notable are the Long Beach earthquake (March 10, 1933, with a magnitude of 6.4), 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 1932 to 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.

Puente Hills Blind Thrust: The Puente Hills Blind Thrust fault is greater 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 greater 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 transform 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 (Peterson, 2003).

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 (Mercalli Scale) for the 1906 earthquake (Lawson, 1908).

Cabrillo Fault: 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).

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. Landsliding is an important agent in this cycle. Several types of landslides commonly encountered (USGS, 2004) are described below.

Translational or Block Slides: These slides are the largest, most impressive type of landslide. 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 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.

Rotational Slide: Rotational 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, 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 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 10's to 100's 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.

Debris flows: 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.

Landsliding is basically controlled by four factors: the rock type, 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 add to the weight of the unstable mass, lower the co-efficient of friction and increase pore pressure all of which contributes 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%.

Landsliding in the City can be grouped into two major landslide systems that represent complex groups of smaller coalescing landslides: the Portuguese Bend and the South Shores. Smaller, isolated landslides are scattered over the City, outside the two major systems (Figure 19 – Landslide Inventory, Source: CGS Landslide Inventory Map of the Palos Verdes Peninsula, 2007).

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). This area includes the Abalone Cove and the Portuguese Bend Landslide.

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.

No historic movement has been recorded within the main mass of the South Shores landslide system. 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 Graben, located northwest of the Valley View Graben and partially within Rolling Hills Estates and partially within Rancho Palos Verdes, was postulated by Envicom (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.

Liquefaction

Liquefaction occurs when earthquake waves cause water pressure to 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 liquefying occurs below a competent layer, translation, rotation, or liquefaction may occur.

The potential for liquefaction in Rancho 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 affects of liquefaction were noted in the San Pedro area following the 1933 Long Beach earthquake (CDMG, 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 (CDMG, 1998).

Tsunamis

Tsunamis are sea waves generated by earthquake, landsliding, or volcanic eruption. 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 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 or landsliding.

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).

Recent studies have indicated the potential for large scale landsliding and slumping off the Palos Verdes Peninsula coast capable of producing tsunamis. Modeling indicates that tsunamis on the order 3 to 6 meters high with velocities of up 10 meters per second could occur. Due to the height of the bluffs in the Rancho Palos Verdes city boundaries, the impact from these potential tsunamis would be limited (April 2005, Volume 75 Number 4 Civil Engineering Magazine).

Seiches

Seiches are long period water-level oscillations within closed or open bodies of water, such as a lake or harbor basins that can be created by seismic waves or landsliding. Seiches are not considered a significant hazard in Rancho Palos Verdes.

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. 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 cities; however, does not pose a hazard to Rancho Palos Verdes.

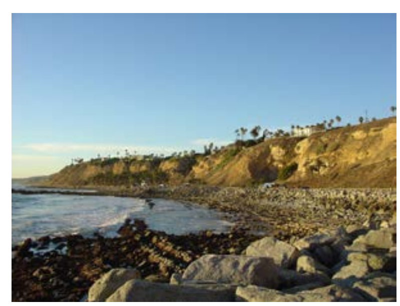
Expansive Soils

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.

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.

Other Hazards

Hazard Peculiar to RPV and Environs

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. This attraction causes visitors and residents alike to wander too close to the point of danger and fall, causing injury and, in some cases, death. 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 is "blazing" a trail of his own instead of using an established access point. To prevent injuries or deaths, the City recommends that visitors use designated trails, avoid bluffs during dark hours and wear appropriate shoes. In many areas, the City posts signage to warn visitors of the dangers near a cliff edge.

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 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 problems currently exist, occasionally isolated cases are reported. These cases most generally require preventative measures rather than specific health or medical measures.

Emergency Services

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.

Emergency Medical Aid and Rescue

The City of Rancho Palos Verdes subcontracts ambulance service with a private company regulated by the Los Angeles County Fire Department. The subcontractor for ambulance service on the Palos Verdes Peninsula is McCormick. The McCormick ambulance vehicles are based in three separate Fire Stations (Station Nos. 53, 83 & 106) and a McCormick 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.

Healthcare

The Palos Verdes Peninsula has the following acute care ("short term") hospitals in Torrance and San Pedro, located approximately 15 minutes away.

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.

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 Los Angeles County Department of Health Services.

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. 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.

Flood Control

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.

Police Protection

The City is part of a joint-contract with Los Angeles County for police protection. The Lomita Station opened in 1975 and provides police protection to the Peninsula Region, which is identified as the City of Rancho Palos Verdes, Rolling Hills Estates and Rolling Hills. On an average, the following number of patrol cars protects the City of Rancho Palos Verdes during specific times of the day:

Time	Number of Patrol Cars
Early Morning Shift	2
Day Shift	4
Night Shift	4

The Sheriff's Office has three response categories: Emergency, Priority, and Routine for each City within the Peninsula Region. The table below provides annual response time for the City of Rancho Palos Verdes compared to the Sherriff's Department's targeted response time. [Source: Los Angeles County Sherriff's Department (Peninsula Region Quarterly Activity Summaries - 2014].

Response Time \ Areas	Rancho Palos Verdes	LASD Target
Emergency (min.)	6.1	7
Priority (min.)	11.2	20
Routine (min.)	32.2	60

During emergency situations, back-up assistance can be provided by utilizing additional Sheriff 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 Rancho Palos Verdes Neighborhood Watch which provides additional crime prevention and emergency preparedness resources for local homeowners participating in the program.

Fire Protection

Currently, the County of Los Angeles provides fire protection to the City of Rancho Palos Verdes through the operation of the following 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 within 20 minutes. Based in Pacoima, 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.

Los Angeles County has designated the helicopter pads at the Nike Site (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 effectively prevent the possibility of fire. The City's Building & Safety Division enforces the proper safety measures under the regulations and codes of the California Building Code.

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 2015 ~~2006~~ 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.

Disaster Preparedness and Response

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 by 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 of Rancho Palos Verdes has an Emergency Operations Plan (EOP). The EOP is based on Incident Command System (ICS) principles and concepts within the Standardized Emergency Management System (SEMS). The SEMS and the NIMS (National Incident Management System) are compatible approaches, and the City of Rancho Palos Verdes recognizes these policies and utilizes the SEMS/NIMS as a basis for the ICS 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 (UC) and Area Command (AC), 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 EOP identifies many of the preparedness efforts that the City of Rancho Palos Verdes 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 disaster routes (See figure 21 – Disaster Routes).

The EOP also details response activities the City of Rancho Palos Verdes 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 (EOC), declarations of disaster, search and rescue, and other similar operations addressed in the updated EOP.

Emergency Communications

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 (ECC) was constructed at the City Hall complex to backup the City's normal emergency communication systems. When activated due to the loss of the normal communication methods, the ECC provides emergency communications by utilizing Amateur Radio Operators.

The Amateur Radio operators that would staff the ECC 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 and Regulations as part of the amateur radio service. RACES support 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 (PVAN) with the goal of providing emergency communications at the neighborhood level. PVAN operators communicate to and from the City through the ECC. When completely staffed, there will be a PVAN operator in each neighborhood supporting members of the Community Emergency Response Team (CERT) and Neighborhood Watch Block Captains.

Other Safety Services

Animal Control

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.
- 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 Sherriff'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 of Rancho Palos Verdes has a Memorandum of Understanding with the Area G Veterinary

Disaster Team (VDT), 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 VDT also assists in supplying lost and found animal information services to the public.

Air Pollution Control

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.

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.

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 to safety are the building codes. The City's Building and Safety Division uses the most up to date code versions to implement and enforce construction standards and codes. 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.

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); soil stability investigation and the minimum dimensions of the structure. Over time, new and amended Code sections have been added for a more effective implementation of the City's goals and objectives.

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 and risks.

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 major supply lines (water, gas) might be subject to major 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 the condition of some of the water storage facilities and pipelines in the City and their ability to withstand a major earthquake.

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 hazards, such as flooding, is defined by a recurrence 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 table are recommended for earthquakes expected from the Newport-Inglewood fault zone.

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.

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.

Policies

It is the policy of the City to:

1 Promote 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 design and construction standards based upon appropriate levels of risk and hazard.

3 Encourage cooperation among adjacent communities to ensure law enforcement 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 fire protection agencies in utilizing 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 street naming systems.

8 Coordinate with the Fire Department to provide adequate emergency access to all streets, including the end points of cul-de-sacs, and along the sides of structures.

9 Ensure that services are available to adequately address health and sanitation issues.

10 Work with other jurisdictions to ensure that local, County, State, and Federal health, safety, and sanitation laws are enforced.

11 Develop and maintain relationships with various levels of health, safety, and sanitation agencies.

12 Ensure the availability of paramedic rescue and fire suppression services to all areas of the City.

13 Maintain and implement a current Standard Emergency Management Systems (SEMS) Plan to cope with major disasters.

14 Regulate the activities, types, kinds, and number of animals and balance the interest of animal owners and persons whose welfare is affected.

15 Ensure the protection of compatible levels of wild animal populations, which do not adversely impact humans and their domestic animals.

16 Work with adjacent jurisdictions with respect to animal regulation activities.

17 Consider alternative animal control and enforcement methods and facilitate shelter, medical treatment, and training classes where needed.

18 Avoid or minimize the risks of flooding to new development.

19 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.

20 Maintain the structural and operational integrity of essential public facilities during flooding.

21 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.

22 Establish cooperative working relationships among public agencies with responsibility for flood protection.

City residents currently enjoy and the City continues to work to provide comprehensive programs to serve the social, cultural, and civic needs as well as the educational desires of the community. Since the provision of social services is important to the community, a Social Services Section that defines roles and responsibilities, and provides guidelines for the future in the planning and coordination of social services is an important component of the City's General Plan. Unlike other elements of the General Plan that deal with specific areas of concern, the Social Services Section addresses the broad concerns of human problems and the effective use of available resources in meeting those problems. While these 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.

In addition to addressing Social Services, this Element also addresses the housing needs of the community. The State of California requires every city and county to prepare and adopt a Housing Element within the community's General Plan. According to State law, the Housing Element must include four major components:

- A statement of the City's goals, quantified objectives and policies relative to the construction, rehabilitation, conservation and preservation of housing.
- An implementation program which sets forth a schedule of actions which the City is undertaking or intends to undertake to implement the policies and achieve the goals and objectives of the Housing Element.
- An assessment of the community's housing needs.
- An inventory of resources to meet needs and of the constraints that impede public and private sector efforts to meet the needs.

Thus, this Element is a compilation of the Social Services aspects of the community combined with the State mandates of housing law.

SOCIAL SERVICES COMPONENT

The Social Services Component of this Element includes four sections.

Social Services Goals: A statement of the City's goals relative to the provision of social services.

Social and Cultural Development: This section looks at the programs and organizations within the City which provide social, cultural and educational enrichment and development for members of the community and surrounding areas. In addition to looking at who these various organizations and volunteer groups are, this section also addresses the role that the City plays in coordinating and communicating with the groups in the provision of these services.

Senior Services: Almost 30% of the City's population are residents age 60 and older (Year 2010 Census). As such, the City has made an effort to provide and/or make available specific and appropriate services addressing this portion of the population. This section discusses the organizations and services which acknowledge and support the needs of this large segment of the population.

Social Services Policies: A statement of the City's policies relative to the provision of social services.

Social Services Goals

1. Aid in matching the facility needs of the community with existing and future facility resources throughout the City.
2. Involve its residents in community and civic activities.
3. Encourage and provide facilities and resources for recreational, social, cultural, and educational programs for its residences.
4. Support mechanisms for participation with area wide districts and jurisdictions for the betterment of the residents of the City of Rancho Palos Verdes.

Social and Cultural Development

Prior to City incorporation in 1973, responsibility for the planning and delivery of human services in the past had largely fallen on non-local levels of government and a variety of private agencies. This frequently resulted in considerable duplication of services, program fragmentation, and frequent waste of already limited resources. In October, 1973, The League of California Cities 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 involvement is primarily reflected in the operations of the City's Recreation and Parks Department. The Recreation and Parks Department is responsible for coordinating a comprehensive park system and numerous community activities. In order to coordinate these resources, this Department currently manages five programs: **Administration, Recreational Facilities, Special Events, Point Vicente Interpretive Center (PVIC), and the REACH program.** These five programs are described as follows:

Administration: Overseeing the management of the City's parks system and various community programs, the Administration handles the coordination of recreational facilities, works with 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 usable 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.

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 (PVIC): 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.

Senior Services

The population of those 60 years and older in Rancho Palos Verdes 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 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 over 2,000 members, consisting of Rancho Palos Verdes residents as well as those from surrounding cities, Peninsula Seniors provides a variety of programs 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
- 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 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 any way possible.

Policies

1. Provide leadership in solving the need for community meetings, cultural events, and recreational facilities.
2. Plan for a Civic Center.
3. 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.
4. Encourage the development of homeowners associations and other community groups as a vehicle for increased participation in government.
5. Seek input from residents and address their concerns during the planning process.
6. Continue the use of town meetings and forums to obtain public input. Encourage community events.
7. Develop information services designed to reach as many residents as practical, which lists organizations, events, issues and services available to City residents.
8. Create recreational opportunities for all City residents.
9. The City will be an advocate for the efficient delivery of services to its residents.
10. Recognize the residents' cultural, educational, and recreational needs and encourage programs in these areas.
11. Work with neighboring jurisdictions and organizations to identify and address common issues. This should include the encouragement of dialogue between the professional City employees of neighboring jurisdictions and organizations.
12. Establish City committees to utilize resident skills to benefit the community.
13. The City shall work with neighboring cities, other agencies and senior citizen organizations to identify, assist with providing, and/or to promote services specialized for the large population of seniors within the City.

HOUSING ELEMENT COMPONENT

The State of California mandates every City and County to prepare a General Plan Housing Element to address the City or County's future housing needs. The current City Housing Element was adopted by the Council on February 4, 2014 and certified by the State Department of Housing and Community Development (HCD) on April 9, 2014. The certified Element contains many lengthy and technical appendices that would not be beneficial to include in this General Plan document. As such, this portion of the Housing and Social Services Element merely outlines the main contents within the separate stand-alone certified Housing Element. To view a copy of the entire certified Housing Element, one can either contact the Community Development Department or visit the City's website at www.rpvca.gov.

The Housing portion of this Element contains three Sections:

Goals, Policies and Objectives: A statement of the City's goals, quantified objectives, and policies relative to the maintenance, preservation, improvement, and development of housing. Quantified objectives are the City's estimate of the maximum actual numbers of housing units that can be constructed, rehabilitated, conserved and preserved during the planning period (currently October 15, 2013 through October 15, 2021).

Program Administration and Other Actions: Describes the tools the City will use to continue existing and create new program endeavors, explains who is responsible for program implementation, shows how the Housing Element achieves consistency with General Plan elements and describes the public participation effort. Specifically, this section addresses:

- Administration of land use and development controls
- Provision of regulatory concessions and incentives
- Utilization of federal and state financing and subsidy programs
- Utilization of moneys in the Low and Moderate Income Housing Fund
- Agencies and officials responsible for program actions
- Consistency of the Housing Element with other General Plan Elements
- Public participation in the development of the Housing Element

Housing Programs: Presents the Housing Program according to five categories:

- Identify actions that will be taken to make sites available to accommodate that portion of the City's share of the regional housing need for each income level that could not be accommodated on sites identified in the sites inventory.
- Assist in the development of affordable housing.
- Remove governmental constraints.
- Conserve the existing stock of affordable housing.
- Promote equal housing opportunity.

The Housing Element also includes detailed information contained in Technical Appendices. A description of each **Technical Appendix** is given below:

- **Technical Appendix A** contains all the detailed data, statistics and analyses pertaining to the City's housing needs, sites, constraints and progress.
- Technical Appendix B includes organizations consulted, data sources and definitions.

Goals and Policies

The following are the City's Housing goals and policies for the planning period that began on October 15, 2013 and ends on October 15, 2021.

Construction Goals and Policies

Goals

1. Accommodate the housing needs of all income groups as quantified by Regional Housing Needs Assessment.
2. Facilitate the construction of the maximum feasible number of housing units for all income groups.

Policies

1. Designate sites that provide for a variety of housing types.
2. Implement the Land Use Element and Development Code to achieve adequate sites for all income groups.

3. Prefer that persons, entities and/or developers that are obligated to provide affordable housing units provide the affordable housing units on-site as part of their development project rather than paying in-lieu fees to the City.

Conservation Goals and Policies

Goals

1. Reduce the number of cost burdened lower income households.
2. Reduce the number of crowded lower income households.
3. Increase the number of moderate income, first-time homebuyers.

Policies

1. Provide rental assistance to extremely low-, very low, and low- income households through programs administered by the Housing Authority of the County of Los Angeles.
2. Monitor and protect the supply of affordable housing by enforcing existing regulations and affordability restrictions.
3. Continue to implement the Citywide Affordable Housing Requirement/Housing Impact Fee.
4. Facilitate the construction of new housing affordable to lower income households.
5. Ensure the affordability of new affordable housing developments through long-term affordability covenants.
6. Provide information to local residents about financial assistance available to first time homebuyers.

Preservation Goals and Policies

Goals

1. Attain barrier and constraint free City codes, ordinances, and policies.
2. Provide codes, ordinances, and policies that lead to the improvement of the housing status of residents.

Policies

1. Remove existing governmental constraints to the maintenance, preservation, improvement and development of housing.
2. Affirmatively further housing goals through City codes, ordinances and policies that enhance the housing quality of life experienced by residents.
3. Continue to implement land use regulations that facilitate meeting affordable housing needs.

4. Continue the processing of new housing developments designed to address the needs of all income groups.

Rehabilitation Goals and Policies

Goals

1. Achieve a housing stock free of substandard structures.
2. Conserve and improve the existing stock of affordable housing.

Policies

1. Continue to implement the Housing Code Enforcement Program.
2. Implement a Home Improvement Program when funds become available.

Fair Housing Goals and Policies

Goals

1. Attain a housing market with “fair housing choice,” meaning the ability of persons of similar income levels regardless of race, color, religion, sex, marital status, familial status, disability, national origin, ancestry, sexual orientation, source of income or other arbitrary factor to have available to them the same housing choices.

Policies

1. Continue to promote fair housing opportunities through the City’s participation in the County’s Community Development Block Grant Program.

2. Promote fair housing through the provision of information and referral services to residents who need help in filing housing discrimination complaints.

To review the Program Administration and Other Actions Section, the Housing Programs Section, and the Objectives and Technical Appendices of the Housing Element, please contact the Community Development Department. You may also view the Housing Element on the City’s website at www.rpvca.gov.

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. Through proper land use planning and regulations, to provide for a quiet and serene residential community.

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.

Fundamentals of Noise

Noise

For the purposes of this section of the General Plan, Noise is considered as any loud sound. 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 and is abbreviated dB. 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.

Sound does not exist in a vacuum; its acoustic energy must have an object to strike in order to produce vibrations that are interpreted as sound. The vibration-production function of sound is one of the major reasons that sound or noise controls are necessary. Sound moves in wave patterns like the ocean. 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, can be desirable. However, as sound intensity increases, 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 humans and the environment.

Sound intensity (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 suggested for use in noise elements prepared pursuant to Section 65302(f) of the 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 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. 90 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. Table N.1 below indicates the relative levels of noise producers and their effects.

Table N.1: Common Sound Levels and Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud

Table N.1: Common Sound Levels and Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	Reference Noise Level
Average Office	60	Quiet	½ times as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ times as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	⅛ times as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of hearing

Notes: Compiled by LSA Associates, Inc., 2004.

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.

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 humans in different ways. Noise above 35-45 decibels will disturb a sleeping person; noise between 50-60 decibels makes it difficult to carry on a quiet conversation; and with noise above 85 decibels, stress reactions can be expected.

Components of the Noise Environment within the City

In urbanized areas such as the City of Rancho Palos Verdes, the noise environment generally includes two major components: transportation noise sources and community noise sources. Sensitive noise receptors include residences, schools, medical facilities, and similar uses that are sensitive to noise. 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 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 3 major components of the noise environments within the City of Rancho Palos Verdes: transportation noise sources, community noise sources and structural transmission of sound and vibration.

Transportation Noise Sources

Transportation Noise Sources include automobiles, trucks, motorcycles, buses, trains, helicopters and planes. 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.

There are no designated airport take-off or approach paths over the City. This is true of aircraft taking off from or landing at Los Angeles International Airport (LAX), Long Beach Daugherty Field (LGB), or Torrance Zamperini Field (TOA), which are the three (3) airfields nearest to the City. 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 aircraft departing LAX for points east and "looping" counterclockwise around the Peninsula to head east; small planes towing advertising banners; pilot training, test flights and aerobatics; and high-altitude commercial jet over-flights. Table N.2 below summarizes average daily operations at several nearby airfields.

Table N.2: Nearby Public Airfield Operations

Airfield	Average Daily Operations (Annual)			
	Total	Commercial	General Aviation	Other
Los Angeles (LAX)	1674	81%	3%	16%
Long Beach (LGB)	834	9%	89%	2%
Torrance (TOA)	474	--	99%	1%
Hawthorne (HHR)	220	--	99%	1%
Compton (CPM)	181	--	100%	--
Catalina (AVX)	45	--	86%	14%

Notes: Average daily operations based upon data reported for the most recent 12-month period, ending November 30, 2013 (Source: http://www.airnav.com). "Other operations" include military aircraft and air taxi services.

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.

Rancho Palos Verdes is served by three (3), 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 the Circulation Element. Marymount College Palos Verdes also operates shuttle buses between its Palos Verdes Drive East campus and its two (2) off-campus housing complexes in San Pedro. The effect of vehicular noise as emitted from the City's arterials and major collectors are reflected in the noise contour map (Figure 22).

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.

Steady State Noise

In Rancho Palos Verdes, steady state noise would include noise generated from traffic flows, activities around service stations, Golden Cove Center, Peninsula Center, the commercial strip along Western Avenue, 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 the stereo or television turned up too loud, barking dogs, or a roaring motorcycle.

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 the industry component of noise is inapplicable to Rancho Palos Verdes, it should be noted that noise from the construction of new homes is definitely industry related. Unlike other single event noises, 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.

The City 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.

Structural Transmission of Sound and Vibration

The predominant type of structure found in Rancho Palos Verdes is the detached, single-family residence. However, the City also includes attached, single- and multi-family residences in the form of townhomes, condominiums and apartments. Attached dwelling units present opportunities for the transmission of both sound and vibration through common walls and floors, which may tend to seriously degrade the interior noise environment and privacy of these dwellings. Similar issues and impacts may occur with other types of institutional and transient-occupancy uses, such as congregate car facilities and hotels.

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 (airport, 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 (STC) and impact insulation class (IIC) of common wall and floor assemblies, as well as the appropriate insulation of plumbing fixtures and water and drainage lines within these assemblies.

Measurement of Noise within the City

Methodology for Developing Current Noise Level Contours

Pursuant to Section 65302(f) of the Government Code, a noise contour map of General Plan build-out conditions has been prepared (see Figure N.1). The purpose of the noise contour map is to identify the estimated noise levels at varying distances from the City's major arterials roadways and to describe the potential noise effects upon adjacent land uses. Exterior land uses along the major arterials within the City limits would be potentially exposed to high noise levels if outdoor active use areas such as backyards and/or patios/balconies are directly adjacent to these roadways.

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 the 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 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 to beyond the roadway right-of-way. As depicted in the noise contour map (Figure N.1), traffic noise along the major arterials within the City range from moderate (Highridge Road, Indian Peak Road, Miraleste Drive, Palos Verdes Drive (South, East and West), Silver Spur Road, Crest Road, Crestridge Road, Western Avenue, and a portion of Crenshaw Boulevard and Hawthorne Boulevard) to high (Hawthorne Boulevard and majority of Crenshaw Boulevard).

Additionally, ambient noise monitoring was conducted within the City at 33 locations in October 2009 and August 2010. This monitoring demonstrated that ambient noise within the City is moderate, with the L_{eq} ranging from 42.4 to 75.0 dBA. In general, vehicular traffic is the dominant noise source within the City, especially in areas adjacent to arterials and major collector streets. Other noise sources that contributed to the ambient noise included car alarms, engine startups, car doors shutting, reverse beeping, car brakes, honking, lawn mowers, weed whackers, dust blowers, people, music, shopping carts, dogs barking, construction activity, birds/crows chirping, whistle blowing, school bell ringing, airplane and helicopter overflight, ambulance siren, children playing at playground, air conditioning units, chain-link fence clanking, and trees rustling in the wind.

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, therefore not requiring the extensive and on-going 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 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 called 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 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, 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 4 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.

Traffic Noise Impacts

After General Plan build out, future traffic noise levels along the major arterials and collector roads within the City would add 0.7 to 2.3 dBA to corresponding existing traffic noise levels along arterials and major collector roads within the City. This range of traffic noise level changes is not considered significant and thus no significant growth-related traffic noise impacts would occur on existing uses throughout the City.

Based on the Land Use Element and Circulation Element of the General Plan, it is anticipated that development would occur on vacant parcels along the City's major arterial roadways before General Plan build out in 2035. 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 Activity Use Areas

The noise contour map (Figure N.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

Based on the data provided in the EPA's Protective Noise Levels (EPA 550/9-79-100, November 1979), standard homes in Southern California provide at least 12 dBA of exterior to interior noise attenuation with windows open and 24 dBA with windows closed. Therefore, homes exposed to exterior traffic noise levels lower than 69 dBA CNEL (45 + 24 = 69 dBA) would not have their interior noise level exceeding the 45 dBA CNEL standard with windows closed. With windows open, homes exposed to exterior traffic noise levels exceeding 57 dBA CNEL (45 + 12 = 57 dBA) would exceed the 45 dBA CNEL interior noise standard. Residential homes proposed within the 45 dBA CNEL interior noise contour that have no natural or manmade barriers providing shielding effect would be potentially exposed to traffic noise levels exceeding 69 dBA CNEL and would require mitigation measures such as building façade upgrades (double-paned windows, solid-core wood doors, etc). In addition, mechanical ventilation, such as an air-conditioning system, may be required for dwelling units proposed on vacant parcels without shielding from natural or manmade barriers to ensure that windows can remain closed for prolonged periods of time.

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 require a sound wall with a minimum wall height of 5 ft to reduce the exterior noise level to 65 dBA CNEL or lower for residential or other noise-sensitive land uses:

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard, 98 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive, 154 ft;

- Palos Verdes Drive East between north City limit and Miraleste Drive, 94 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive, 79 ft;
- Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South, 39 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard, 116 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South, 142 ft;
- Palos Verdes Drive South between Hawthorne Boulevard and east City limit,
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 81 ft.

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.

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard, 328 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive, 520 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive, 322 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive, 268 ft;
- Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South, 135 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard, 388 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South, 479 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 274 ft.

In addition, residential homes proposed within the following distances from the roadway centerline that have no natural or manmade barriers providing shielding effect should have building façade upgrades (double-paned windows, solid-core wood doors, etc):

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard, 53 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive, 83 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive, 51 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive, 43 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard, 63 ft;

- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South, 77 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 44 ft.

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 no longer occur once construction of the individual project is completed.

Two types of short-term noise impacts can occur during the construction of any individual 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 (50’). 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. Typical maximum noise levels range up to 91 dBA at 50 ft during the noisiest construction phases.

Measures to Reduce Potential Construction Noise Impacts

Construction will be limited to between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and 9:00am and 5:00pm on Saturday in accordance with the City’s Municipal Code requirements. No construction activities are permitted outside of these hours or on Sundays and legal holidays unless a special construction permit is obtained from the Director of the Community Development Department.

The following measures can be implemented to reduce potential construction noise impacts on sensitive receptors adjacent to the individual project development area:

1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers’ standards.

2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.

3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

4. The project contractor may be required to 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.

Stationary Noise Impacts

Stationary noise impacts associated with commercial uses with potential loading/unloading activity noise need to be mitigated. As required in the City's Municipal Code, unless otherwise specified in an approved conditional use permit or other discretionary approval, all deliveries of commercial goods and supplies; trash pick-up, including the use of parking lot trash sweepers; and the operation of machinery or mechanical equipment that emits noise levels in excess of 65 dBA, as measured from the closest property line to the mechanical equipment, shall only be allowed on commercial properties that abut a residential district between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and 9:00am and 5:00pm on Saturday.

Residential stationary noise sources include air conditioners, pool equipment, and similar outdoor mechanical equipment that operates during the day or night.

Measures to Reduce Potential Stationary Source Noise Impacts

Any residual noise impacts from off-site stationary noise sources should be mitigated with stand-alone noise barriers with sufficient height to block the line-of-sight between the stationary sources of concern and the receptor locations.

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. This is true of aircraft taking off or landing at Los Angeles International Airport, and Long Beach and Torrance airfields. To ensure continued serene living quality of the City, the City has been a member of the Los Angeles International Airport'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 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 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.

Policies

Transportation Noise

1. Encourage through traffic to existing arterials and collectors so that local roads are not used as by-passes or short-cuts in order to 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 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 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.

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 the minimization of noise emissions from commercial activities by screening and buffering techniques.

Providing City services, maintaining the City's 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 establishes the policy framework upon which short and long-term financial decisions are made.

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, the Fiscal 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 Plan's elements.

Goals

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

1. Hold taxes and assessments to a minimum and continually explore and analyze the advantages and disadvantages of alternate or new sources of revenue.

2. Explore cooperative financing strategies that might be undertaken in association with others.

3. 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. Plan for revenues generated by development to be sufficient to cover the costs related to such development.

5. Thoroughly evaluate capital asset expenditures 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.

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.

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.

The Fiscal 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. The first section is **Financial Management.** This section discusses the various financial planning tools of the City, including a discussion of how the General Plan is used as an important financial planning tool. The next section, **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. The final section addresses general **Projected Economic Conditions and Issues**, which generalizes the City's projected fiscal health and identifies potential fiscal issues in relationship to future development and infrastructure improvements within the City.

Financial Management

Financial Management Structure: Financial management in the City of Rancho Palos Verdes is supported by a number of City-wide systems and processes that impact most every financial decision made. 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.

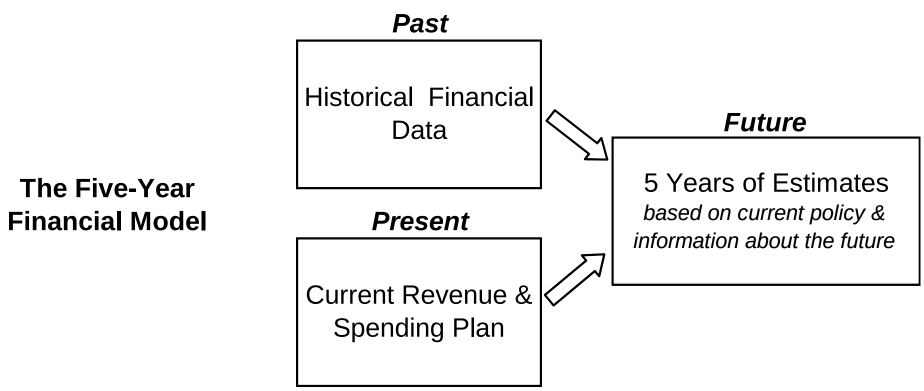
As the City Council has ultimate fiscal responsibility for the City, financial reporting is an important component of Financial Management. The City Council is provided with a Midyear Financial Report, periodic cash position reports, periodic reports of reserve position, a Year-End Financial Report, and an overview of the Comprehensive Annual Financial Report.

General Plan: The General Plan is a prescriptive document that expresses the desired future for a local jurisdiction. It is both a statement of purpose and a statement of general direction. As a statement of purpose, the General Plan portrays a vision of the City's future and identifies long-range goals. As a statement of direction, it declares the current policies of the City Council to achieve the goals, and the strategies which the staff will deploy to implement those policies. The General Plan not only paints the picture of the desired future of the City, but also prescribes a course of action for moving from existing conditions to desired conditions. City priorities and goals reflected in the General Plan are the basis for the City's budget.

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.

City Staff annually prepares the Five Year Financial Model as required by City Council policy. The Model includes all funds of the City and its component units (Successor Agency to the Redevelopment Agency, and Improvement Authority). Staff also develops a Five Year Capital Improvement Plan (CIP) which allows the programming and planning of capital facilities and improvements. The Model and the CIP help staff and the City Council to develop the annual operating budget by projecting into the future what anticipated revenues and expenditures may be 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 one-year snapshot. While preparing the Five 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.



Use of Reserves: The establishment and management of Reserves (sometimes referred to as rainy-day funds, or contingency funds) are 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.

Rancho Palos Verdes has a conservative reserve policy which requires that the City maintain a minimum reserve in the General Fund. As of fiscal year 2010-11, the General Fund reserve policy threshold is 50% of annual budgeted expenditures. The City also maintains a minimum reserve in the Capital Improvement Projects (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 Capital Improvement Plan (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 Five Year Model and presented to the City Council during each annual budget process. As required by law, 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", Rancho Palos Verdes has long recognized the importance of managing City revenues to maintain and enhance fiscal strength and stability over both the short term and long term. A "no-property tax city" is one which 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 of Rancho Palos

Verdes did not levy a local property tax, it was allocated a minimal share (about 6%) of the 1% property assessment.

The two major categories of revenues received by government are taxes and fees, each with important distinctions. 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 primarily support general governmental purposes such as paying for basic and/or essential services.

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, the service for which the fee is charged must bear a relationship to the person or entity paying the 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 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 four or five 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.

Staff annually assesses revenue trends as part of the City's Five 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 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 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 which 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 Council as part of the budget approval. Historically, the City's revenue budget has been well below the annual appropriation limit.

Accounting & Financial Report Practices: Local Ordinance and State Statutes require that the city issue annually a 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 (GAAP) 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 Rancho Palos Verdes 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 GASB pronouncements.

Purchasing: As a contract city, Rancho Palos Verdes 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 and professional services performed by an independent contractor (e.g. engineering and public safety).

The Rancho Palos Verdes' ordinance governing bid requirements, purchasing and contracting procedures is clearly intended to achieve the following goals:

- 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.

Fiscal Health, Revenue and Expenditure Structure

The Fiscal Health of the City contains four sub-sections. The first, Fiscal Health provides a brief history of the City's fiscal health since incorporation. The second, City's Revenue Base, is an overview of the City's revenue structure. The third sub-section is titled Overview by Source. This sub-section provides descriptions of the City's major revenue sources. The fourth and final sub-section is titled Expenditures, and provides an overview of the City's major expenditures.

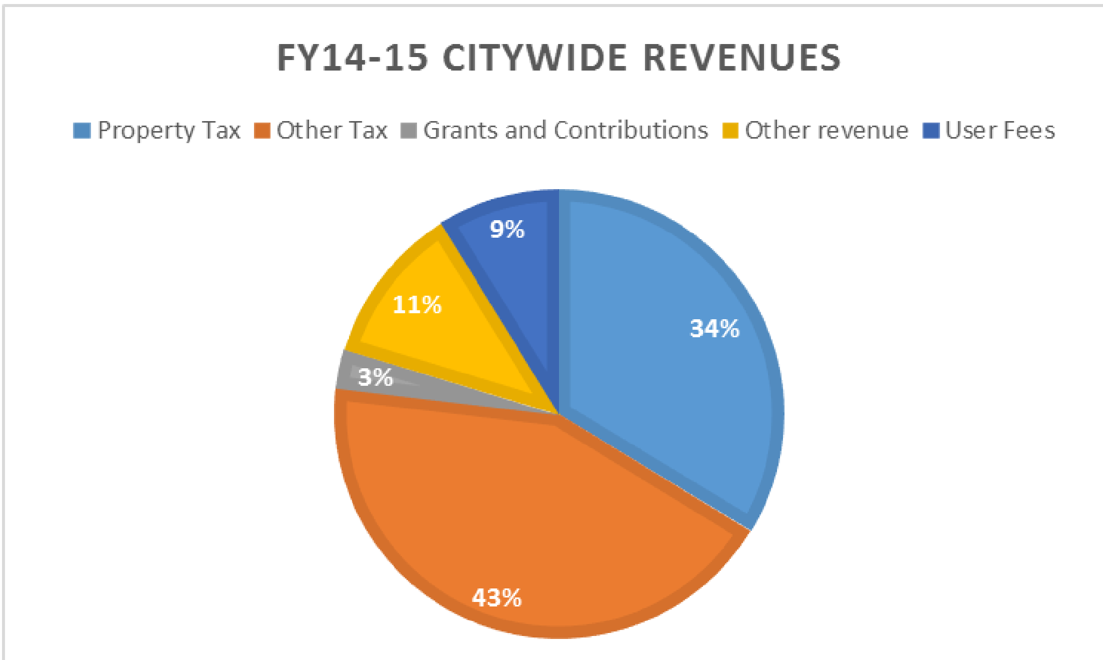
Fiscal Health

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. However, Rancho Palos Verdes is the largest City on the Palos Verdes Peninsula and has very different needs and priorities today. 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 above-ground 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 addition, property owners approved a storm drain user fee, providing a ten-year revenue stream to help pay for improvement of the City's storm drains. 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.

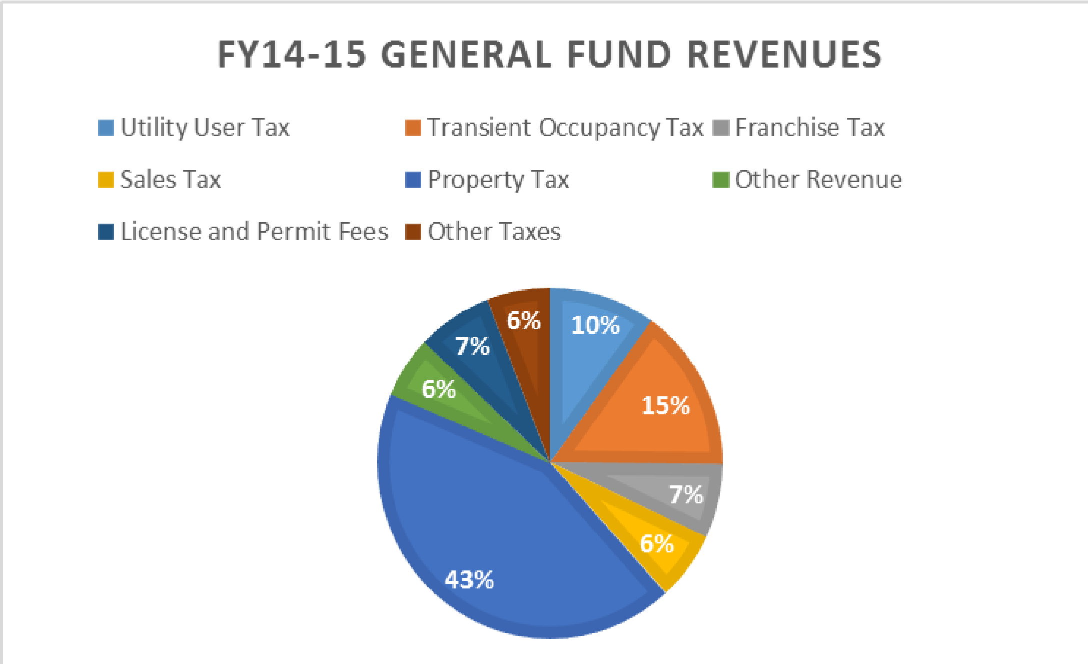
City's Revenue Base

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 also are 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. The taxes collected by the City are primarily general taxes which are used to support general governmental purposes. Through FY 14-15, the City's major revenues have been property tax, utility user tax, franchise tax, transient occupancy tax and sales tax.



User fees, in contrast to taxes, are charges imposed for services that benefit a specific segment of the community. In Rancho Palos Verdes, 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. Recent 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 which 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 eight percent of the City's annual property tax revenue. If enacted, such a loan is required to be repaid within three years with interest. The state cannot take a property tax loan more than twice in any ten year period, and may only take the second loan if the first loan has been repaid.

The result in these changes has been that Property Tax has become Rancho Palos Verdes' 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 of Rancho Palos Verdes, it is important to maintain facilities and provide services that protect the city's property values.

Revenue Overview by Source

Unrestricted General Fund Revenue Sources

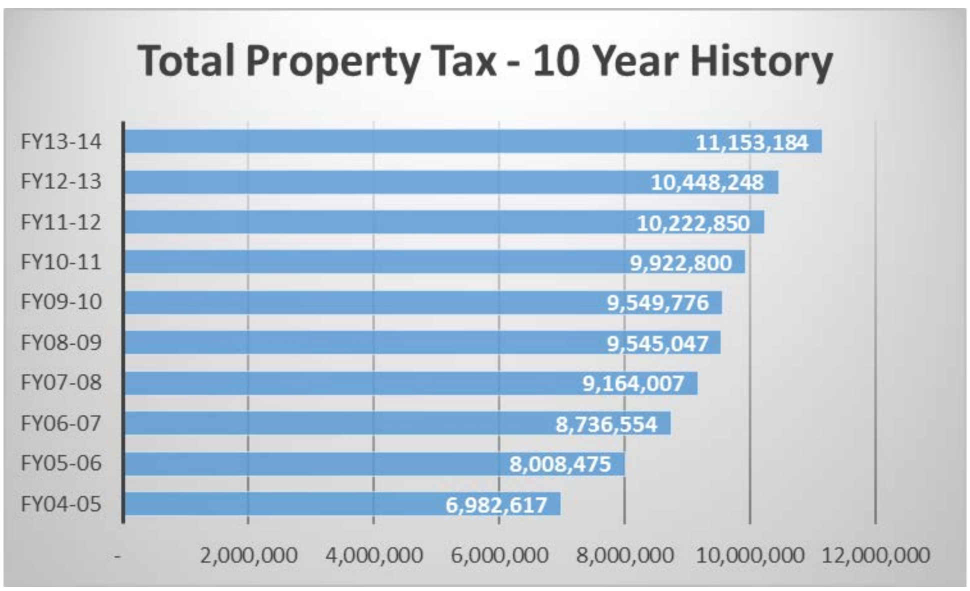
The General fund accounts for a variety of unrestricted revenues that may be used for any expenditure of the City. Primarily, General fund revenue consists of general-purpose taxes. The most significant General fund revenue sources are described below.

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 one percent, equaling $1 per each $100 of assessed valuation (subject to growth limitations of 2% per year). Rancho Palos Verdes' share of the $1 is about 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 one percent levy, with the majority going to the County and the School Districts.

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, anytime 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 three 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 Los Angeles 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 telephone 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 Consumer Price Index in Los Angeles County 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, construction of a large luxury hotel (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 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.

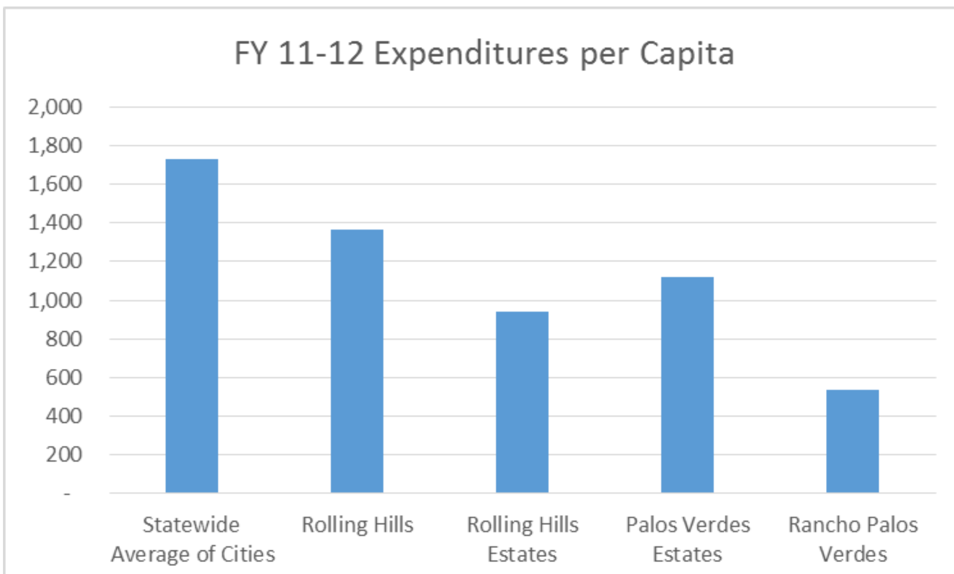
Infrastructure Maintenance: The City has assessments related to the improvement and maintenance of specific types of infrastructure (e.g. storm drains, sewers). These fees are typically based on the parcel's proportionate use of the infrastructure system.

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 generates about $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 (the year 2016).

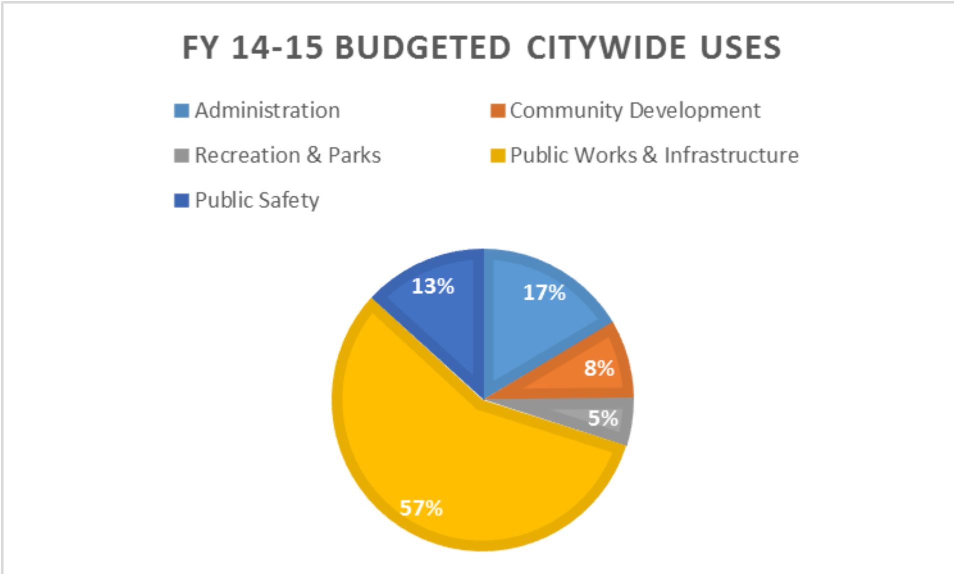
Development Impact Mitigation: The City levies several Development Impact Mitigation fees to be used for specific purposes. The City's goal is to ensure that all revenues generated by growth and development are sufficient to cover the costs related to development growth.

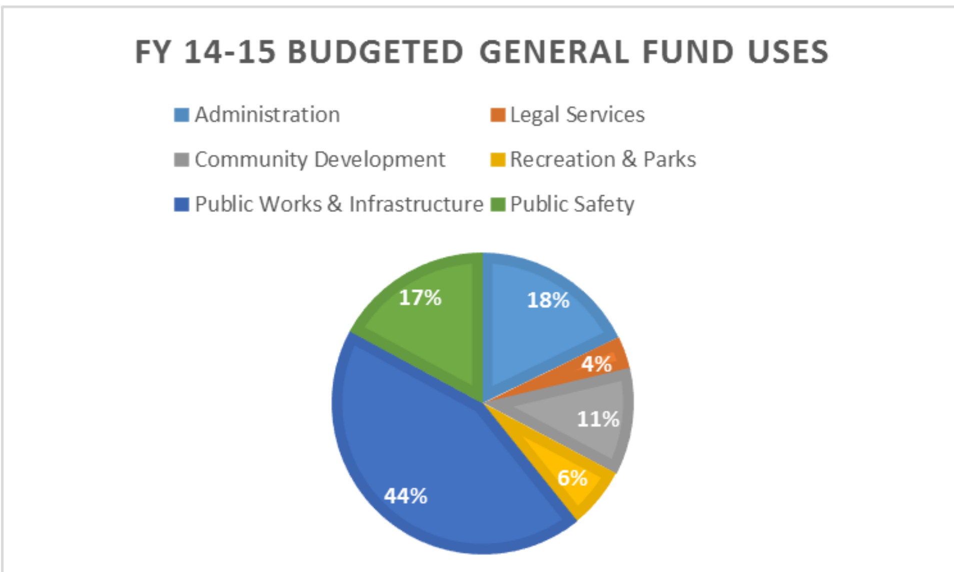
Expenditure Structure

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, Rancho Palos Verdes 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.

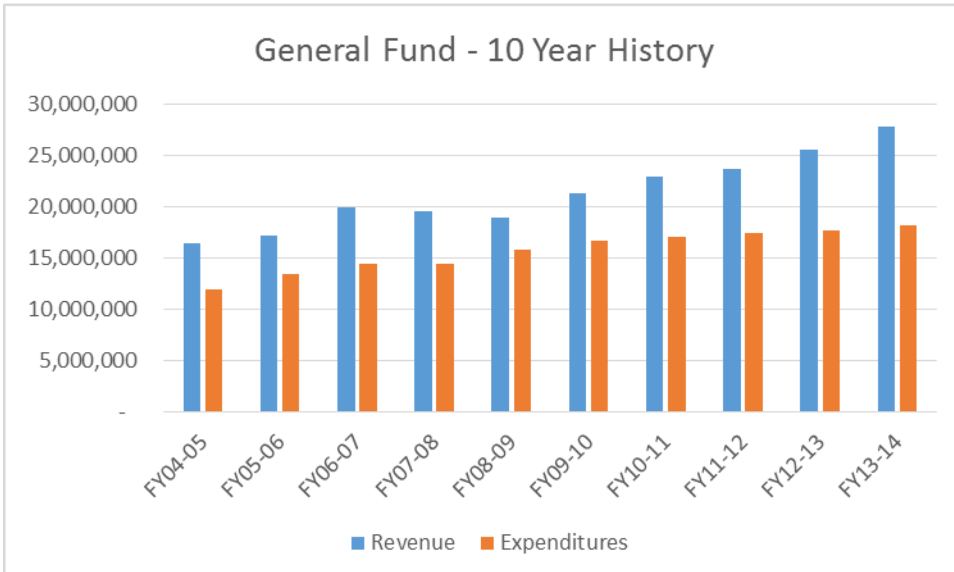




Without a vote of the residents, the City's options to raise additional revenue are very limited. Therefore, additional services and improvements desired by residents must compete with essential expenditures such as public safety and infrastructure for limited resources. Much of the City's infrastructure was built in the 1960's, 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, in an attempt to protect coastal habitat, the City has acquired more than 1,400 acres of open space that must be maintained to standards imposed by state and federal resource agencies. As street maintenance expenditures grow, the City's General Fund must provide an increasing subsidy, as transportation revenues discussed previously typically remain flat.

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 expected from the luxury hotel beginning in FY09-10, future 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 Capital Improvement Plan, 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 (grants and earmarks) or use new revenue sources (tax from the newly developed luxury hotel) for necessary infrastructure projects identified in the Capital Improvement Plan instead of adding or expanding services. Future projects include roadway stabilization due to storm water runoff issues, traffic safety improvements, and replacement of aging facilities. As of 2010, more than $100 million of projects have been identified that remain unfunded. A schedule of unfunded projects is maintained in the City's Capital Improvement Plan.

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 the community expects.

Policies

It is the policy of the City to:

1. Consider the cost effectiveness and community benefits of new City services and facilities.

2. Require that wherever appropriate, City services be paid for by the users in the form of specified fees or taxes.

3. Work toward integration of common services among neighboring jurisdictions, agencies and organizations for improved cost effectiveness and quality of service.

4. Consider the financial impacts of City decisions on other 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. Seek or accept funds from government sources only if the obligations of the City caused by accepting such funds do not negate the benefits of receiving those funds.

7. Evaluate the merits of contracting for services versus in-house staffing.

8. Encourage private contributions and donations to the City.

9. Consider administrative and enforcement capabilities and available funding before imposing new regulations to address whether such new regulations can be effectively administered.

10. Consider the financial impact of City decisions on City residents.

11. Finance recurring expenditures from recurring revenues.

12. Consider the cost impacts of approving any new development within the City.

13. 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.

Appendix B

Planning Commission Approved

Land Use Changes

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

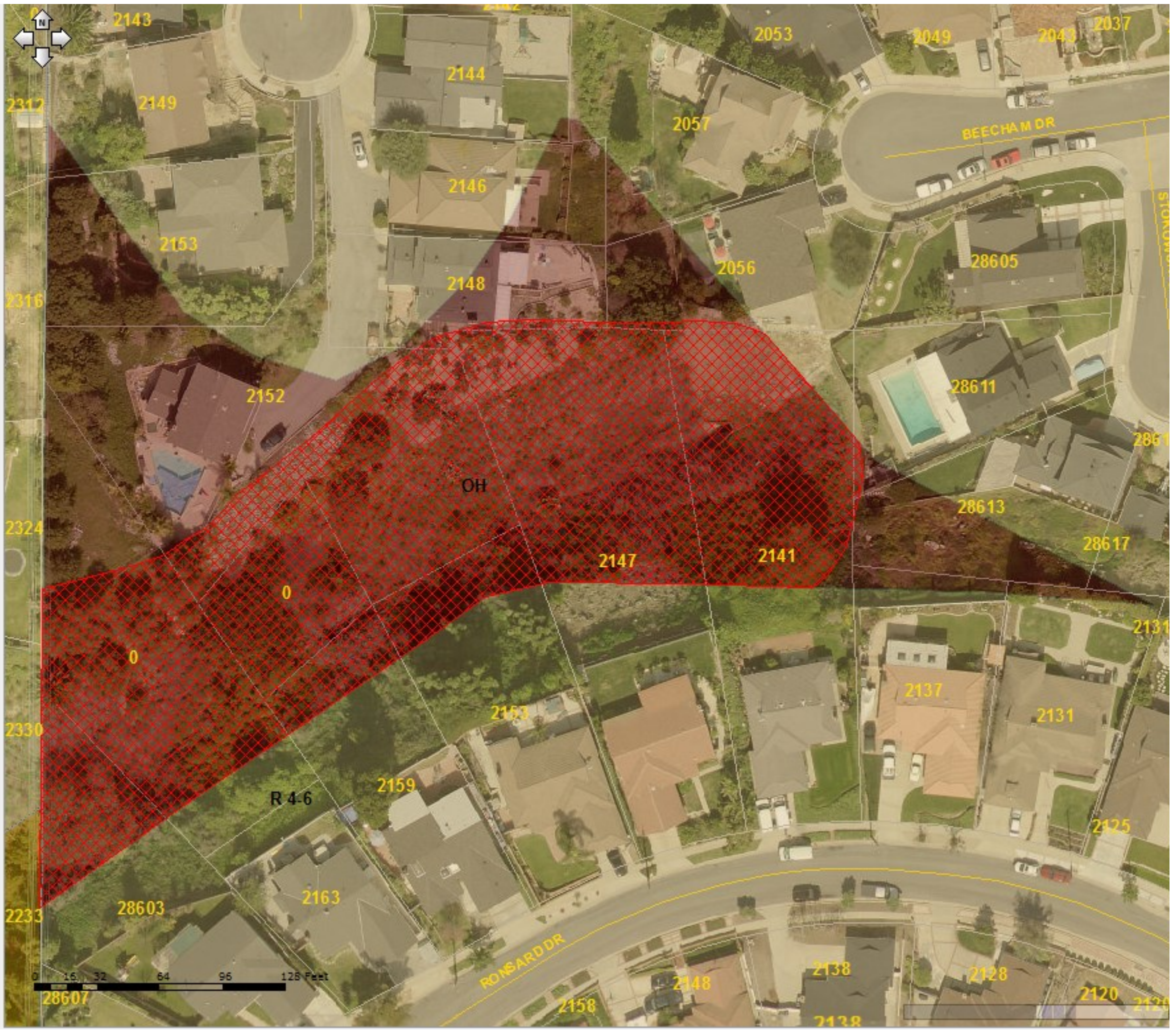
Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Alaflora Drive (27909, 27925, 27953, 27961, 27958, 27954, 27948)
- Calzada Drive (28025, 28039, 28036, 28032)
- Delasonde Drive (2031, 2026, 2022)
- Galerita Drive (2059, 2064, 2060, 2052, 2046)
- Santa Rena Drive (2158, 2161)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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- Van Karajan Drive (2149, 2153, 2152, 2148, 2146, 2144)
- Beecham Drive (2057, 2056)
- Ronsard Drive (2163, 2159, 2153, 2147, 2141, 2137, 2131)
- N Enrose Drive (28603)

Hazard Boundary Line Adjustments &

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- Caddington Drive (1914, 1920, 1926, 1930, 1936, 1942, 1950, 1956, 1962, 1966, 1972, 1978, 1984, 2002, 2010, 2016, 2022, 2028, 2034, 2040, 2050, 2058, 2070, 2076, 2102, 2108, 2114, 2120, 2124, 2130)
- Bayend Drive (29004, 29002, 29001, 29005)
- Jaybrook Drive (1939, 1943, 1949, 1953, 2029, 2035, 2039, 2043, 2049, 2053, 2059, 2063, 2069)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

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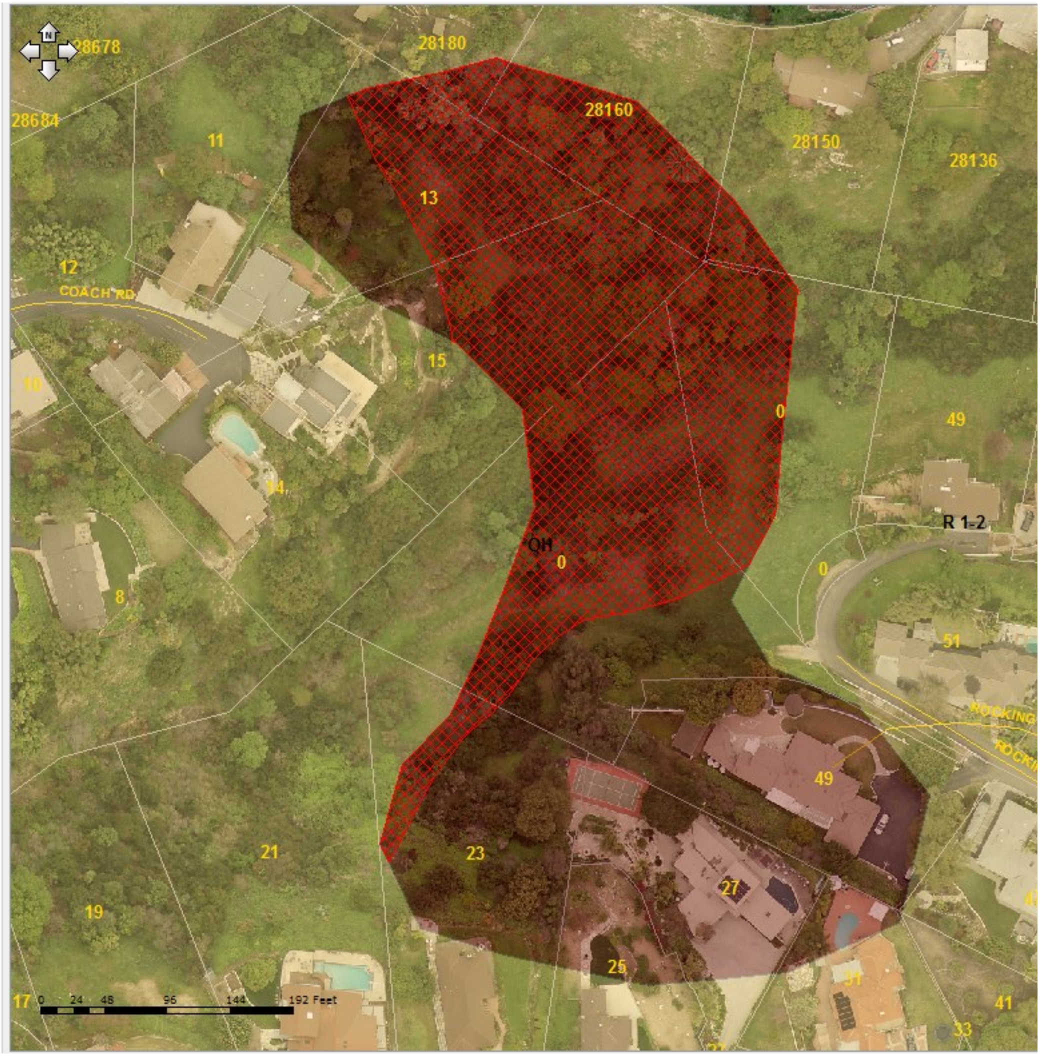
- Chaparral Lane (10)
- APN 7568-006-008

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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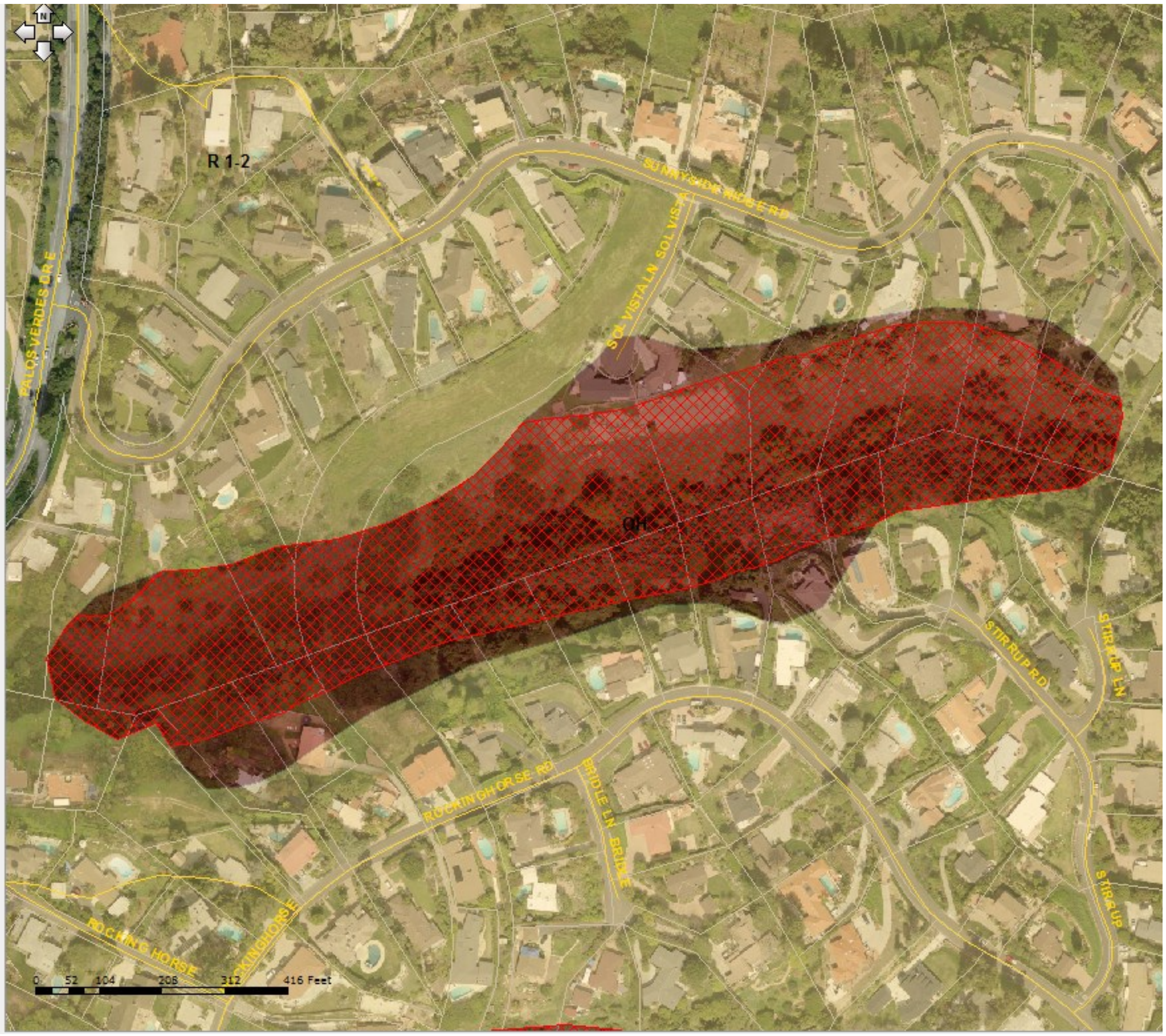
- Colt (11, 13, 15)
- Palos Verdes Drive East (28180, 28160, 28150)
- Rockinghorse Road (23, 25, 27, 31, 49)
- APNs 7556-011-033, 7556-011-031

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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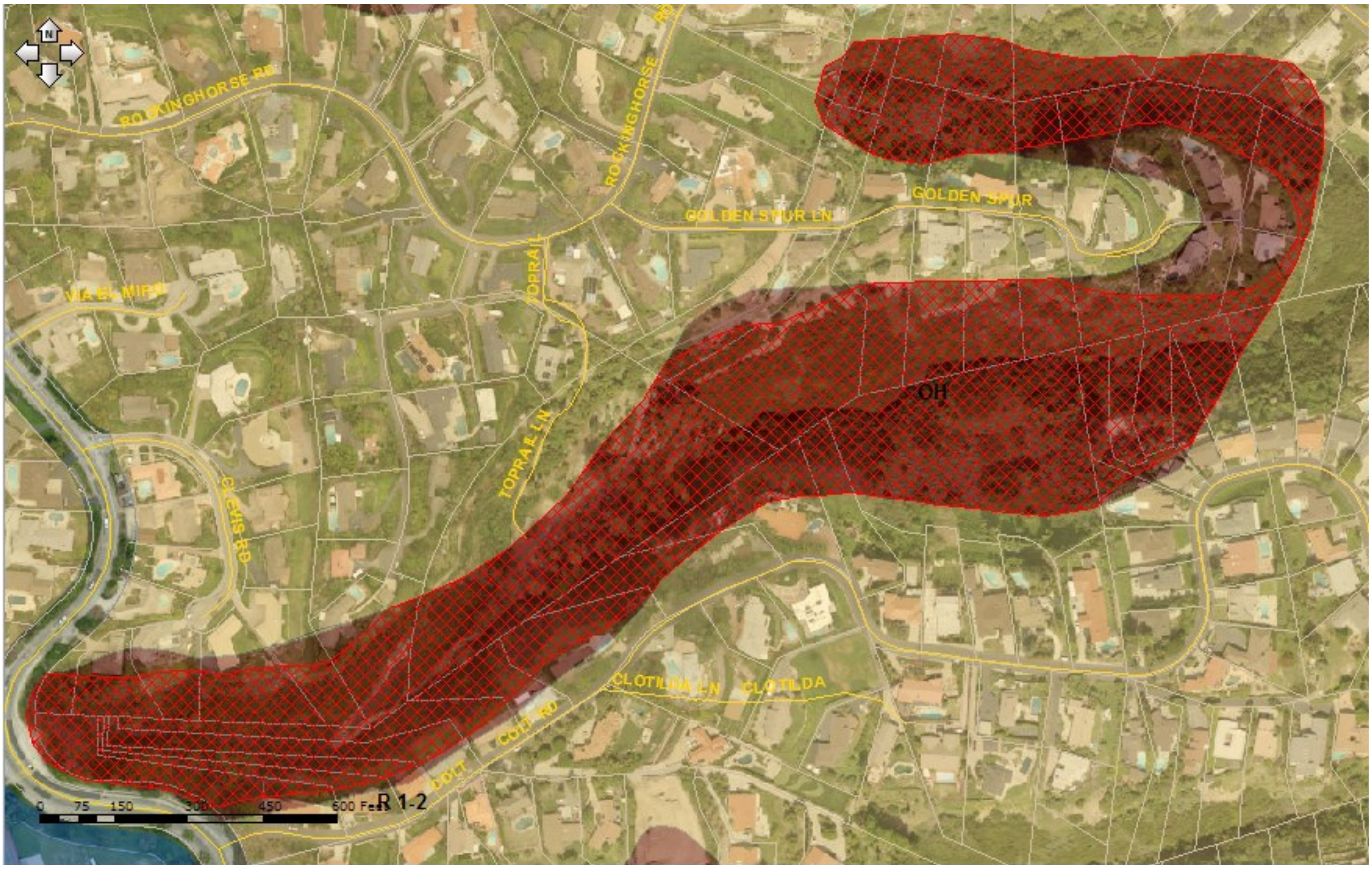
- Sol Vista Lane (27936, 27928, 27914)
- Sunnyside Ridge Road (2424, 2414, 2404, 2348, 2274, 2262, 2628, 2618, 2606)
- Stirrup Lane (5, 16, 18, 19, 17)
- Rockinghorse Road (49, 81, 79, 77, 75, 73, 71, 69, 63, 67, 63, 61)
- APNs 7556-011-016
- Palos Verdes Drive East (28122)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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- Clevis Road (29060, 29068, 29075, 29048, 29040)
- Colt Road (2463, 2505, 2509, 2515, 2521, 2625, 2703, 2717, 2727, 2767, 2811, 2821, 2831, 2847, 2855, 2873)
- Golden Spur Lane (5, 4, 6, 9, 15, 17, 19, 23, 25, 27, 26, 22, 21, 16, 14, 12, 10)
- Rockinghorse Road (48, 50, 68, 70, 90, 92, 94, 96)
- Bridle Lane (5, 6, 7, 8)
- Toprail Lane (12, 29010)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

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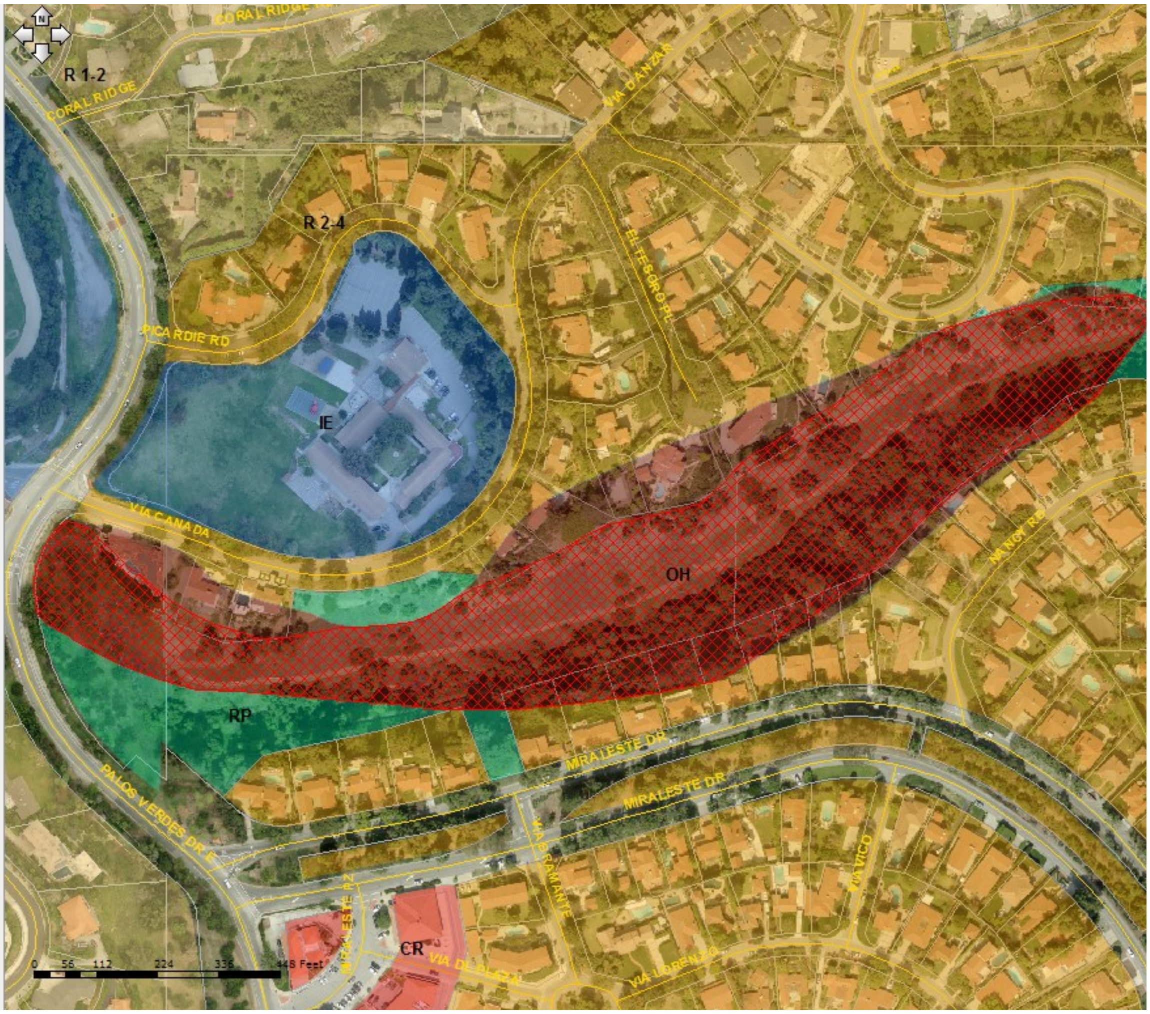
- Coral Ridge Road (2721, 2719, 2709, 2641, 2631, 2621, 2607, 2600)
- Sparta Drive (2600)
- Colt Road (2838, 2834, 2830, 2826, 2824, 2822, 2818, 2816)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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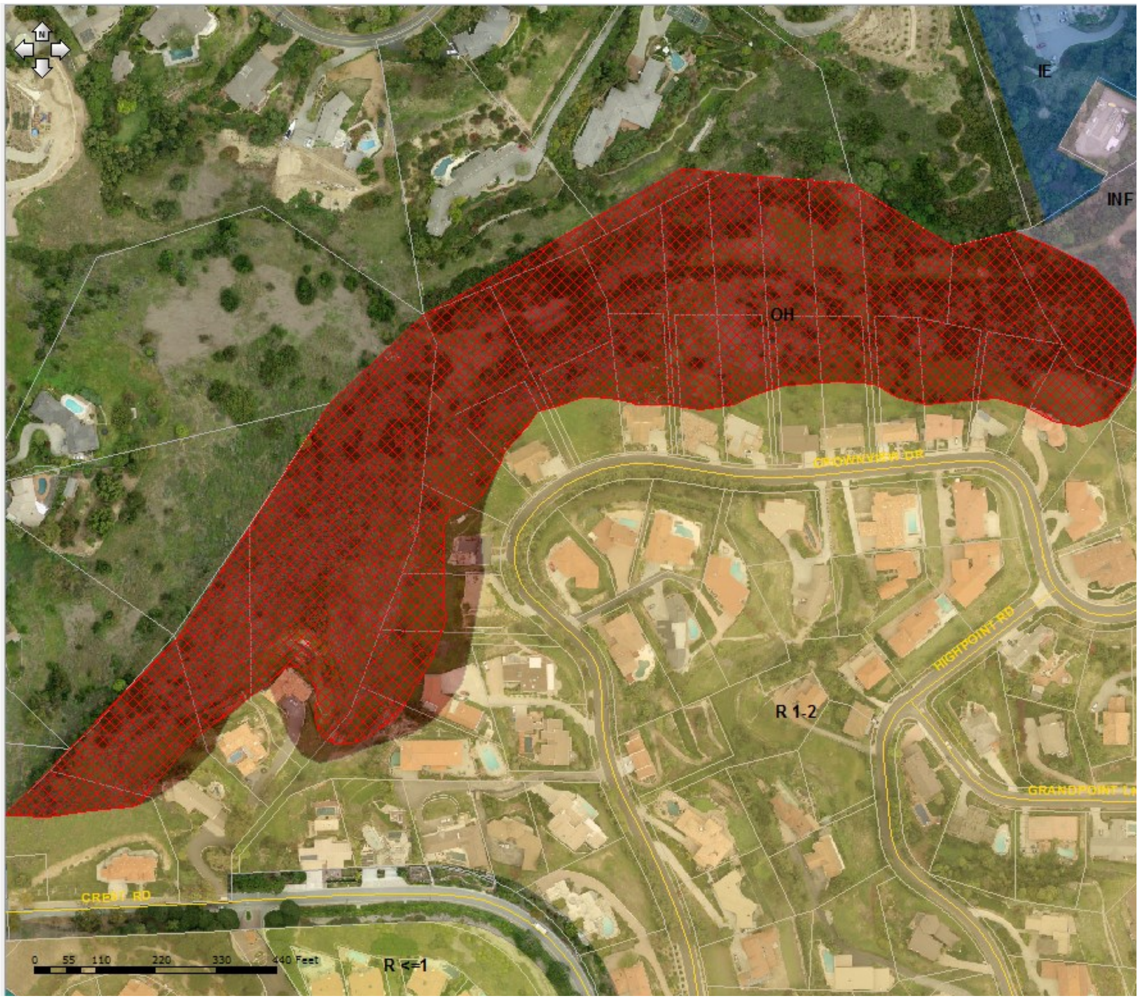
- Via Canada (6200, 6216, 6220, 6244, 6248, 6252, 6420, 6424, 6432, 6436)
- APNs 7557-009-900, 7557-007-024, 7557-005-900
- El Tesoro Place (3821, 3820)
- Via de Anzar (6604, 6608)
- Nancy Road (6529, 6525, 6521, 6517, 6515, 6509, 6505, 6501)
- Miraleste Drive (4076, 4072, 4068, 4064, 4060, 4052, 4048, 4044, 4036, 4028)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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- Crownview Drive (3123, 3131, 3139, 3145, 3157, 3163, 3177, 3205, 3217, 3235, 3249, 3261, 3285, 3303)
- Crest Road (3867, 3845, 3841, 3837)
- APNs 7566-015-029, 7566-015-033, 7566-015-031, 7566-015-032, 7566-015-014, 7566-015-015, 7566-015-018, 7566-015-019, 7566-015-022, 7566-015-023, 7566-015-026, 7566-023-026, 7567-004-012, 7567-004-008

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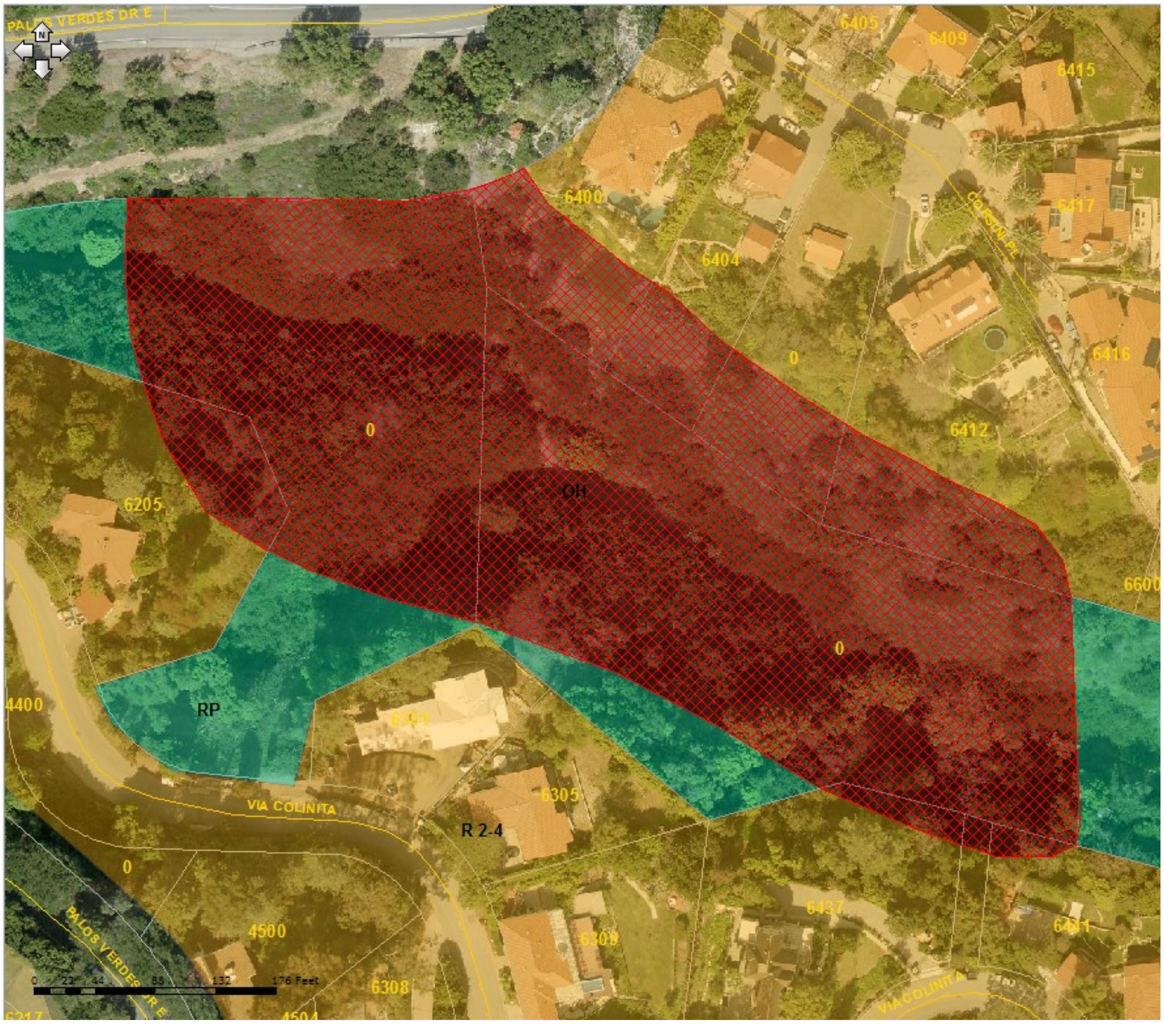
Land Use Designation Change from Hazard to Hillside



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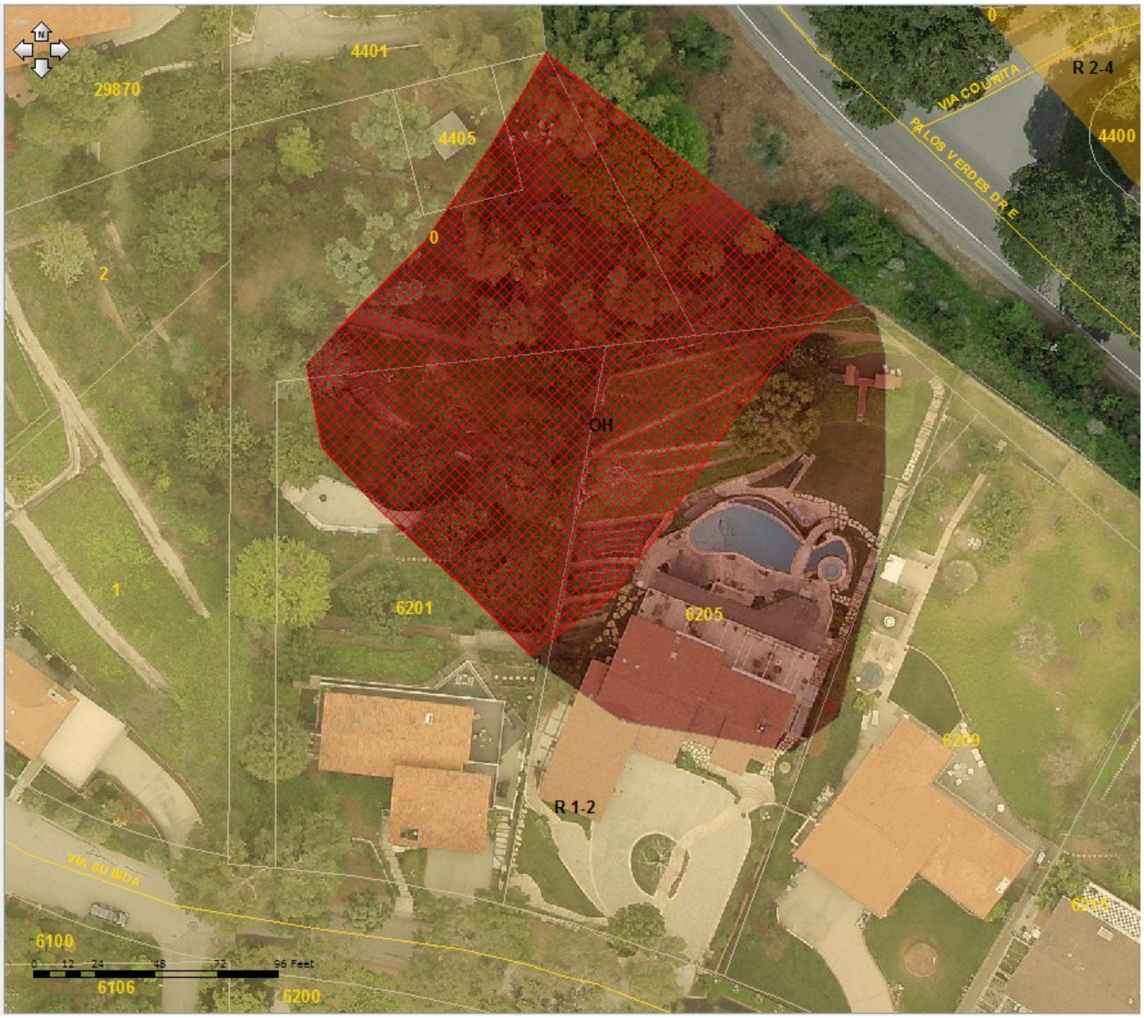
- Corsini Place (6400, 6404, 6412, APN 7561-007-004)
- APNs 7561-008-900, 7561-007-900
- Via Colinita (6205, 6437, 6441)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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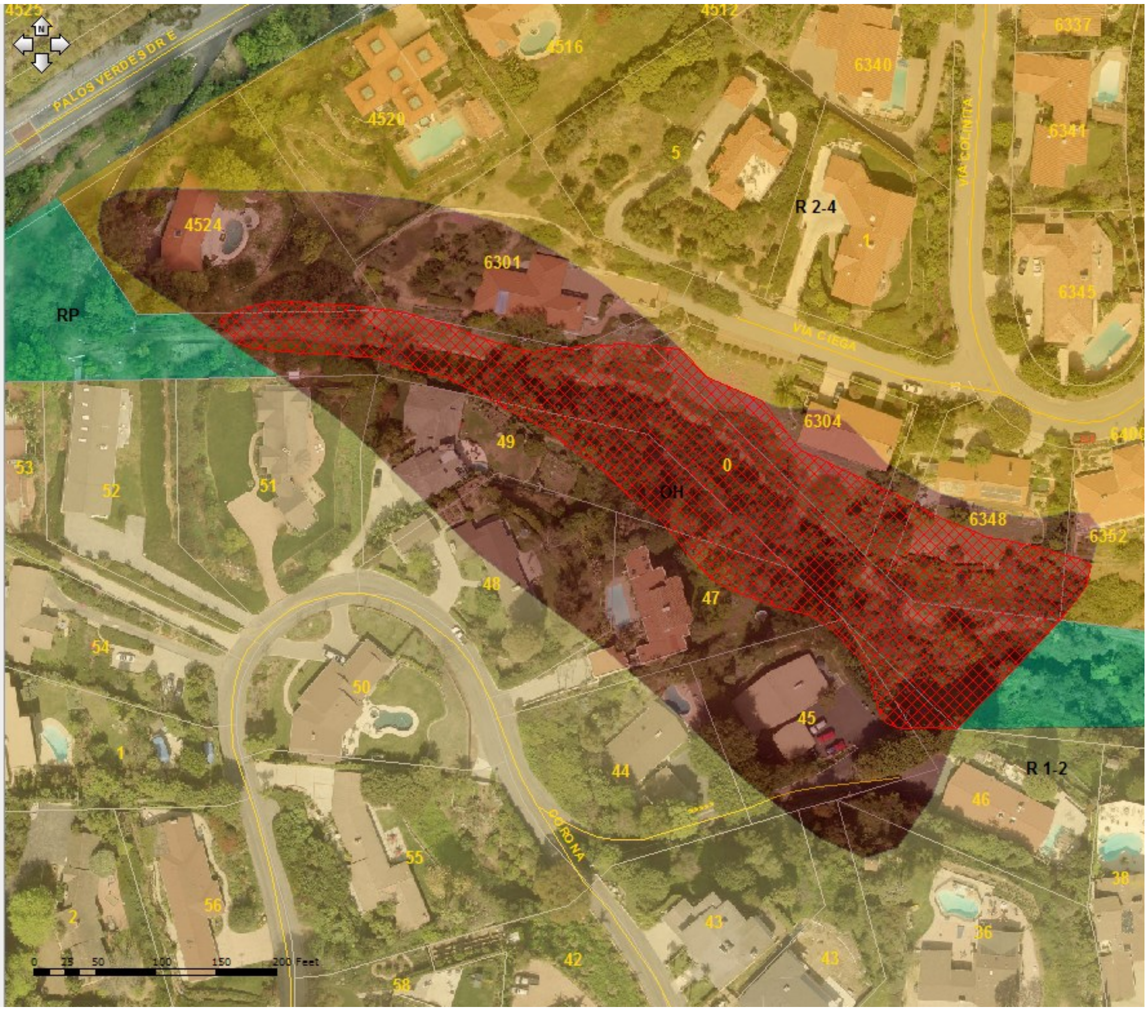
- APN 7566-005-900
- Palos Verdes Drive East (4405)
- Via Subida (6201, 6205, 6209)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside



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- Via Ciega (6301, 6304, 6348, 6352)
- Palos Verdes Drive East (4524)
- Avenida Corona (51, 49, 48, 47, 44, 45, 46, 43, 36)
- APN 7561-010-900

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

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- Ganado Drive (30433, 30443, 30451, 30459, 30659, 30667)
- APNs 7558-001-091, 7567-008-012, 7558-001-901

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Land Use Designation Change from Hazard to Hillside

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- APN 7561-019-007
- Palos Verdes Drive East (30438, 6513, 6505, 6509)
- La Vista Verde (9, 11, 14, 15, 16, 17, 18, 19)
- Rue le Charlene (2431, 2435, 2439, 2445)
- Vista Mesa Drive (2737, 2741, 2747, 2753, 2761)
- Santa Luna Drive (30511, 30517, 30523, 30529)

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- Tarapaca Road (30763, 30759, 30751, 30745, 30939, 30731, 30727, 30721)
- APN 7561-039-002, 7561-038-017
- Azores Place (2718, 2722, 2726)
- Calle Aventura (2742, 2746, 2756, 2762, 2770, 2778, 2808, 2814, 2820, 2826, 2838)
- Palos Verdes Drive East (30648, 30676, 30678)
- San Ramon Drive (2763, 2727, 2709, 2703, 2701, 2700 1/2, APN 7561-040-025)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Floweridge Drive (31339)
- Seaclaire Drive (3358, 3352, 3344, 3338, 3332, 3318, 3310, 3304, 3250, 3242, 3234, 3228, 3220, 3212, 3204, 3203, 3209)
- Ganado Drive (31297, 31287, 31281, 31273, 31267, 31259, 31253, 31245)
- Eaglehaven Drive (31310, 31312, 31314)
- Seaglen Drive (3586, 3589, 3579)
- APNs 7564-026-027, 7564-026-025

Hazard Boundary Line Adjustments

Existing Hazard Land Use area to remain.

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be removed. The hatched red areas will remain as Hazard. Affected properties are as follows:

- Trump National Golf Club (1 Trump National Drive)
- Emerald View Drive (31909, 31917)
- APN 7564-024-901

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Oceanaire Drive (62, 61, 59, 57, 55, 53, 51, 49, 47, 45, 43, 41, 39, 37, 35)
- Ambersky Drive (11, 15, 17, 19)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Valley View Road (5206, 5220, 5234, 5248, 5306, 5318, 5326, 5340, 5354, 5366, 5380, 5392, 5408,
- APNs 7581-031-033, 7581-031-032

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Burrell Lane (1, 2, 4)
- APNs 7581-032-902, 7581-032-901

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- San Clemente Drive (24, 25, 26, 28, 30, 32, 34, 31, 29, 27)
- Santa Catalina Drive (15, 24, 26, 28)
- APNs 7581-033-118, 7581-033-118

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Crestridge Road (5701, 5721, 5741, 5801)
- APNs 7589-013-801, 7589-013-800, 7589-013-907

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Blackhorse Road (4804, 4808, 4812, 4820)
- Falcon Rock Place (4802, 4814, 4820)
- Diamondhead Lane (26832, 26840, 26904, 27134, 27138, 27139, 27137)
- Silver Meadow Land (27060, 27064, 27067, 27059, 27051, 27043, 27037)
- Browndeer Lane (5045, 5043, 5003, 4967, 4961, 4955, 4947, 4939, 4933, 4923, 4917, 4911, 4903, 4879, 4869, 4861, 4849, 4841, 4833, 4829, 4823)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Via Campesina (3018, 3292, 3294, 3296, 3298, 3292, 3294, 3296, 3298, 3300)
- Barkstone Drive (26113, 26109, 26105, 26103)
- Grayslake Road (26226, 26302, 26316, 26322, 26326, 26332, 26338, 26402, 26410, 26416, 26422, 26430)
- APNs 7546-024-011, 7546-022-008, 7578-002-010, 7578-002-009, 7578-003-001, 7578-003-007
- Montemalaga Drive (5621)
- Basswood Avenue (26415, 26409, 26403, 26347, 26341, 26335, 26329, 26321, 26315, 26307, 26107, 26101, 26102, 26104, 26543, 26535)
- Menominee Place (26603, 26600, 26602, 26606, 26614, 26620, 26704, 26710, 26714, 26730, 26744)
- Mazur Drive (26505, 26502, 26504)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Verde Ridge Road (6982, 6976, 6972, 6966, 6960, 6954, 6948, 6942, 6938, 6932, 6916, 6912, 6866, 6860, 6852, 6836)
- Faircove Drive (6847, 6851, 6850, 6844)
- Avenida Magnifica (29901, 29902)
- Avenida Refinida (29902, 29901)
- Crest Road (6857, 6871, 6883, 6895, 6903, 6913, 6921)
- Avenida Anillo (29903, 29902, 29906)
- APNs 7583-039-900, 7583-022-013

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- APNs 7581-030-011
- Ocean Terrace Drive (5822, 5832, 5842, 5850, 5858, 5866, 5876, 5910, 5918, 5928, 5936, 5946, 5958, 6000, 6002, 6010, 6224, 6236, 6246, 6258, 6264, 6270)
- Pacifica Drive (32024, 32032, 32040, 32050, 32058, 32064)
- Sea Ridge Circle (32033)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Chartres Drive (6356, 6364, 6374, 6380, 6390, 6494, 6412, 6420)
- Rhone Drive (30538, 30542, 30545, 30539, 30533)
- Cartier Drive (30930, 30936, 30940, 30937)
- Marne Drive (31018, 31120)
- Lebec Place (6507, 6501, 6502, 6510)
- APNs 7581-018-036, 7573-020-027

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- APNs 7588-023-016, 7588-024-039, 7588-024-029, 7588-024-034
- Via Del Mar (7095, 7085, 7075, 7065, 7055, 7080, 7070, 7060, 7050, 7040)
- Via La Cresta (30960, 30950, 30939, 30925, 30909, 30900)

Hazard Boundary Line Adjustments &

Land Use Designation Change from Hazard to Hillside

Proposed new Hillside Land Use area

Existing Hazard Land Use area to be removed

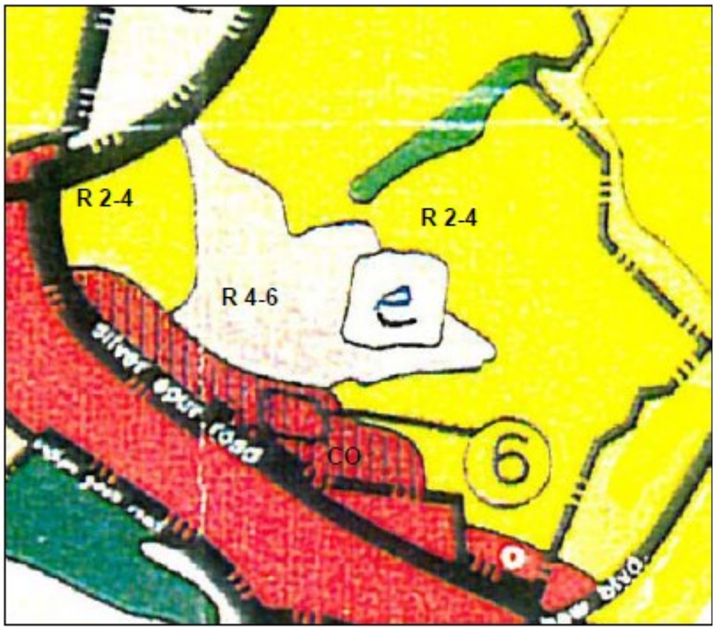
The existing Hazard areas shown in solid red will be reduced to the hatched red areas. The hatched red areas will have a new land use destination of Hillside instead of Hazard. Affected properties are as follows:

- Marne Drive (31303, 31311, 31407, 31415, 31423)
- APNs 7573-020-027, 7573-020-028, 7573-020-014, 7573-019-039, 7573-019-040, 7573-019-042)
- Albero Court (11, 19, 23, 29, 51, 54, 55)
- Hawthorne Blvd (30840)

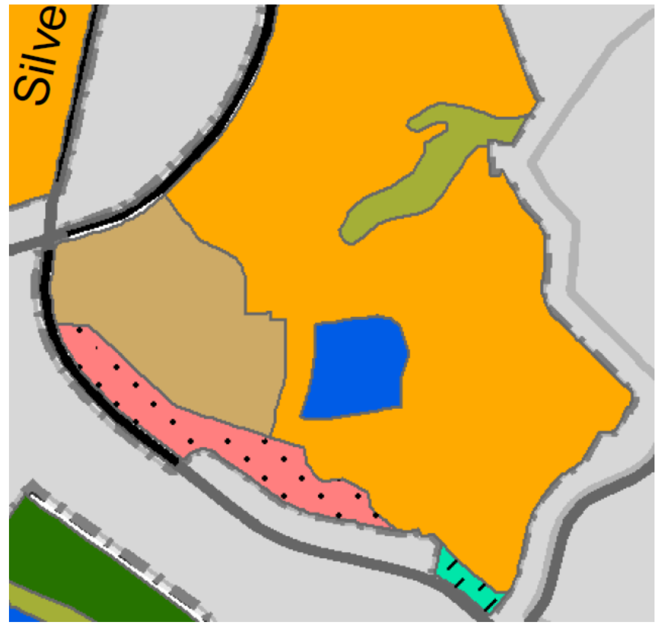
Land Use Boundary Adjustment Between R2-4 and R4-6

for Residential Properties near Hawthorne Blvd. and Silver Spur Intersection

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



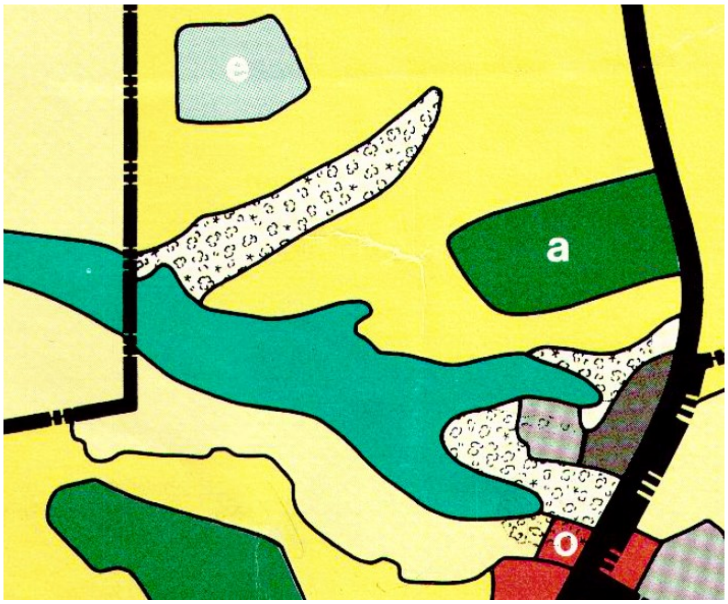
[PC Approved 5/10/11]

There are two separate existing land uses (R2-4 and R4-6) and zoning designations (RS-4 and RS-5) for a portion of a fully developed residential neighborhood located east of the Hawthorne Blvd. and Silver Spur Rd. intersection. The boundary between the two separate land uses were clarified to match the Zoning Map. Affected properties are as follows:

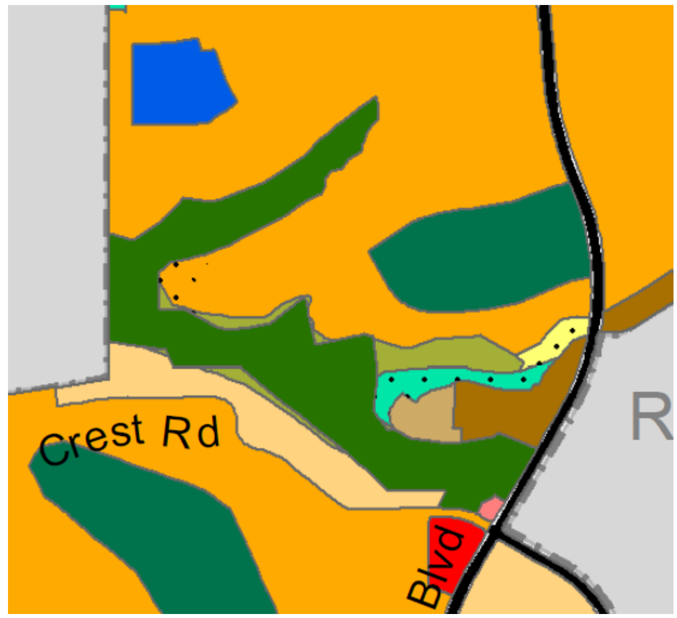
- Browndeer Lane - 5040, 5046
- Fawnskin Drive - 27416, 27426, 27434, 27440, 27446, 27450, 27502, 27508, 27514, 27520, 27600
- Flaming Arrow Drive - 27615, 27621, 27627, 27633, 27639, 27645, 27653, 27659, 27667, 27673, 27677
- Longhill Drive - 27507, 27513, 27519, 27527, 27533, 27539, 27715, 27721, 27725, 27731, 27737, 27743, 27755, 27761, 27767, 27773, 27779, 27785, 27793, 27803, 27809, 27817, 27823, 27829, 27837, 27838, 27843, 27844, 27849, 27850, 27856
- Silver Arrow Drive - 5116, 5119, 5122, 5125, 5131, 5141, 5147, 5153, 5203, 5204, 5210, 5211, 5216, 5217, 5221, 5222, 5228, 5229, 5234, 5235, 5241, 5247, 5253, 5258, 5259, 5264, 5265, 5270, 5276, 5282
- Sunny Point Place - 5205, 5213, 5219, 5223, 5229, 5230, 5235, 5238, 5241,5242, 5245, 5244, 5246, 5248, 5250

Add Open Space Preserve to NCCP Areas

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 5/24/11]

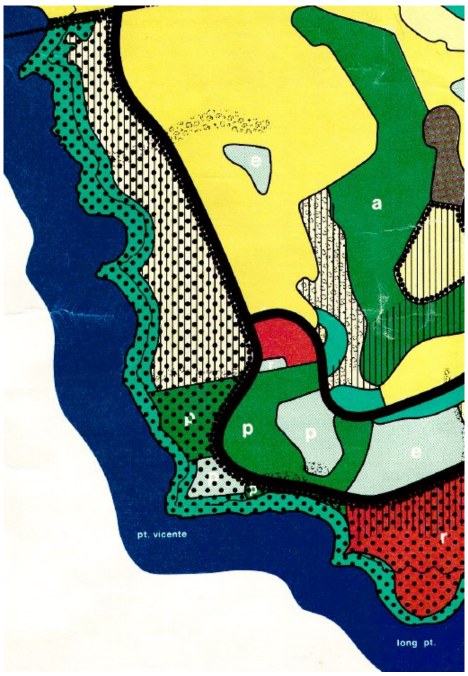
A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) in the NCCP areas of Lunada and Agua Armaga Canyons.

Add Open Space Preserve to NCCP Areas

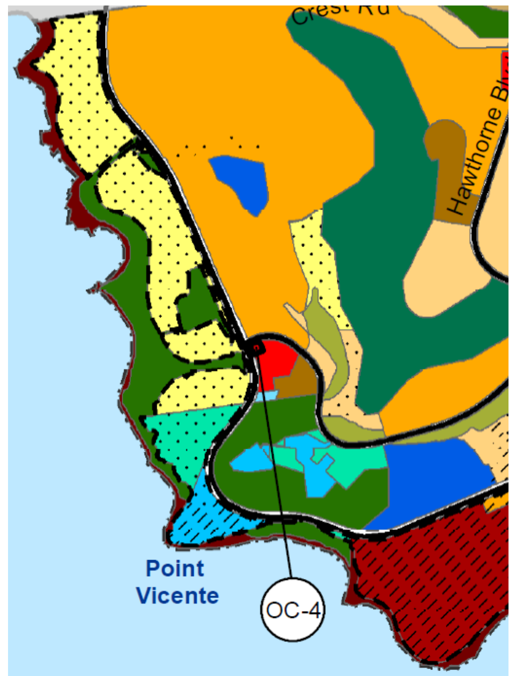
and

Boundary Line Adjustments for Pointe Vicente Park /Civic Center Site

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 5/24/11]

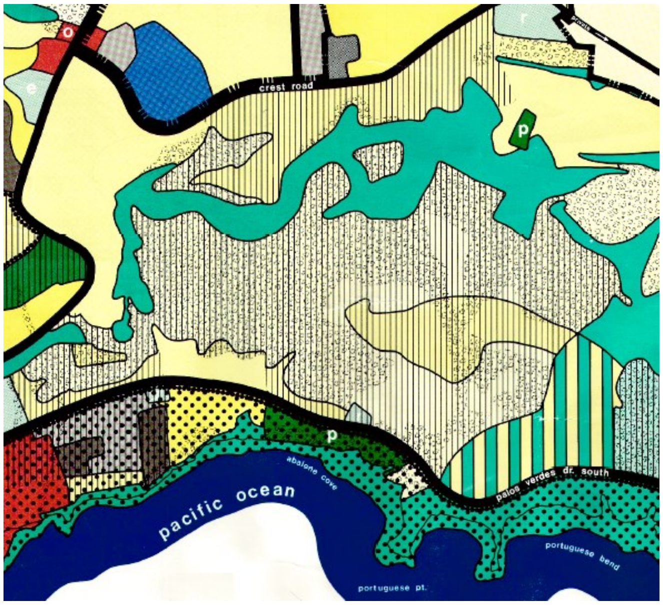
A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) is proposed to encompasses the NCCP areas in Ocean Front Estates residential development, portions of Lower and Upper Point Vicente and the Fishing Access.

[PC Approved 7/9/13]

The future use of the Point Vicente Park (Civic Center) site is not clear at this time. While the Program of Utilization (POU) (attached) for the site does identify an approximate 6 acre site for potential active recreation, the only reference to the location of the potential active recreational area is towards the northern portion of the site near the Villa Capri residential development, which is an area that the NCCP has identified as Preserve land. As the POU includes an active recreational component, and the exact location and potential use of that active recreational component have not been determined, Staff believes that it is best at this time to retain the existing General Plan's land use designation of Recreational-Passive over the entire site, with exception to those areas that are Institutional-Public and Open Space Preserve. Staff agrees with the Commission that this is an important issue that needs to be raised to the Council's attention when the Council reviews the General Plan Update and as such, will point this issue to their attention at that time.

Add Open Space Preserve to NCCP Areas

Existing 1975 General Plan Land Use Map



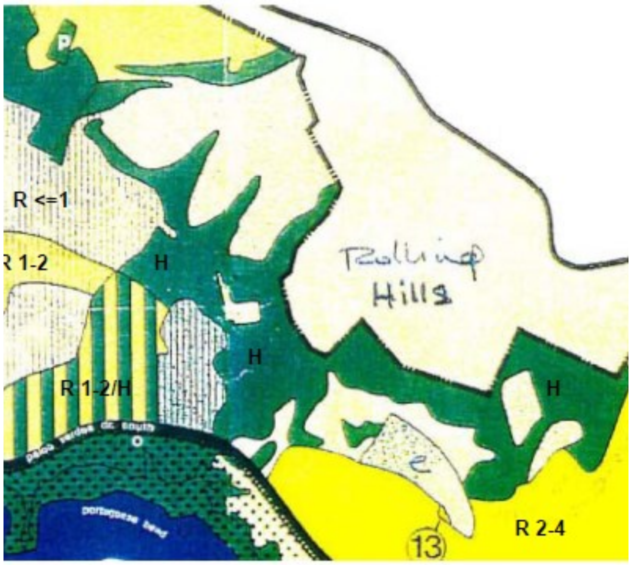
Proposed General Plan Land Use Map

[PC Approved 5/24/11]

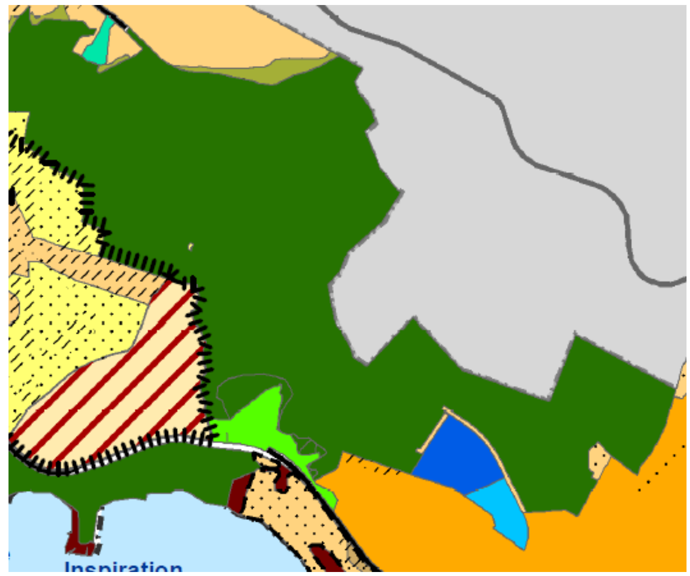
A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) is proposed to encompasses the NCCP areas near Barkentine Road, Filiorum and Del Cerro Park.

Add Open Space Preserve to NCCP Areas

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



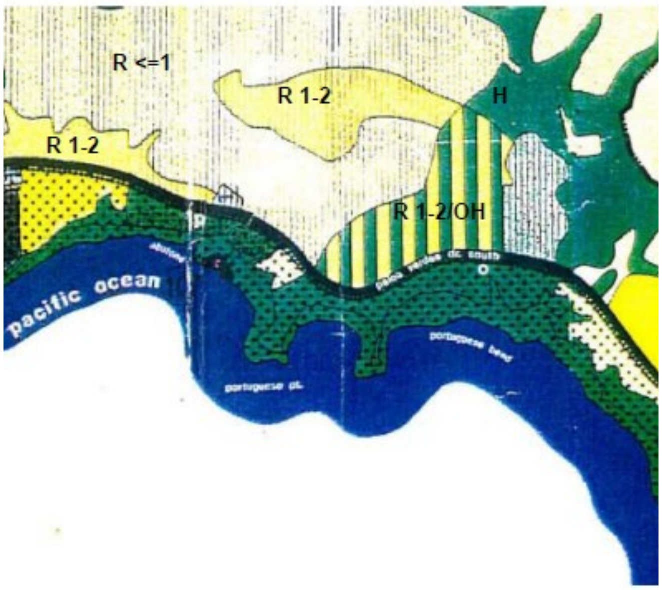
[PC Approved 5/24/11]

A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) is proposed to encompasses the NCCP areas near Potuguese Bend and Forrestal Drive.

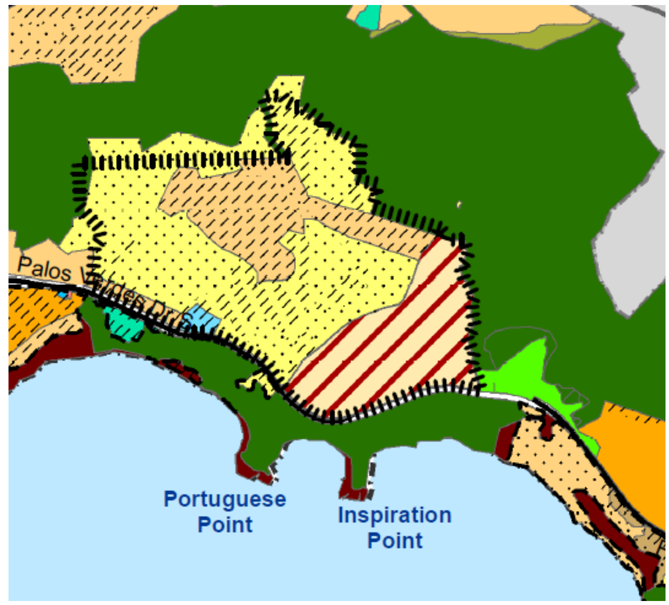
New Open Space Preserve in NCCP Areas

"Area P" (PC Approved 5/24/11)

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 5/24/11]

A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) is proposed to encompasses the NCCP areas in portions of Abalone Cove.

Add Open Space Preserve to NCCP Areas

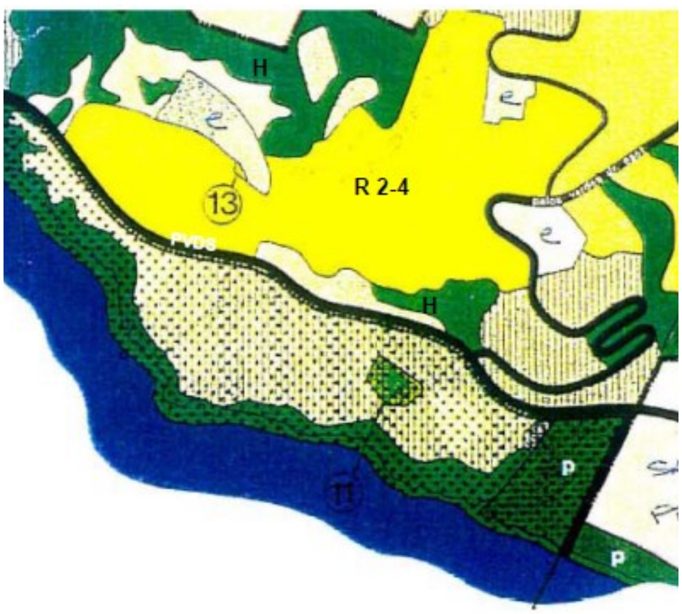
And

Change Institutional-Educational to Residential ≤ 1 du/ac
to a Former School District Property at Trump National Site

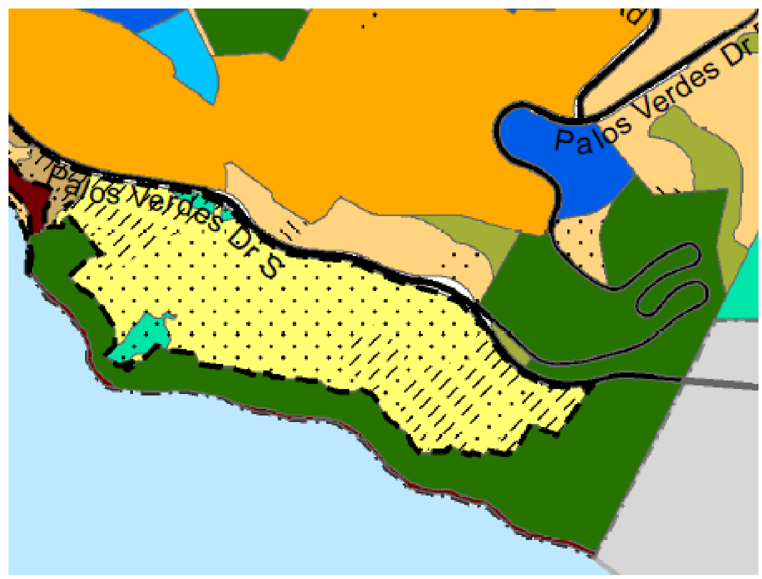
And

Change Residential ≤ 1 du/ac to Recreational-Passive for Public Parks at Trump

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 5/24/11 & 5/14/13]

A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) is proposed to encompasses the NCCP areas in Shoreline Park, Switchbacks, and Trump National Site (portions of Vesting Tentative Tract Map 50666 and Vesting Tract Map 50667)

[PC Approved 1/22/13]

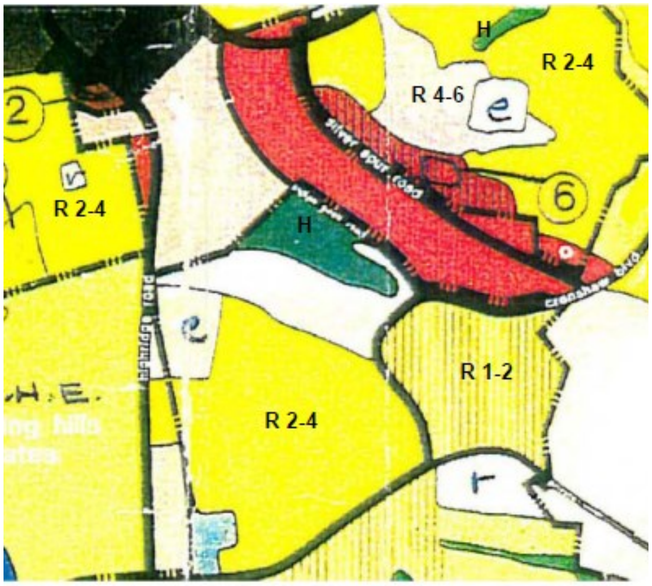
The dark green polygon shown in the Existing Map identifies a former School District property, which was transferred to and now part of Trump National Site. The land use designation is proposed to change from Institutional-Educational to Residential ≤1 du/ac

[PC Approved 11/13/12]

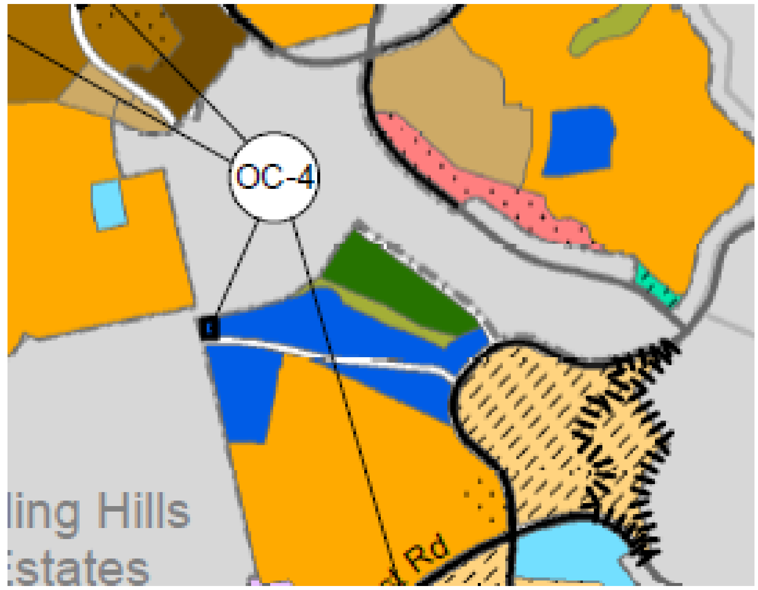
A land use change from Residential ≤1 du/ac to Recreational-Passive is proposed for Founder's Park, Marilyn Ryan Park and Vista Catalina Park on the Trump National site.

Add Open Space Preserve to NCCP Areas

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



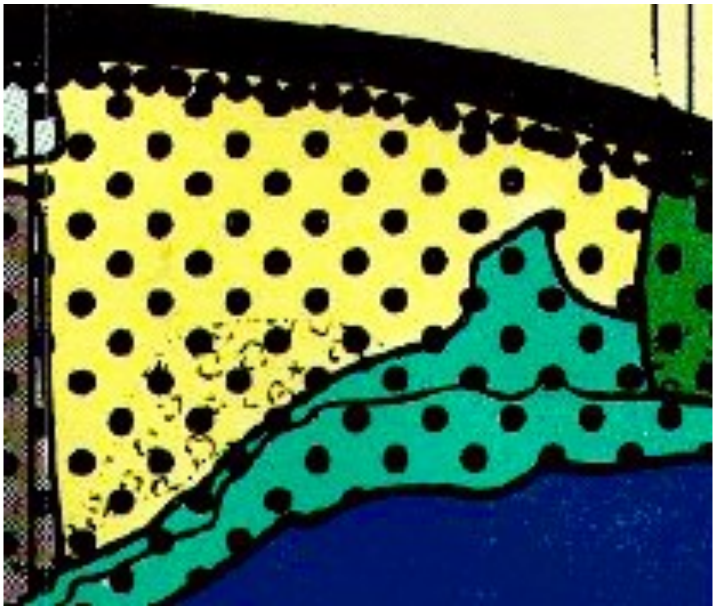
[PC Approved 5/24/11]

A new Open Space Preserve land use designation (shown in dark green in the Proposed Map) is proposed to encompasses the NCCP areas near Indian Peak Road.

Change Portions of R2-4 to R1-2 in

Coastal Subregion 4 (PC Approved 6/14/11)

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

[PC Approved 6/14/11]

A land use designation change from R2-4 to R1-2 is proposed to the properties located seaward of Seacove Drive for consistency with the existing Coastal Specific Plan and its associated land use map. Affected properties are as follows:

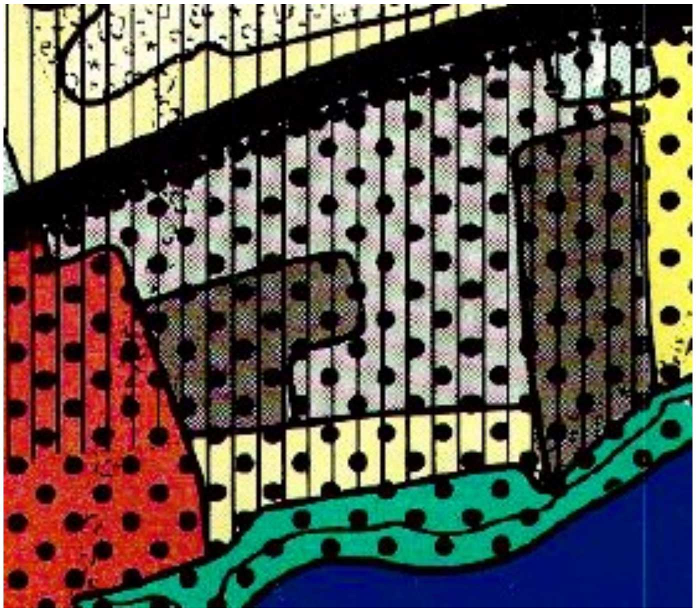
- Seacove Drive (8, 12, 16, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44);
- APN 7573-007-900;

Land Use Change for R6-12 and Portions of R4-6 to R2-4

& Portions of R6-12 to R2-4

Coastal Subregion 3 (PC Approved 7/12/11)

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

[PC Approved 7/12/11]

A land use designation change is proposed so all the properties landward of Seacove Drive within Coastal Subregion 3. This area covers existing multi-family condominium (Palos Verdes Bay Club) and apartment complexes (Porto Verde) located seaward of Palos Verdes Drive South, along Nantasket Drive and Sea Gate Drive. Affected properties are as follows:

- 32653 Seagate Drive (units 101-108, 201-208, PH A-PH H);
- 32679 Seagate Drive (units 101-108, 201-208, PH A-PH-H);
- 32709 Seagate Drive (units 101-108, 201-208, PH A-PH-H);
- 32735 Seagate Drive (units 101-108, 201-208, PH A-PH-H);
- 32759 Seagate Drive (units 101-108, 201-208, PH A-PH-H);
- 32859 Seagate Drive (units 101-108, 201-208, PH A-PH-H);
- 32622 Nantasket Drive (apt units 8-14, 54-63);
- 32636 Nantasket Drive (apt units 15-23, 64-73);
- 32640 Nantasket Drive (apt units 1-7, 44-53);
- 32650 Nantasket Drive (apt units 100-102, 31-43, 86-99)
- 32658 Nantasket Drive (apt units 24-26, 74-79)
- 32664 Nantasket Drive (apt units 27-30, 80-85)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

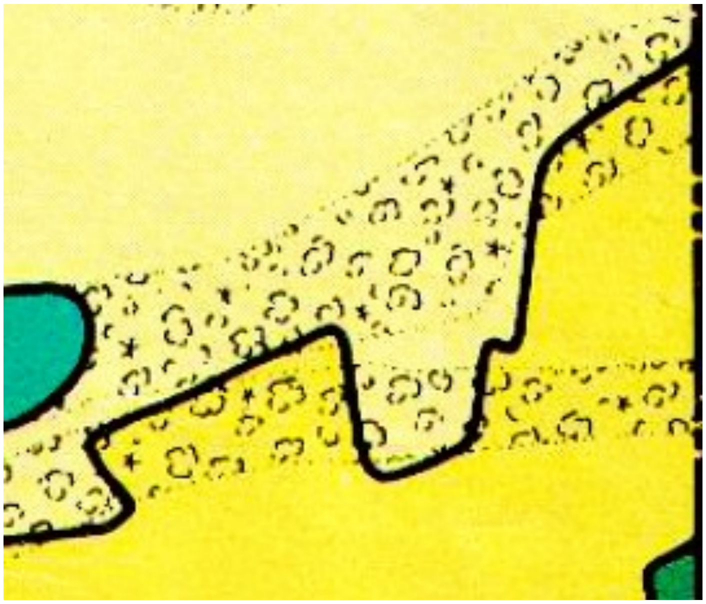
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

- Miraleste Drive (4501, 30417, 30419, 30421, 30423)
- Avenida Corona (36, 38, 40, 41, 46)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

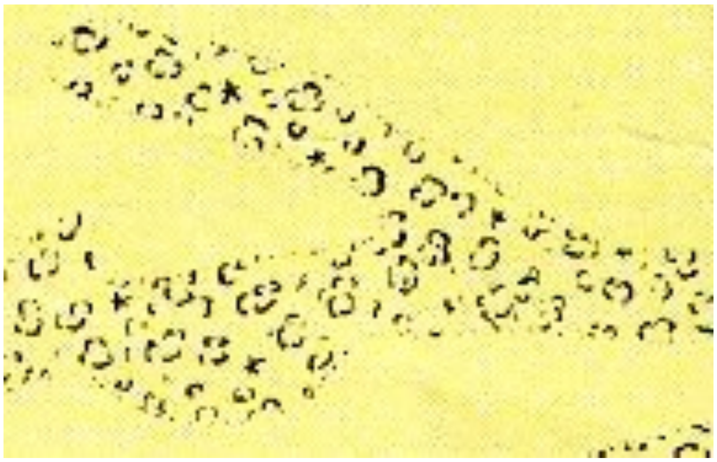
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

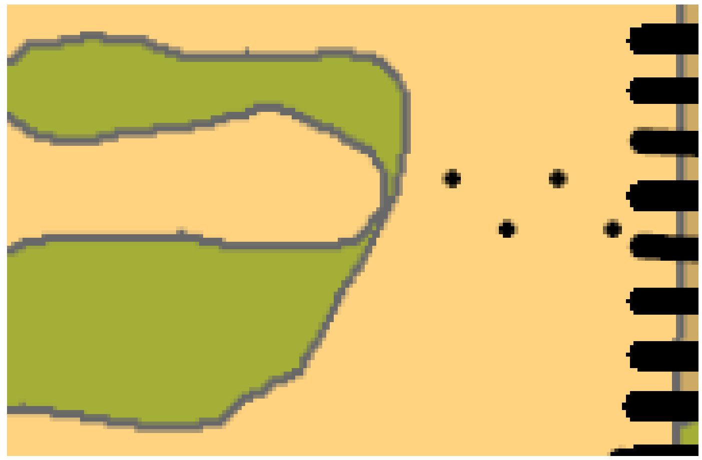
- Atford (28722, 28723, 28728, 28729)
- Sparta (2266, 2278, 2286, 2300, 2310)
- Colt (2560, 2562, 2564, 2566, 2568, 2570, 2572, 2612, 2616, 2816)
- Via de Anzar (6425, 6441, 6445, 6447)
- Lorraine (4001, 4005)
- Nancy (6533, 6537, 6541, 6545)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

- Rockinghorse Road (98, 100, 102, 104, 106, 108)
- Colt (2302)
- APN 7556-017-023

Add Natural Overlay District

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

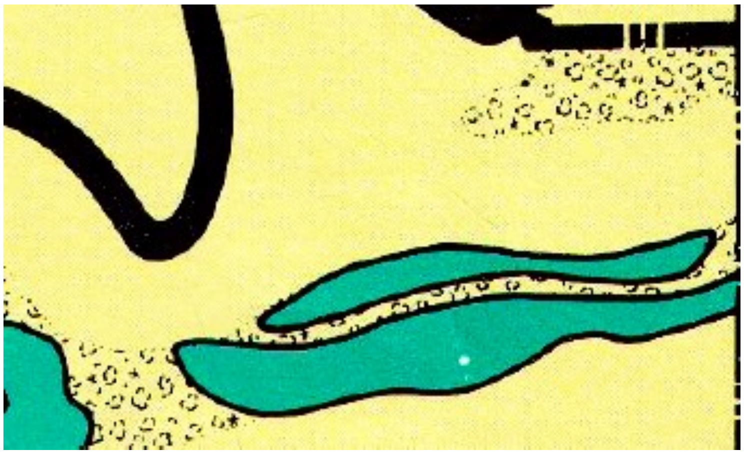
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

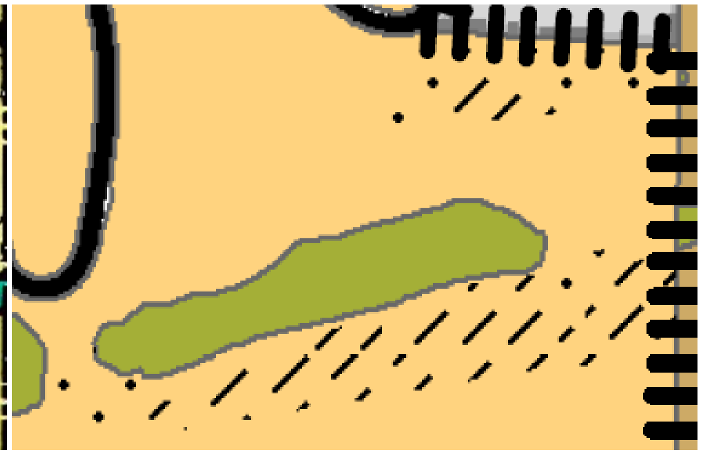
- Palos Verdes Drive West (30502, 30506)
- Rue Langlois (30503, 30517)
- Rue La Fleur (7205, 7207, 7213, 7221, 7227, 7233, 7239, 7245, 7251, 7259, 7265, 7271, 7277, 7285)
- Via Victoria (30413, 30417, 30429, 30435, 30443, 30451, 30469)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



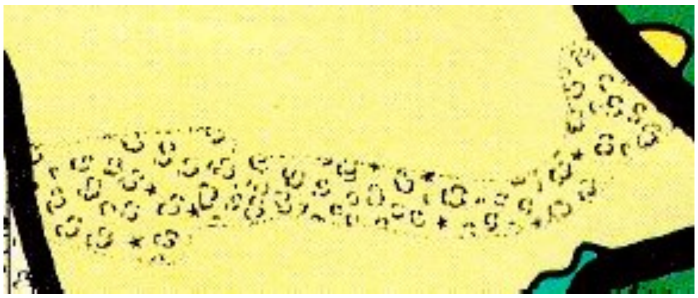
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

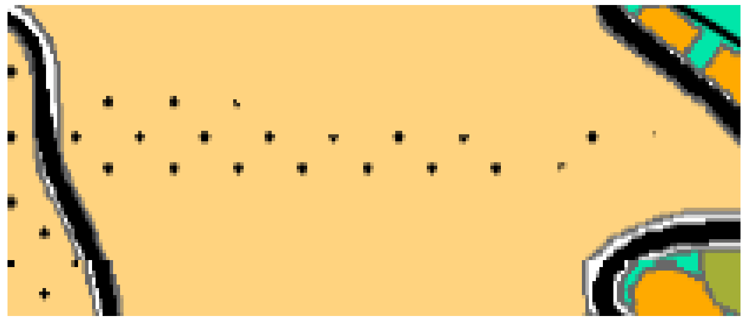
- Sunnyside Ridge Road (2202, 2203, 2248, 2256, 2315, 2321, 2331, 2343, 2407, 2417, 2437, 2443)
- Stirrup Lane (4, 6)
- PVDE (27752, 27754, 27756, 27762, 27772, 28136, 28150)
- Rockinghorse Rd (49½, 49¾, 51, 53)
- APN 7556-011-016

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 12/13/11]

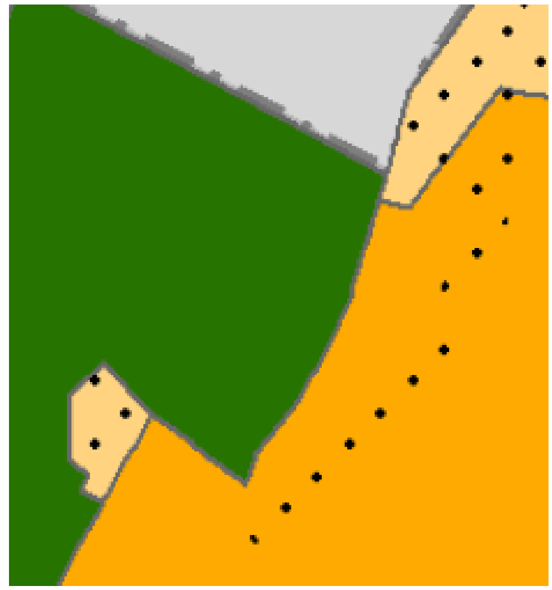
Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

- Crownview Drive (3358, 3360, 3362, 3367, 3368)
- Highpoint Rd (29680, 29681)
- Starline Dr (3564, 3565)
- Knoll View Dr (29805, 29813, 29815, 29816, 29821, 29823, 29975, 30015, 30023, 30031, 30033, 30043, 30047, 30048)
- Grandpoint Lane (29801, 29802, 29816, 29820, 29831)
- Via Frascati (4321, 4325, 4329, 4333)
- PVDE (4105, 4201)
- APN 7566-012-028

Add Natural Overlay District

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map



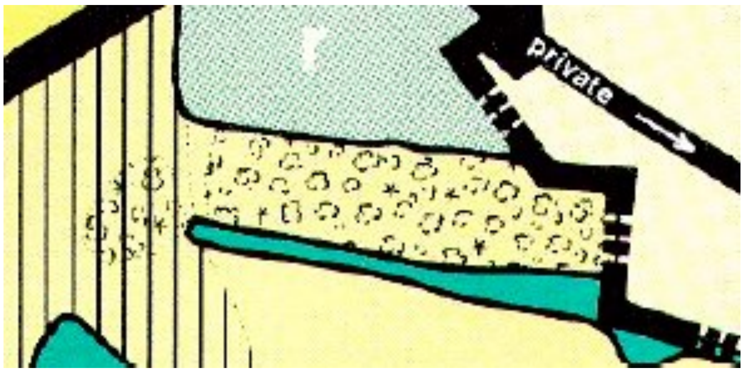
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

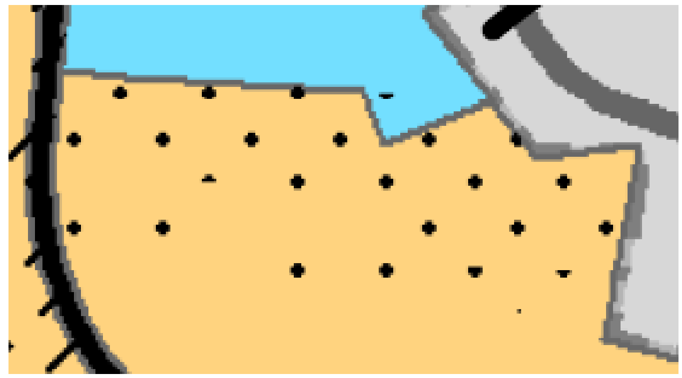
- Coolheights Drive (3729, 3778, 3787)
- Bendigo (3574, 3575, 3577)
- Ganado (30411, 30414, 30419, 30427, 30433, 30443, 30451, 30459, 30467, 30470, 30645, 30651, 30659, 30667, 30679, 30687, 30695)
- Greve (3662, 3663, 3666, 3667)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



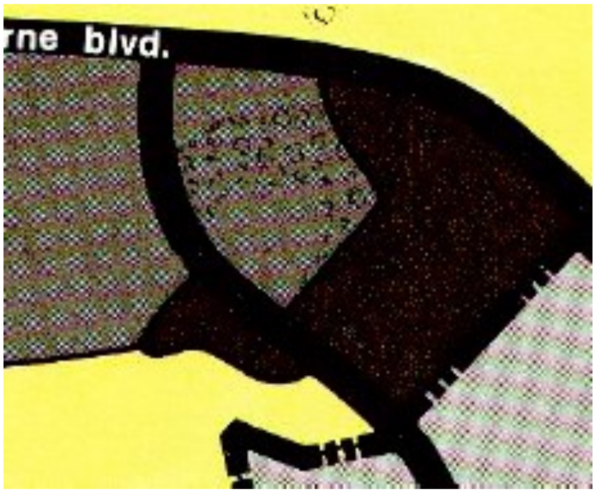
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

- Crest Rd (5300)
- Valley View Rd (5206, 5207, 5219, 5235, 5249, 5303, 5315, 5327, 5341, 5355, 5367, 5379, 5391, 5405, 5417, 5431, 5445, 5453, 5485)
- Crestwind Dr (5, 7, 9, 11, 15, 17, 19, 21, 23)
- Oceanaire Dr (1, 2, 4)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

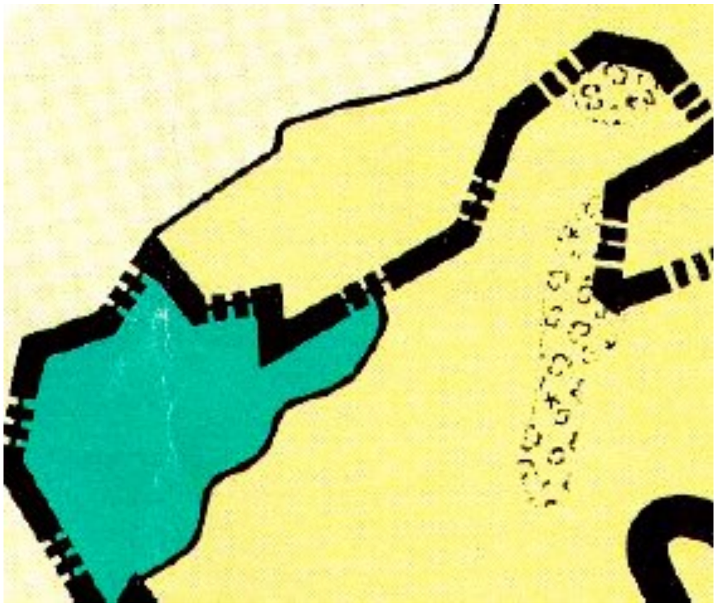
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

- Hilltop Cir (18, 20, 22, 24, 27, 29, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 46, 48, 50, 51, 53, 52, 54, 56, 58, 59, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 95, 97, 99, 101, 103, 105, 107)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

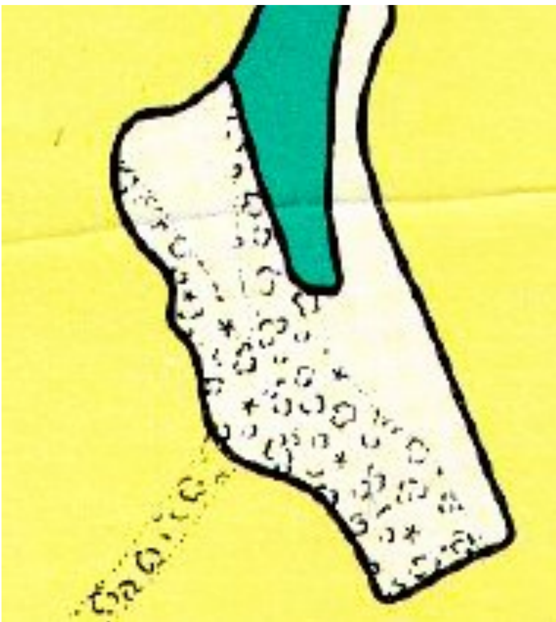
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

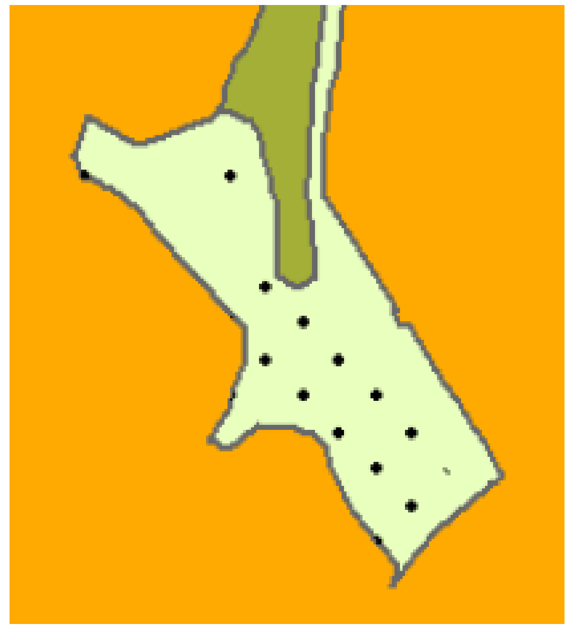
- Cayuse Ln (7, 9, 11, 13, 15, 17, 21, 52, 53, 55, 57)
- Headland Dr (75, 83, 88, 92)
- PVDE (28527)
- Bronco (1, 10)
- Chaparral Ln (3, 5, 7, 6, 4, 8)
- Martingale (3250, 3258)

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



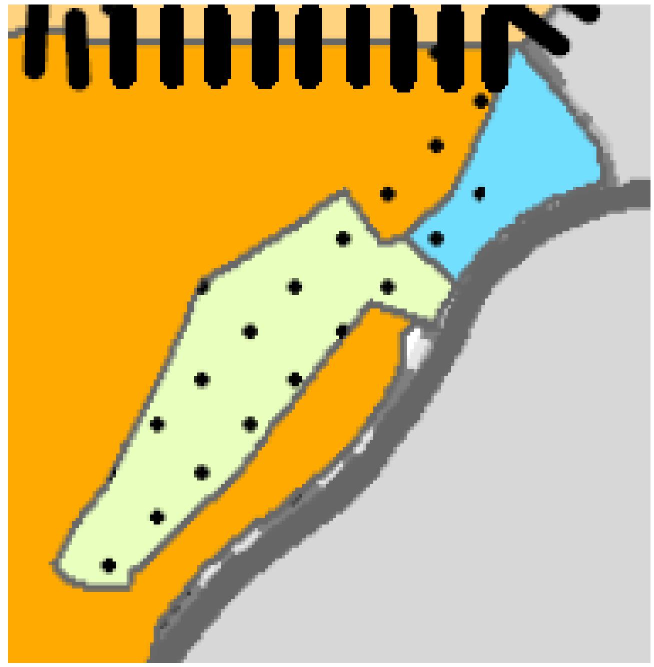
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected property include a vacant single-family residential lot, west of Basswood Ave (APNs 7580-003-007, 7578-003-004, 7578-003-006, 7578-003-001).

Add Natural Overlay District

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map



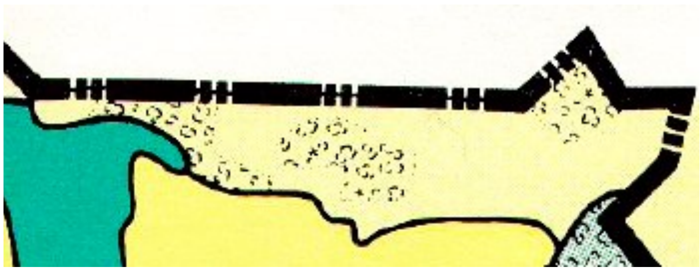
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

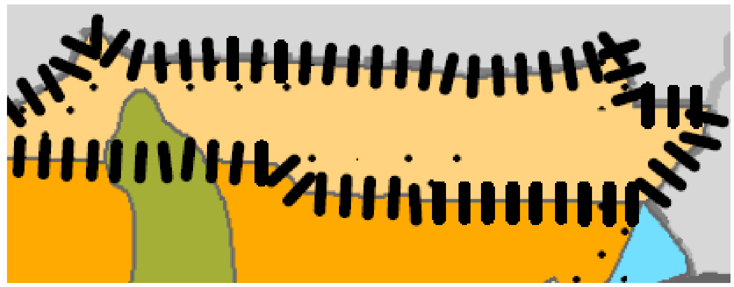
- Ironwood St (5325);
- APN 7546-008-021;
- APN 7546-008-025;

Add Natural Overlay District

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on to properties for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law. Affected properties are as follows:

- Via Campesina (2525, 3000, 3018, 3250, 3302, 3340, 3466, 3508)
- Yellow Brick Rd (1, 2, 3, 4, 6, 8)
- Rolling Ridge Rd (5241, 5383)

Land Use Change From Institutional-Educational to Institutional-Public for the City owned portion of Ladera Linda Community Center

And

Add Natural Overlay District to City-Owned Portion

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

[PC Approved 4/9/13]

A land use change from Institutional-Educational to Institutional-Public is proposed for the City-owned portion of Ladera Linda Community Center (shown in sky blue color in the Proposed Map). This area is improved with a former elementary school with rooms for rent, paddle tennis court, playground, basketball court, and hiking trails.

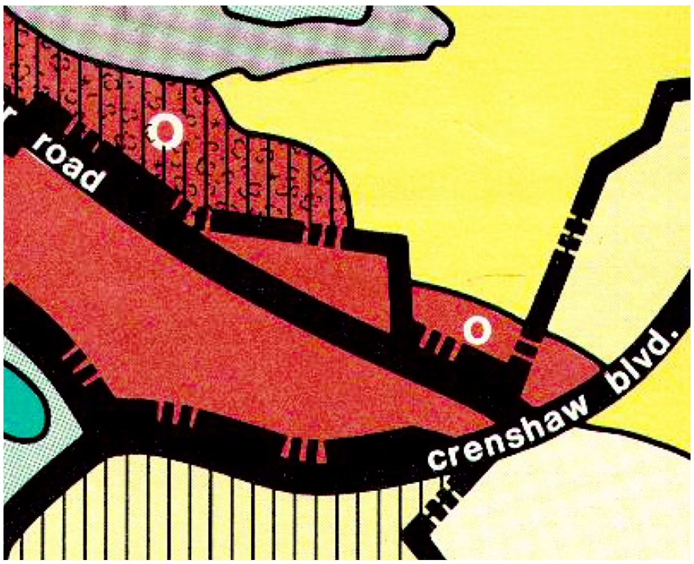
[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on the upper portion of the existing Ladera Linda Park shown in dark blue color on the Proposed General Plan Land Use Map (APN 7564-001-909), for consistency with the Zoning Map so that properties have a matching General Plan Land Use designation and a Zoning designation as required by law.

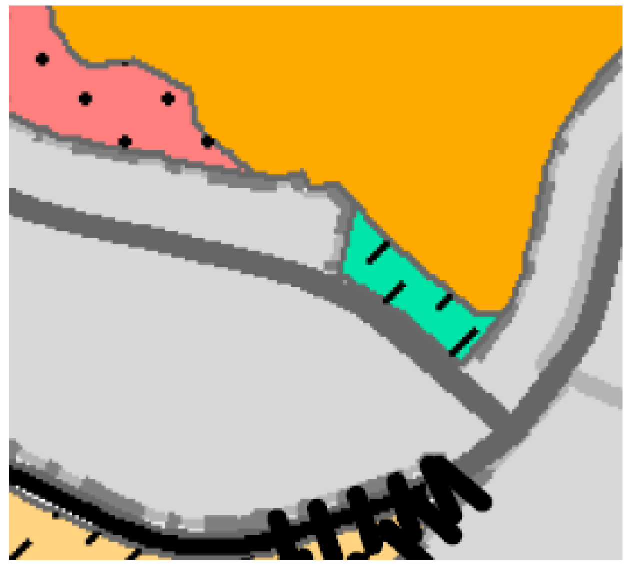
Land Use Change From Commercial to Recreational Passive

To Vacant Land on Silver Spur

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 4/24/12]

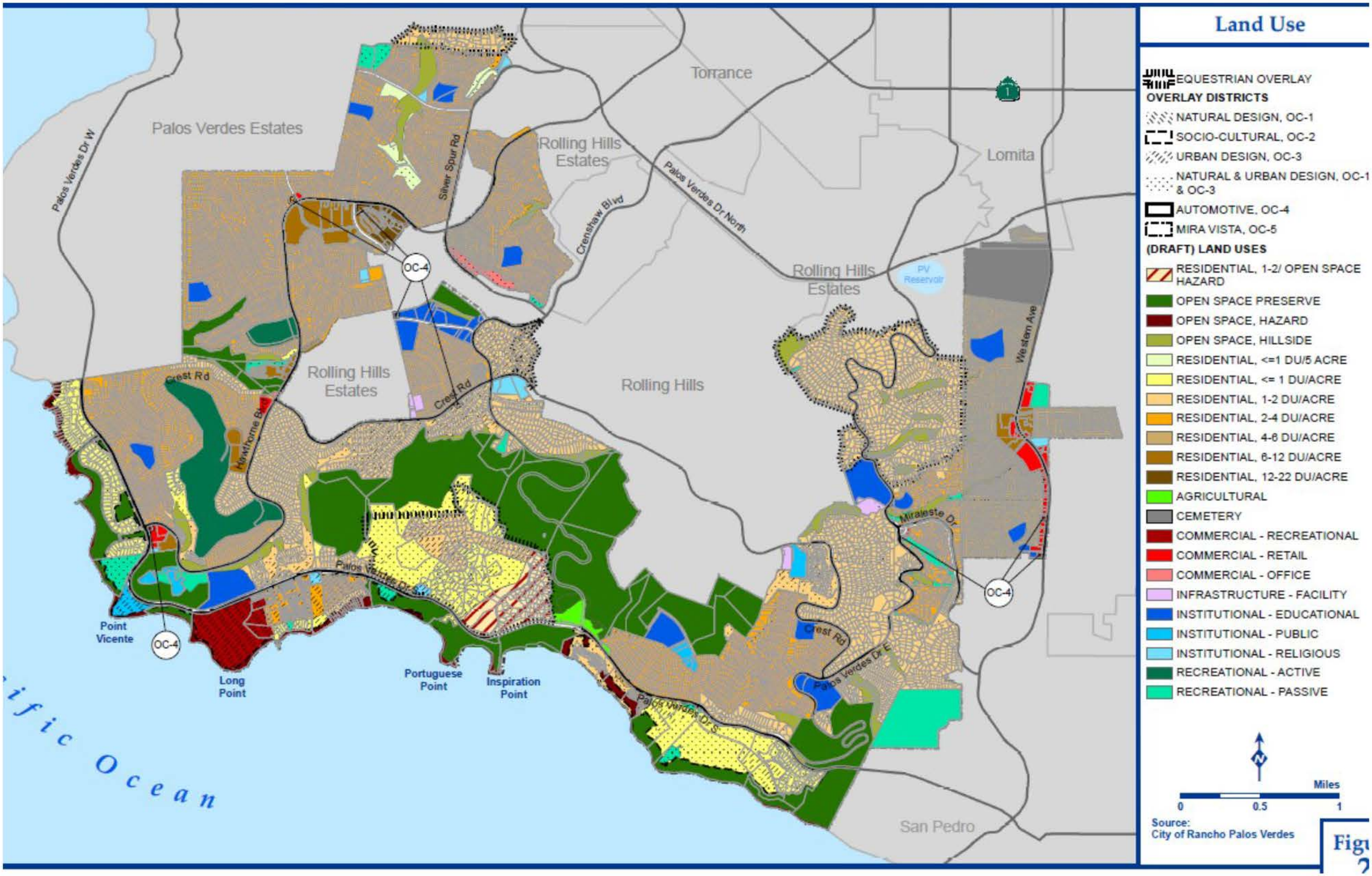
This vacant property (2.05 acre) is located on the north side of Silver Spur Road, at the intersection of Deep Valley Road was acquired in 1994. This City-owned property consists of a steep hill that slopes up from the street and there are no plans for commercial improvements on the property.

Remove all Overlay Districts in the City's NCCP Areas

[PC Approved 1/10/12]

All of the properties located in the City's NCCP will have a future land use designation of Open Space Preserve. The primary purpose of the Open Space Preserve designation is to preserve land in its natural, scenic and open space condition. All of the subject properties currently have an Urban, Socio/Cultural, and/or Natural Overlay Control District overlaid onto the properties. Since the Open Space Preserve areas are all within the City's NCCP, which will protect habitat and natural resources in these open space areas as development is not permitted, the development criteria of the Overlay Control Districts no longer apply. Additionally, the NCCP adopted by the City Council in 2004 required that all Overlay Control Districts over NCCP properties be removed from the General Plan Land Use Map. As such, removal of the Overlay Control Districts if proposed in all Open Space Preserve areas throughout the City. These areas are shown in dark green in the following Proposed Map.

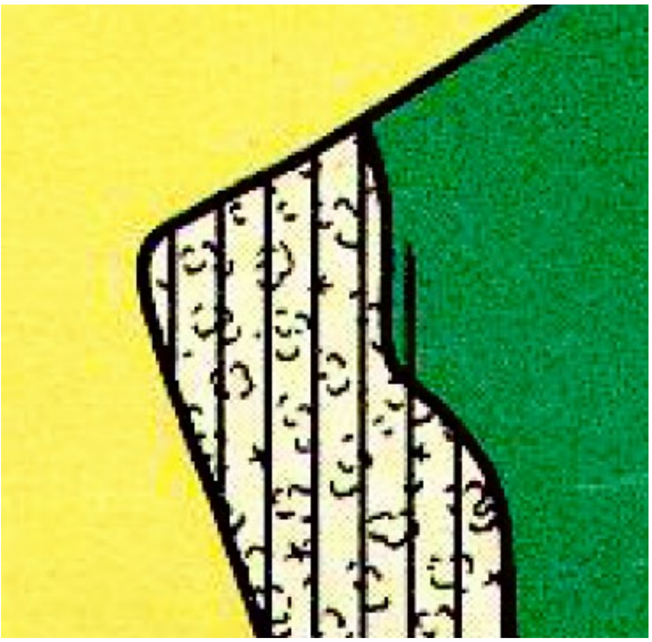
PROPOSED GENERAL PLAN LAND USE MAP



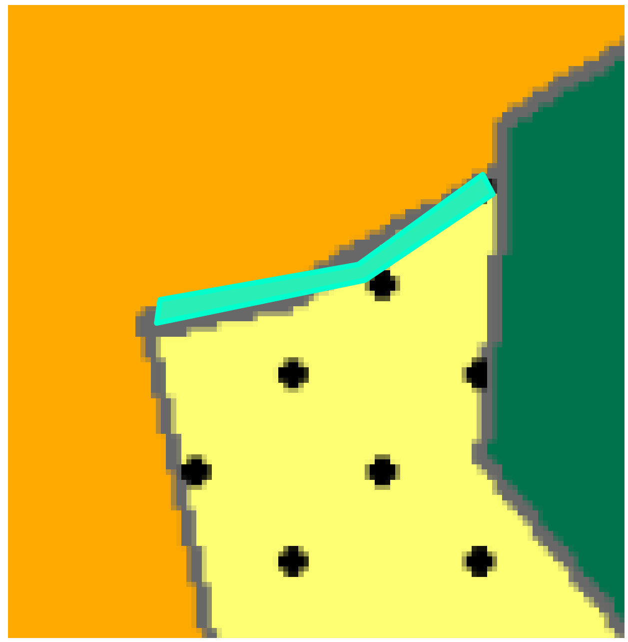
Change From Residential ≤1 du/ac to Recreational-Passive

For Pointe Vicente School Access Trail

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

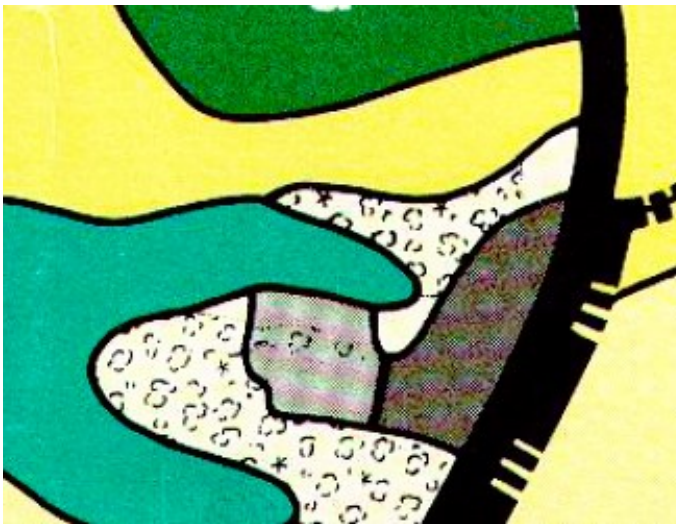


[PC Approved 4/24/12]

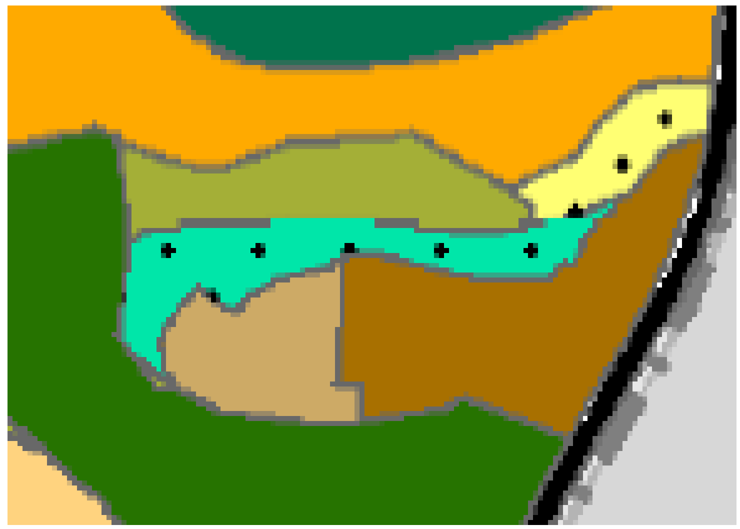
A land use designation change from Residential ≤1 du/ac to Recreational-Passive is proposed for the Pointe Vicente School Access Trail. This area is a 15' wide pedestrian pathway (0.12 acre) located between two residential properties (30621 & 30637) on Calle De Suenos exists as a separate City-owned parcel that makes up the upper portion of the Pointe Vicente School Access Trail (APN 7588-023-900).

Add Natural Overlay District and
Change From Residential ≤1 du/ac to Recreational-Passive
To Island View Vacant Land

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 12/13/11]

Currently, the General Plan Land Use Map shows Urban Overlay Control District (OC-1) on certain properties, while the Zoning Map shows OC-1 and OC-3 in the same areas. So as to be consistent, the proposed change is to simply add the Natural Overlay Control District (OC-3) on the vacant Island View canyon area located immediately west of Island View Drive and north of Ocean Crest Drive.

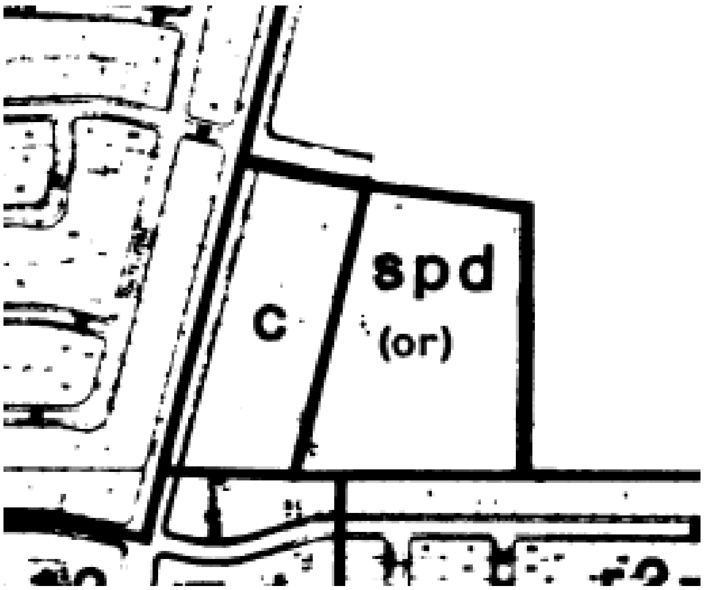
[PC Approved 4/24/12]

This property was acquired by the City in 2009 for open space purposes and there are no plans for residential improvements on the property (APN 7583-039-900). Therefore, a land use change is proposed from Residential ≤1 du/ac to Recreational-Passive.

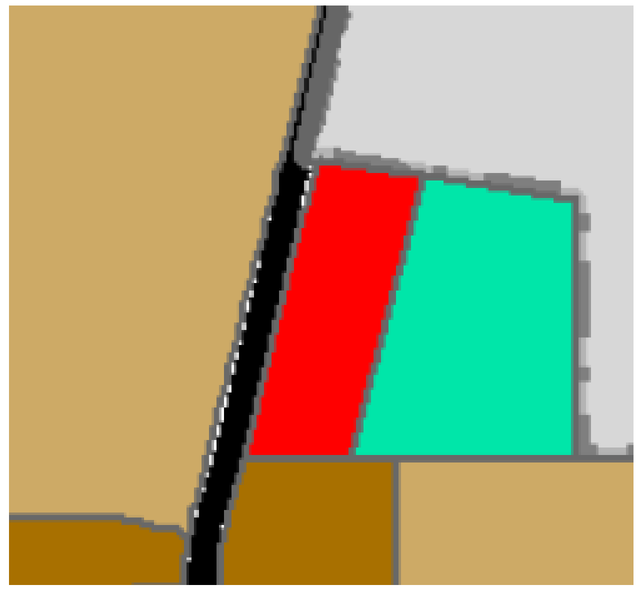
Change From Open Space Recreational to Recreational-Passive

for Eastview Park

Existing 1984 General Plan Land Use Designation



Proposed General Plan Land Use Map



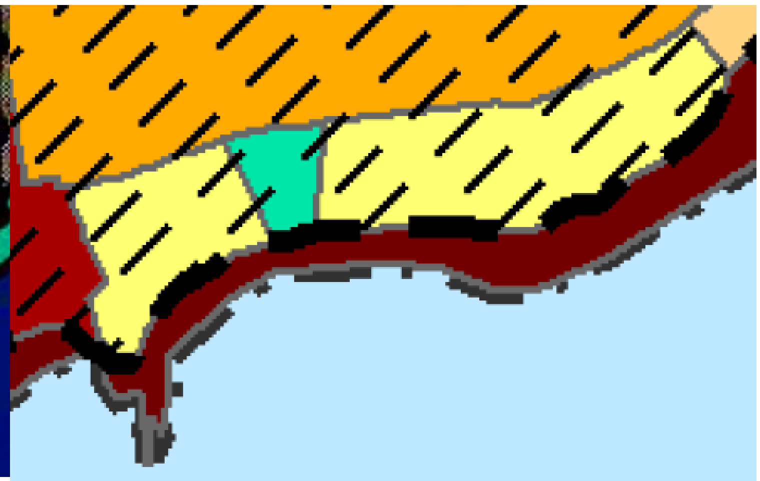
[PC Approved 10/9/12]

A land use change from Open Space Recreational to Recreational-Passive is proposed for a park that was annexed as part of Eastview in 1984. This property is improved with a children's playground, picnic facilities, jogging path, restroom, and parking lot.

Change From Residential 2-4 du/ac to Recreational Passive for Frank A Vanderlip Park

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

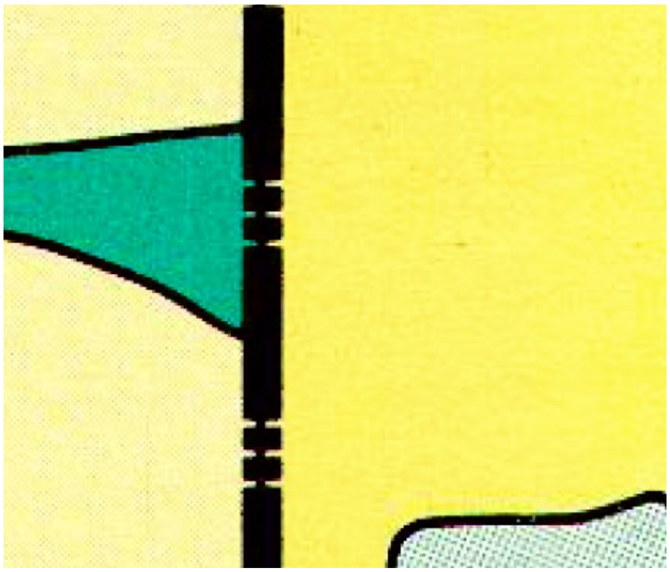


[PC Approved 11/13/12]

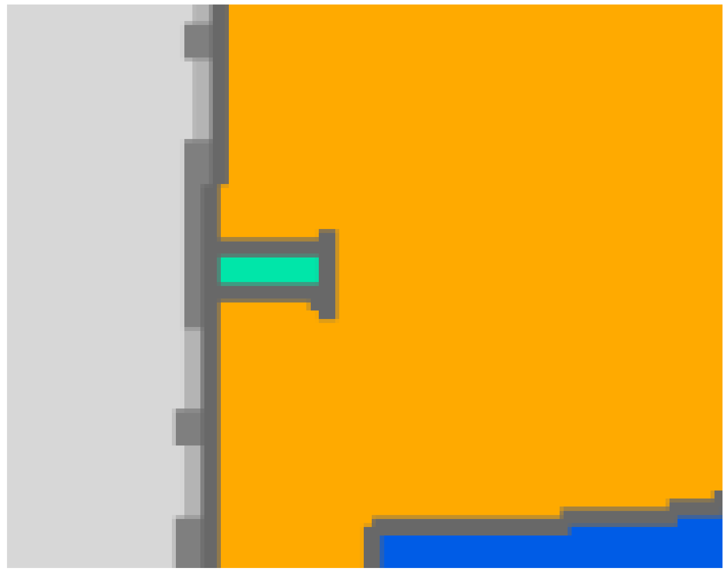
A land use change from Residential 2-4 du/ac to Recreational-Passive is proposed for Frank A Vanderlip Park. This property is located between 6520 & 6490 Seacove Drive and improved with benches, pedestrian paths, safety railing and landscaping.

Change From Residential 2-4 du/ac to Recreational Passive for Clovercliff Park (PC Approved 11/13/12)

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



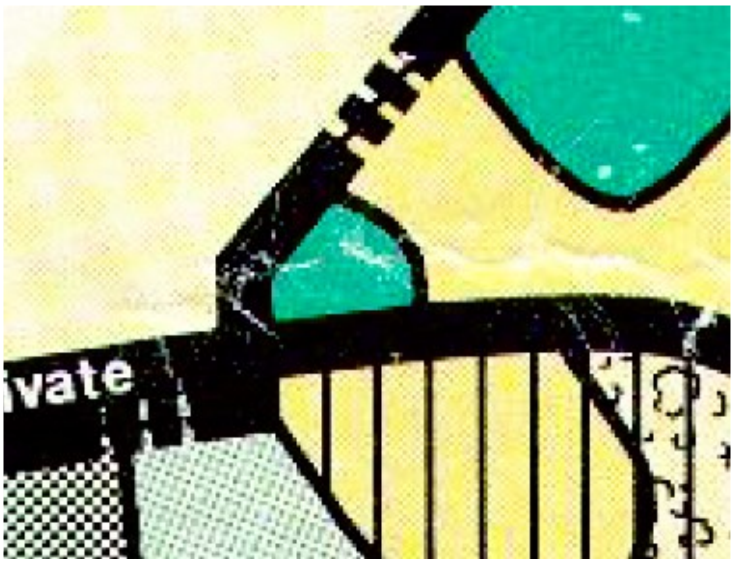
[PC Approved 11/13/12]

A land use change from Residential 2-4 du/ac to Recreational-Passive is proposed for Clovercliff Park. This pocket park is located between 28747 & 28805 Golden Meadow Drive and improved with a pedestrian path, landscaping and large rocks for seating.

Change From Residential 2-4 du/ac to Recreational Passive for

East Crest Road Parcel

Existing 1975 General Plan Land Use Map



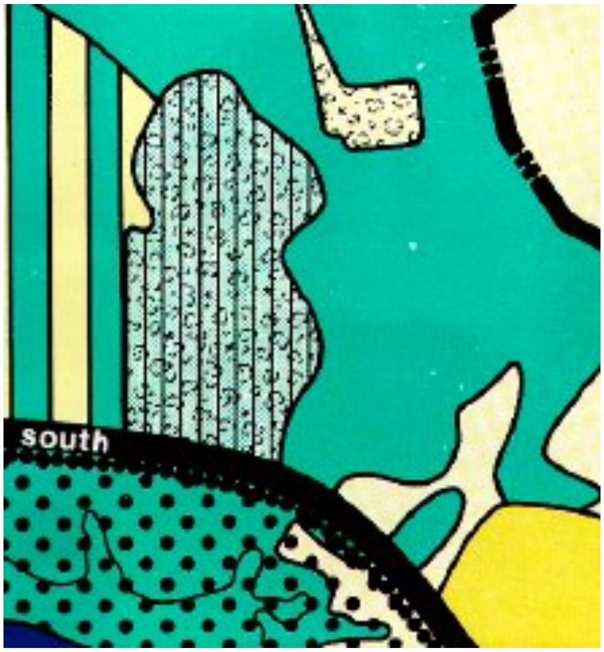
Proposed General Plan Land Use Map

[PC Approved 11/13/12]

A land use change from Residential 2-4 du/ac to Recreational-Passive is proposed for East Crest Road Parcel (shown in teal color on the Proposed Map). This lot is located adjacent to 3867 Crest Road and was originally acquired with intent to improve it as a trailhead.

Change From Agriculture, Hazard and Residential ≤ 1 du/ac to Recreational-Passive for Gateway Park

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map

[PC Approved 10/22/13]

A land use change from Agriculture, Hazard and Residential ≤1 du/ac to Recreational-Passive for Gateway Park. This property covers an area that was purposely excluded from the Preserve for public recreational use at the time the property was purchased by the City in 2005. While originally envisioned to be approximately 25 acres in size, the current Gateway Park area is approximately 17 acres in size. The City-owned areas abutting Gateway Park are proposed to be changed from Agricultural, Open Space Hazard, and Single-Family Residential (less than or equal to 1 dwelling unit/acre) to Open Space Preserve and be combined with the adjoining Preserve area.

Change From Residential ≤ 1 du/ac to Residential 1-2 for Portions of Tract 45667

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

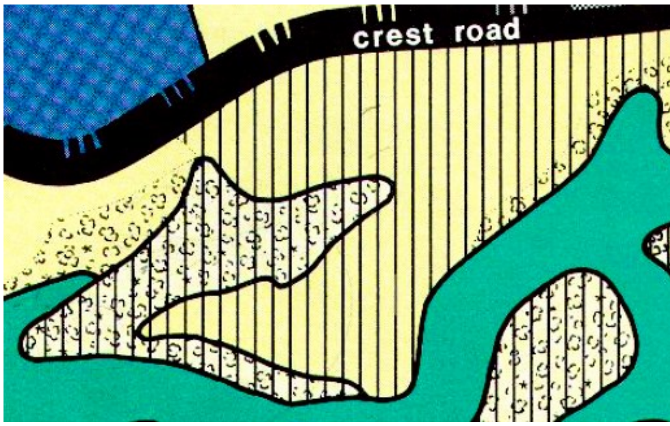
[PC Approved 12/11/12]

This residential tract including properties along Albero Court, Nuvola Court and Tramonto Drive was created in 1990, is 63.85 acres in size (including common open space), and developed with 43 detached single-family homes. This equates to a density of 1.48 dwelling units per acre (du/ac), wherein a land use designation of R1-2 (1 to 2 dwelling unit per acre) would be most appropriate and consistent with the development. However, on the General Plan Land Use Map, this tract is identified with two separate land use designations; R≤1 (less than or equal to 1 dwelling unit per acre) and R1-2 (one to two dwelling units per acre) for the remainder. Therefore, a land use change is proposed from Residential ≤1 du/ac to Residential 1-2 for portions of Tract 45667. Affected properties are as follows:

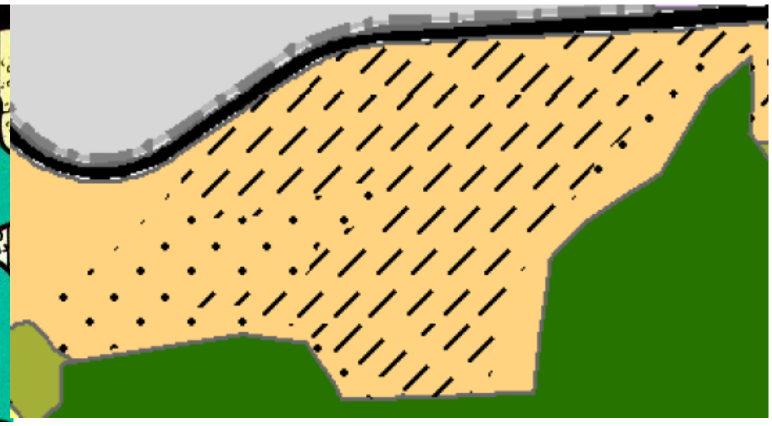
- Albero Court (70, 82)
- Nuvola Court (2, 3, 5, 6, 9, 10, 13, 16, 19, 20, 23, 24, 28, 29, 33, 36, 51, 54)

Change From Residential ≤ 1 du/ac to Residential 1-2 for Portions of Tracts 31617 and 46651 (PC Approved 12/11/12)

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



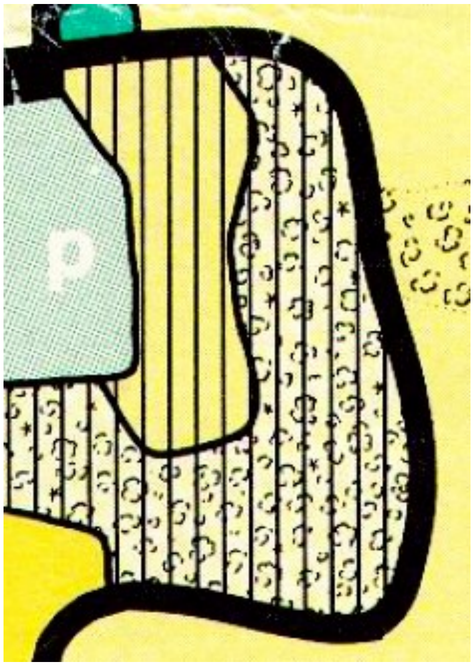
[PC Approved 12/11/12]

This residential tract is located south of Crest Road were created with detached single-family homes and common space areas, wherein a land use designation of R1-2 (1 to 2 dwelling unit per acre) would be most appropriate and consistent with the development. However, on the General Plan Land Use Map, this tract is identified with two separate land use designations; R≤1 (less than or equal to 1 dwelling unit per acre) and R1-2 (one to two dwelling units per acre) for the remainder. Therefore, a land use change is proposed from Residential ≤1 du/ac to Residential 1-2 for portions of Tracts 31617 and 46651. Affected properties are as follows:

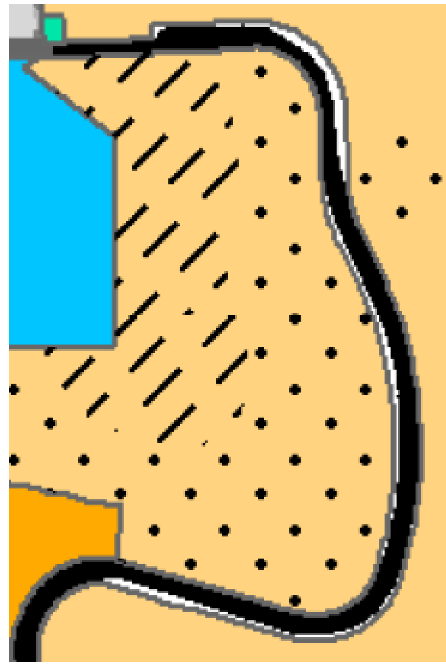
- Ocean Terrace Drive (6206, 6116, 6135, 6136, 6146, 6216, 6224, 6246, 6236, 6258, 6264, 6270)
- Sail View Avenue (32, 34, 35, 38, 40, 42)
- Sea Breeze Avenue (76, 78, 80, 82, 84, 86, 88, 90)
- Sea Ridge Circle (32025, 32033, 32039)

Change From Residential ≤ 1 du/ac to Residential 1-2 for Portions of Tract 33206

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 12/11/12]

This RPV Estates tract was created in 1979, is 60+ acres in size (including common space), and developed with 76 detached single-family homes. This equates to a density of approximately 1.3 dwelling units per acre (du/ac), wherein a land use designation of R1-2 (Residential one to two dwelling units per acre) would be most appropriate and consistent with the development. However, on the General Plan Land Use Map, the RPV Estates tract is identified with two separate land use designations; R1-2 (one to two dwelling units per acre) for the westerly section and R≤1 (less than or equal to 1 dwelling unit per acre) for the remainder. Therefore, a land use change from Residential ≤1 du/ac to Residential 1-2 is proposed for portions of Tract 33206. Affected properties are as follows:

- Avenida de Magnolia (1, 3, 5, 7, 9, 11)
- Avenida de Camilia (2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24)
- Avenida de Olma (2, 4, 6)
- Paseo de Castana (51, 53, 55, 57, 59, 61, 63, 65, 67)
- Paseo de Pino (2, 4, 6, 8, 10, 12)

Change From Residential 2-4 du/ac and Residential ≤ 1 du/ac to Residential 1-2 for Portions of Tract 37818

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

[PC Approved 12/11/12]

This tract was created in 1984 as a residential planned development (RPD), is 26.29 acres in size (including common space), and developed with 23 detached single-family homes. This equates to a density of 1.1 dwelling units per acre (du/ac), wherein a land use designation of R1-2 (one to two dwelling units per acre) would be most appropriate and consistent with the development. However, on the General Plan Land Use Map, the RPV Estates tract is identified with two separate land use designations; R2-4 (two to four dwelling units per acre) for the properties along Via Del Mar and R≤1 (less than or equal to 1 dwelling unit per acre) for the properties along Vista Del Mar. Therefore, a land use change is proposed from Residential 2-4 du/ac and Residential ≤1 du/ac to Residential 1-2 for portions of Tract 37818. Affected properties are as follows:

- Via Del Mar (7040, 7050, 7055, 7060, 7065, 7075, 7080, 7085, 7090, 7100, 7105)
- Albero Court (51)
- Via La Cresta (30909, 30950, 30963, 30925, 30955, 30970, 30960, 30971)
- Via La Rocca (11)

Change From Infrastructure to Residential ≤ 1 du/ac

for Portions of Tract 50667

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

[PC Approved 12/11/12]

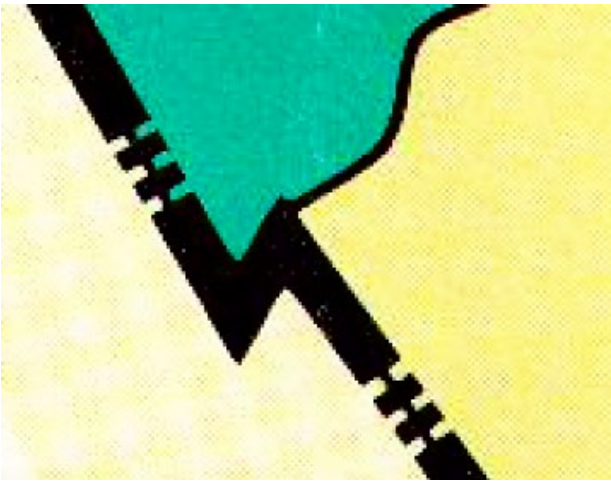
This was created in 1994 with a residential land use density of R≤1 (less than or equal to 1 dwelling unit per acre). However, on the original General Plan Land Use Map, the five existing residential properties along Twin Harbor Views Drive are identified as Infrastructure-Facility, as this area was formally owned by Pacific Bell prior to the project's approval and change in ownership. Therefore, a land use change from Residential ≤1 du/ac for portions of Tract 50667 is proposed. Affected properties are as follows:

- Twin Harbors Drive (2950, 2960, 2970, 2980, 2990)

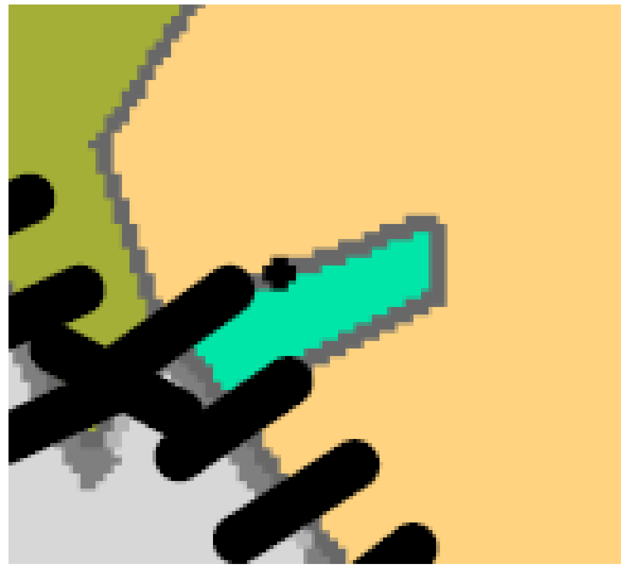
Change From Residential 1-2 to Recreational-Passive for

Martingale Trailhead Park

Existing 1975 General Plan Land Use Map



Proposed General Plan Land Use Map



[PC Approved 1/22/13]

This City-owned park, located north of 21 Martingale, did not exist as a park site when the original General Plan was created in 1975. As such, the existing 0.98 acre site currently has a General Plan land use designation of Residential 1-2 dwelling units/acre. In 1978, the City was able to obtain title to this Park site with the purpose of providing a trailhead for equestrian and pedestrian purposes, which following the purchase, improvements were made. Therefore, a land use change from Residential 1-2 du/ac to Recreational-Passive is proposed.

Change From Residential ≤ 1 du/ac to 4-6 du/ac for

Tract No. 16540

Existing 1975 General Plan Land Use Map

Proposed General Plan Land Use Map

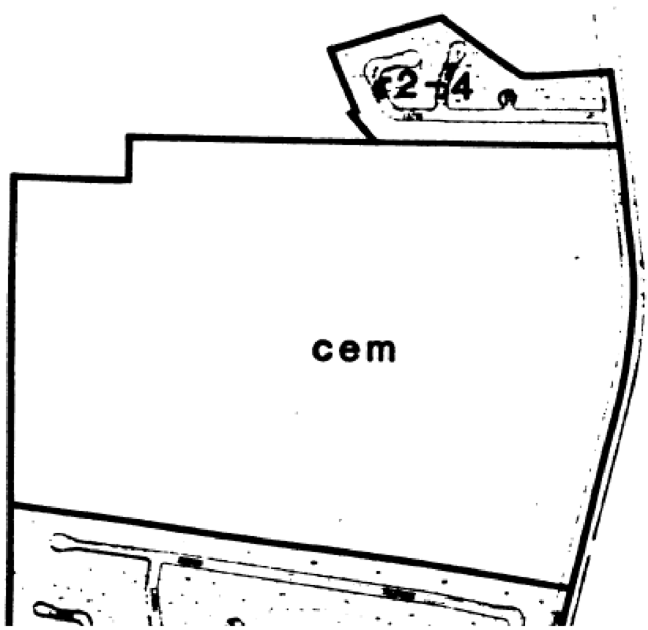
[PC Approved 1/22/13]

This residential tract is approximately 7.11 acres in size and is improved with 43 dwelling units, which equates to approximately 6 dwelling units per acre. In 2009, the City Council adopted Ordinance No. 496; thereby approving a zone change for Tract 16540 so that the entire tract is unified under the City's RS-5 zoning district, which is consistent with the Local Coastal Specific Plan that designates Tract 16540 as "5 dwelling units per acre". However, this land use designation is not consistent with the City's original General Plan which currently identifies the tract as R≤1 (Single-Family Residential, less than or equal to 1 dwelling unit per acre). The Coastal Specific Plan acknowledges the discrepancy with the General Plan Land Use Map. Therefore, a land use change is proposed from Residential ≤1 du/ac to 4-6 du/ac.

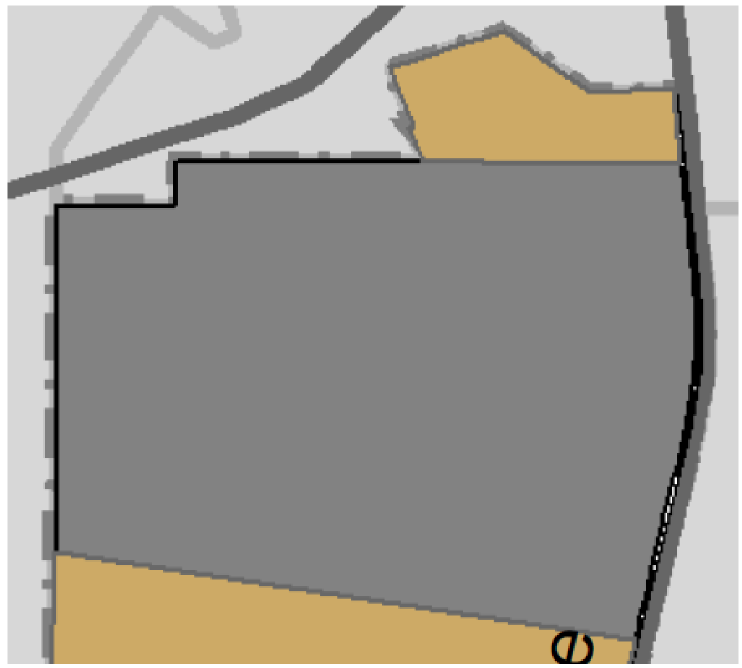
Change from Commercial-Retail to Cemetery for

Green Hills Memorial Park

1984 General Plan Amendment



Proposed General Plan Land Use Map

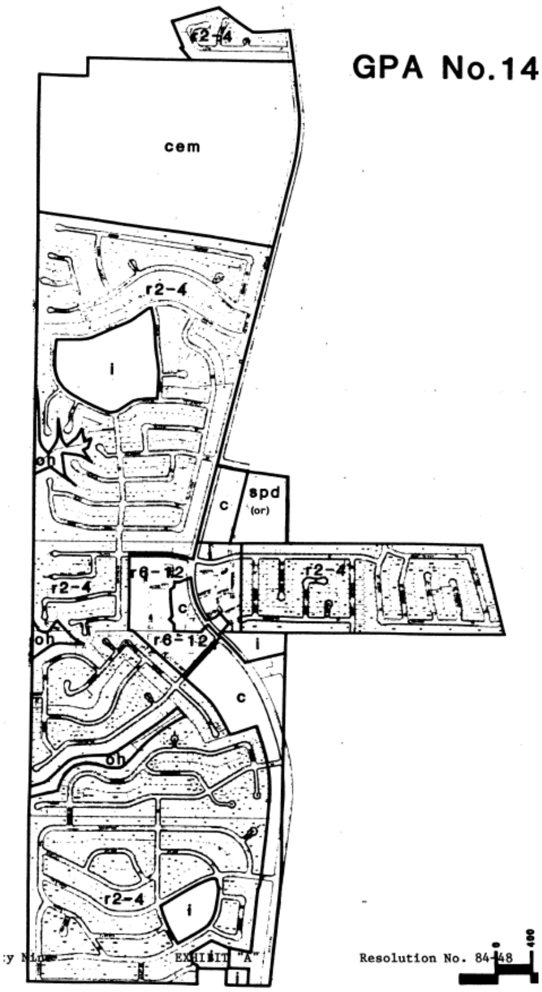


[PC Approved 9/24/13]

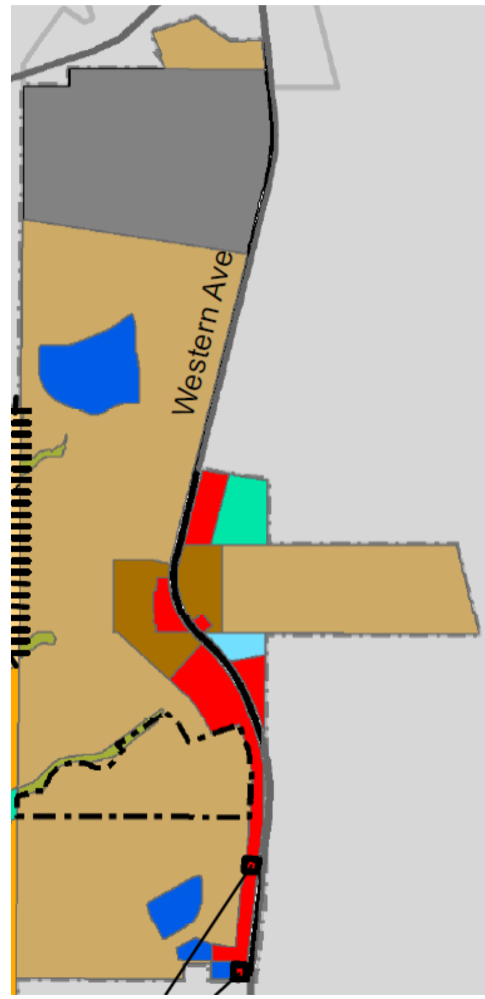
This cemetery is located at the northeast border of the City (27501 Western Avenue). The City Council adopted Resolution No. 84-48, incorporating the Eastview area, including this cemetery in 1984. Along with the incorporation, the City Council also adopted a General Plan Amendment that designated this site as a Cemetery. However, a Cemetery land use designation did not exist and as a result this site was incorrectly designated as Commercial-Retail since its incorporation. As a result, a new land use designation of Cemetery will be created and this site will be correctly designated for consistency with the Council's 1984 decision and its use as a cemetery.

Change from Residential 2-4 du/ac to Residential 4-6 du/ac for Eastview Single-Family Residential Areas

1984 General Plan Amendment



Proposed General Plan Land Use Map



[PC Approved 4/14/15]

In 1984, the City Council adopted Resolution No. 84-48, incorporating the Eastview area. Along with the incorporation, the City Council also adopted a General Plan Amendment assigned land use designations for the entire area. In 2003, the City Council formed a Residential Development Standards Steering Committee to review the City's residential development standards. In its review, the Committee identified specific residential development standards that warrant amending, one of which was the single-family zoning districts in the Eastview area. Based on an in-depth study, the Committee recommended that the Eastview single-family residential districts be re-zoned from RS-4 (4 dwelling units per acre) to RS-5 (5 dwelling units per acre) as the Committee felt that the RS-5 zoning is a better representation of the Eastview area as a whole. After a series of public hearings before the Planning Commission, the Planning Commission recommended and the City Council adopted Ordinance 510 (attached) in 2010; thereby changing the zoning designation of the single-family residential area in the Eastview area from RS-4 to RS-5. While the zoning designation was changed, the underlying General Plan land use designation was not changed to match the new RS-5 zoning designation. More specifically, the existing land use designation for the single-family properties remains at R2-4 (2 to 4 dwelling units per acre) which correlates with RS-2, RS-3 and RS-4 zoning districts. With the zone change to RS-5, the zoning designation is no longer consistent with the General Plan's R2-4 land use designation. Therefore, land use change is proposed from R2-4 to R4-6, which correlates with the existing RS-5 zoning district in the Eastview area.

Appendix C

AIR QUALITY ANALYSIS

GENERAL PLAN UPDATE

RANCHO PALOS VERDES, CALIFORNIA

LSA

February 2011

AIR QUALITY ANALYSIS

GENERAL PLAN UPDATE

RANCHO PALOS VERDES, CALIFORNIA

Prepared for:

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(949) 553-0666

LSA Project No. PVE0701

LSA

February 2011

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1.0 EXECUTIVE SUMMARY

LSA Associates, Inc. (LSA) was retained by the City of Rancho Palos Verdes (City) to prepare an air quality study associated with the proposed General Plan Update project. The City is located in Los Angeles County, California.

The air quality study provides a discussion of the proposed General Plan Update, the physical setting of the City, and the regulatory framework for air quality. The report provides data on existing air quality, evaluates potential air quality impacts associated with the proposed General Plan Update, and identifies mitigation measures recommended for potentially significant impacts. Modeled air quality levels are based on vehicle data and project trip generation prepared for the General Plan Update (Willdan Engineering, July 19, 2010). The study focuses on the 28 Traffic Impact Analysis Zones (Table 6) and the Related Projects List (Table 5) identified in the City's Land Use Element and listed in the Traffic Impact Analysis prepared for the General Plan Circulation Element Update (Willdan Engineering, July 19, 2010), hereafter referred to as the vacant zones.

Emissions during construction of individual development on the vacant zones could potentially exceed the criteria pollutant thresholds established by the South Coast Air Quality Management District (SCAQMD) if two or more individual developments are under construction at the same time with similar schedules. However, given that this is a General Plan covering a 30 year planning period and the individual projects could be constructed any time during that period, the likelihood of concurrent construction is low. Additionally, compliance with SCAQMD rules and regulations during construction will minimize construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Standard dust suppression measures have been identified for short-term construction to reduce emissions from construction activity with a goal to meet the SCAQMD emissions thresholds. Depending on the location of these vacant zones and the proximity of adjacent sensitive uses, each proposed General Plan Update project alone could potentially exceed the localized significance thresholds (LSTs) during construction. Construction emissions associated with development at the vacant zones identified in the General Plan Update would thus be potentially significant.

Pollutant emissions from operation of the General Plan Update project components, calculated with the URBEMIS 2007 model, would exceed many of the criteria pollutant thresholds established by the SCAQMD when these future potential developments are completed. However, the majority of these potential future developments are residential in nature and the SCAQMD LSTs for operations would not be exceeded by long-term emissions from operation of these future developments in their respective vicinity. The aggregate or combined operational emissions from development at these vacant zones within the City, as identified in the Land Use Element and listed in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010), would exceed the SCAQMD daily emissions thresholds for many criteria pollutants. Historical air quality data show that existing carbon monoxide (CO) levels in the South Coat Air Basin in general and in the vicinity of the City at the North Long Beach monitoring station do not exceed either State or federal ambient air quality standards (AAQS). The CO hot-spot analysis was conducted with the CALINE4 model and peak-hour intersection vehicle turn volumes for the existing conditions and General Plan build out scenarios at the intersections throughout the City and evaluated in the Traffic Impact Analysis. The results showed that buildout of the General Plan with projected development on the vacant zones identified would not significantly affect local CO levels and the CO concentrations would all remain below the State and federal standards. No significant impact on local CO levels would occur.

The proposed project is located in Los Angeles County, which is among the counties that are found to have serpentine and ultramafic rock in their soils. However, the City is not within the areas that have known serpentine and ultramafic rock in their soils. Therefore, the potential risk for encountering naturally occurring asbestos (NOA) during construction of the individual developments on the vacant zones identified is small and less than significant.

The project is proposed to update and amend the City's General Plan and Zoning Designations, which will then not be consistent with the Southern California Association of Governments (SCAG) Regional Comprehensive Plan (RCP) Guidelines and the SCAQMD Air Quality Management Plan (AQMP) that incorporate the previous City General Plan and Zoning Designations. Until the City approves the new General Plan and the SCAG and SCAQMD review, approve and incorporate it into their regional plans, the proposed General Plan Update project is not consistent with the regional RCP and AQMP. This is a potentially significant impact.

The potential of the General Plan Update to affect global climate change is also included. Short-term construction and long-term operational emissions of the principal greenhouse gases (GHGs), including carbon dioxide (CO_2) and methane (CH_4), are quantified, and their significance relative to Assembly Bill (AB) 32 is discussed.

The evaluation was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the SCAQMD *California Environmental Quality Act (CEQA) Air Quality Handbook* (CEQA Handbook; SCAQMD 1993). Air quality data posted on the California Air Resources Board (ARB) and United States Environmental Protection Agency (EPA) websites are included to document the local air quality environment.

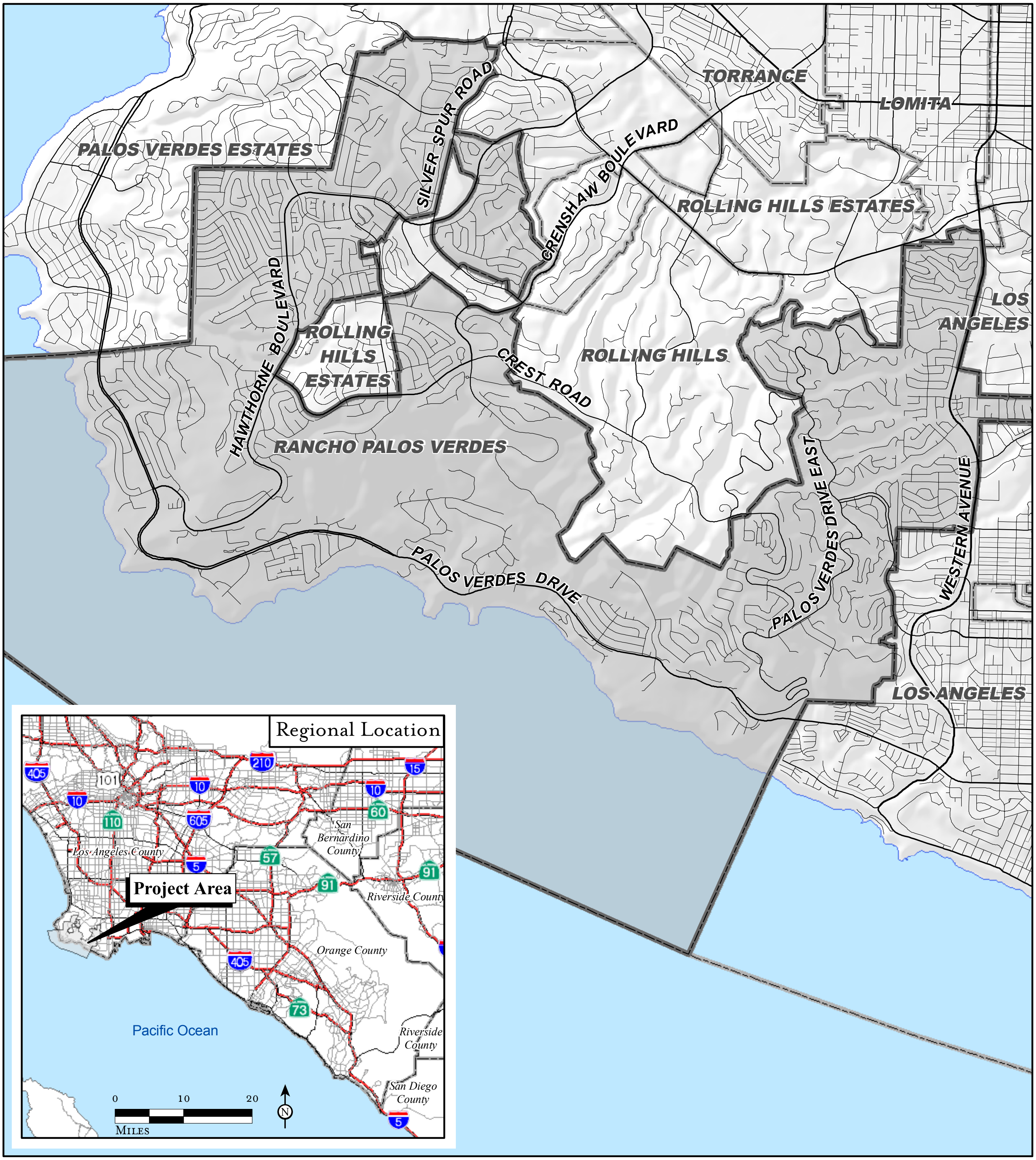
2.0 PROJECT DESCRIPTION

2.1 LOCATION

The City of Rancho Palos Verdes is bounded by the Pacific Ocean to the west and south and adjacent to the almost built-out jurisdictions of Palos Verdes Estates to the north, Rolling Hills Estates to the northeast, and Rolling Hills to the east. Figure 1 illustrates the City and its sphere of influence. The City is almost built out, and substantial areas of the City cannot be built on due to topographic constraints that restrict development. The City does not have any immediate access to a freeway; the closest freeway is Interstate 110 (I-110), which is located east of the City.

2.2 PROJECT DESCRIPTION

Based on the Land Use Element and the Traffic Impact Analysis (TIA) for the General Plan Circulation Element Update (Willdan Engineering, July 19, 2010), it is anticipated that there would be potential future development on vacant zones throughout the City after the General Plan build out is complete. These zones are identified as the 28 Traffic Impact Analysis Zones (Table 6) and the Related Projects List (Table 5) in the City's Land Use Element.



LSA

FIGURE 1

CITY OF RANCHO PALOS VERDES

OTHER CITIES

0 2,500 5,000

Feet

Rancho Palos Verdes General Plan Update
Air Quality Analysis

Regional and Project Location

SOURCE: Thomas Bros., 2006, County of Los Angeles, 2006.

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3.0 SETTING

3.1 REGIONAL AIR QUALITY

The project site is located in the nondesert portion of Los Angeles County, California, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the SCAQMD. The air quality assessment for the proposed project includes estimating emissions associated with short-term construction of the proposed project components.

A number of air quality modeling tools are available to assess the air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analyses. The SCAQMD's current guidelines, included in its CEQA Handbook (April 1993), were adhered to in the assessment of air quality impacts for the proposed project.

3.1.1 Regional Air Quality

Both the State of California (State) and the federal government have established health-based AAQS for seven air pollutants. As shown in Table A, these pollutants include ozone (O_3), CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to setting out primary and secondary AAQS, the State has established a set of episode criteria for O_3, CO, NO_2, SO_2, and PM_{10}. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. An alert level is that concentration of pollutants at which initial stage control actions are to begin. For this project area, SCAQMD Rule 701 applies. An alert will be declared when any one of the pollutant alert levels is reached at any monitoring site and meteorological conditions are such that the pollutant concentrations can be expected to remain at these levels for 12 or more hours or to increase; or, in the case of oxidants, the situation is likely to recur within the next 24 hours unless control actions are taken.

Table A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 μg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 μg/m³)		0.075 ppm (147 μg/m³)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 μg/m³	Gravimetric or Beta Attenuation	150 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m³		--		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m³	Gravimetric or Beta Attenuation	15.0 μg/m³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m³)		35 ppm(40 mg/m³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	Gas Phase Chemiluminescence	53 ppb (100 μg/m³) (see footnote 8)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 μg/m³)		100 ppb (188 μg/m³) (see footnote 8)	None	
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm (105 μg/m³)	Ultraviolet Fluorescence	—	—	Spectrophotometry (Pararosaniline Method)
	3-Hour	—		—	0.5 ppm (1300 μg/m³) (see footnote 9)	
	1-Hour	0.25 ppm (655 μg/m³)		75 ppb (196 μg/m³) (see footnote 9)	—	
Lead[10]	30 Day Average	1.5 μg/m³	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 μg/m³	Same as Primary Standard	
	Rolling 3-Month Average[11]	—		0.15 μg/m³		
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24-Hour	25 μg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24-Hour	0.01 ppm (26 μg/m³)	Gas Chromatography			

Source: California Air Resources Board, September 8, 2010.

Table footnotes are provided on the following page.

Footnotes:

1 California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter - PM_{10}, $PM_{2.5}$ and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent procedure which can be shown to the satisfaction of ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

8 To attain this standard, the 3-year average of the 98^{th} percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards, the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

9 On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM has adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at this time; however, the secondary standard is undergoing a separate review by the EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10 The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11 National lead standard, rolling 3-month average: final rule signed October 15, 2008.

°C = degrees Celsius
EPA = United States Environmental Protection Agency
$\mu g/m^3$ = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion

Pollutant alert levels are as follows:[1]

- **O_3:** 392 micrograms per cubic meter ($\mu g/m^3$) (0.20 parts per million [ppm]), 1-hour average
- **CO:** 17 milligrams per cubic meter (mg/m^3) (15 ppm), 8-hour average
- **NO_2:** 1,130 $\mu g/m^3$ (0.6 ppm) 1-hour average; 282 $\mu g/m^3$ (0.15 ppm) 24-hour average
- **SO_2:** 525 $\mu g/m^3$ (0.2 ppm), 24-hour average
- **Particulates, measured as PM_{10}:** 350 $\mu g/m^3$, 24-hour average

Table B lists the primary health effects and sources of common air pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these health effects will not occur unless the standards are exceeded by a large margin or for a prolonged period of time. State AAQS are more stringent than federal AAQS. Among the pollutants, O_3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered regional pollutants, while the others have more localized effects.

Table B: Summary of Health Effects of the Major Criteria Air Pollutants

Pollutant	Health Effects	Examples of Sources
Particulate matter (PM_{10}: less than or equal to 10 microns)	• Increased respiratory disease • Lung damage • Premature death	• Cars and trucks, especially diesels • Fireplaces, wood stoves • Windblown dust from roadways, agriculture, and construction
Ozone (O_3)	• Breathing difficulties • Lung damage	• Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	• Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen dioxide (NO_2)	• Lung damage	• See CO sources
Toxic air contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products

Source: ARB 2009 (http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm).

The California Clean Air Act (CCAA) provides the SCAQMD and other air districts with the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this would be the motor vehicles at an intersection, a mall, and on highways. The SCAQMD also

[1] SCAQMD Rule 701, Attachment 2.

regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by ARB.

Climate/Meteorology. Air quality in the planning area is not only affected by various emission sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin. The Basin lies in the semi-permanent high-pressure zone of the eastern Pacific; the resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, and Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site with sufficient temperature data is the San Pedro Station.[1] The monthly average maximum temperature recorded at this station in the past ranged from 62.9°F in January to 74.4°F in September, with an annual average maximum of 68.7°F. The monthly average minimum temperature recorded at this station ranged from 47.2°F in January to 61.8°F in August, with an annual average minimum of 54.4°F. January is typically the coldest month, and August and September are typically the warmest months in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Palos Verdes Estates Station is the closest station that monitors precipitation. Average monthly rainfall measured during that period varied from 2.97 inches in January to 0.34 inch or less between May and October, with an annual total of 12.23 inches. The San Pedro Station also monitors precipitation. Average monthly rainfall measured during that period varied from 2.37 inches in February to 0.29 inch or less between May and October, with an annual total of 10.09 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in midafternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

[1] Western Regional Climate Center, www.wrcc.dri.edu.

Winds in the vicinity of the project area blow predominantly from the west and southwest, with relatively low velocities. Wind speeds in the project area average about 4 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are CO and oxides of nitrogen (NO_X) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Description of Global Climate Change and its Sources. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors, such as changes in the sun's intensity; natural processes within the climate system, such as changes in ocean circulation; or human activities, such as the burning of fossil fuels, land clearing, or agriculture. The primary observed effect of global climate change has been a rise in the average global tropospheric[1] temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold and increased intensity of tropical cyclones. Specific effects in California might include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Delta.

Global surface temperatures have risen by 1.33°F ± 0.32°F over the last 100 years (1906 to 2005). The rate of warming over the last 50 years is almost double that over the last 100 years.[2] The latest projections, based on state-of-the art climate models, indicate that temperatures in California are

1 The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

2 Intergovernmental Panel on Climate Change (IPCC), 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.*

expected to rise 3–10.5°F by the end of the century.[1] The prevailing scientific opinion on climate change is that "most of the warming observed over the last 50 years is attributable to human activities."[2] Increased amounts of CO_2 and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as the greenhouse effect.[3]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:[4]

- CO_2
- CH_4
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6)

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While GHGs produced by human activities include naturally-occurring GHGs such as CO_2, CH_4, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere. Certain other gases, such as water vapor, are short-lived in the atmosphere as compared to these GHGs that remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this Environmental Impact Report (EIR), the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition

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[1] California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California.* July.

[2] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science Basis*, http://www.ipcc.ch.

[3] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduce the amount of heat that escapes, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

[4] The greenhouse gases listed are consistent with the definition in Assembly Bill (AB) 32 (Government Code 38505), as discussed later in this section.

of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table C shows the GWPs for each type of GHG. For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide.

Table C: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO_2)	50–200	1
Methane (CH_4)	12	25
Nitrous Oxide (NO_x)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC, 2007. *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the Fourth Assessment Report of the IPCC.
HFC = Hydrofluorocarbons
IPCC = Intergovernmental Panel on Climate Change
PFC = Perfluorocarbons

The following discussion summarizes the characteristics of the six primary GHGs.

Carbon Dioxide. In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter, and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of humanmade CO_2, and consequently the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s.[1]

In 2002, CO_2 emissions from fossil fuel combustion accounted for approximately 98 percent of humanmade CO_2 emissions and approximately 84 percent of California's overall GHG emissions

1 California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

(CO_2e). The transportation sector accounted for California's largest portion of CO_2 emissions, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second-largest category of GHG emissions.

Methane. CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (burning of coal, oil, natural gas, etc.). Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California, followed by enteric fermentation (emissions from the digestive processes of livestock).[1] Agricultural processes such as manure management and rice cultivation are also significant sources of humanmade CH_4 in California. CH_4 accounted for approximately 6 percent of gross climate change emissions (CO_2e) in California in 2002.[2] It is estimated that over 60 percent of global methane emissions are related to human-related activities.[3] As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

Nitrous Oxide. N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O emissions accounted for nearly 7 percent of humanmade GHG emissions (CO_2e) in California in 2002.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[4] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry, which is active in California, leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 3.5 percent of humanmade GHG emissions (CO_2e) in California in 2002.[5]

1 California Air Resources Board, Greenhouse Gas Inventory Data - 1990 to 2004. http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed November 2008.

2 Ibid.

3 IPCC, 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

4 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

5 California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

Emissions Sources and Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, National, California, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere (see Table C), accumulate over time, and are generally well-mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

Global Emissions. Worldwide emissions of GHGs in 2004 were 27 billion metric tons of CO_2e per year.[1] Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions. In 2004, the United States emitted approximately 7.3 billion metric tons of CO_2e or approximately 25 tons per year per person. Of the four major sectors nationwide—residential, commercial, industrial and transportation—transportation accounts for the highest amount of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. Between 1990 and 2006, total United States GHG emissions rose approximately 14.7 percent.[2]

State of California Emissions. According to California ARB emission inventory estimates, California emitted approximately 480 million metric tons[3] of CO_2e emissions in 2004.[4] This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth-lowest per-capita CO_2 emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.[5]

The Cal/EPA Climate Action Team stated in its March 2006 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO_2e) was as follows:

- CO_2 accounted for 83.3 percent
- CH_4 accounted for 6.4 percent

1 Combined total of Annex I and Non-Annex I Country CO_2eq emissions. United Nations Framework Convention on Climate Change (UNFCCC), 2007. *Greenhouse Gas Inventory Data.* Information available at http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php and http://maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf.

2 U.S. Environmental Protection Agency (EPA). 2008. The U.S. Greenhouse Gas Emissions and Sinks: Fast Facts. http://www.epa.gov/climatechange/emissions/downloads/2008_GHG_Fast_Facts.pdf.

3 A metric ton is equivalent to approximately 1.1 tons.

4 California Air Resources Board, Greenhouse Gas Inventory Data - 1990 to 2004. http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed November 2008.

5 California Energy Commission (CEC), 2007. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007 update to that report.

- N_2O accounted for 6.8 percent
- HFCs, PFC, and SF_6 accounted for 3.5 percent[1]

The California ARB estimates that transportation is the source of approximately 38 percent of the State's GHG emissions in 2004, followed by electricity generation (both in-State and out-of-State) at 23 percent, and industrial sources at 20 percent. The remaining sources of GHG emissions are residential and commercial activities at 9 percent, agriculture at 6 percent, high global warming potential gases at 3 percent, and recycling and waste at 1 percent.[2]

The California ARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State of California and supports the AB 32 Climate Change Program. The California ARB's current GHG emission inventory covers the years 1990–2004 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, agricultural lands). The emission inventory estimates are based on the actual amount of all fuels combusted in the State, which accounts for over 85 percent of the GHG emissions within California.

The California ARB staff has projected statewide unregulated GHG emissions for 2020, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions, will be 596 million metric tons (MMT) of CO_2e. GHG emissions from the transportation and electricity sectors as a whole are expected to increase, but remain at approximately 38 percent and 23 percent of total CO_2e emissions, respectively. The industrial sector consists of large stationary sources of GHG emissions, and the percentage of the total 2020 emissions is projected to be 17 percent of total CO_2e emissions. The remaining sources of GHG emissions in 2020 are high global warming potential gases at 8 percent, residential and commercial activities at 8 percent, agriculture at 5 percent, and recycling and waste at 1 percent.[3]

Air Pollution Constituents and Attainment Status. The ARB coordinates and oversees both State and federal air pollution control programs in California. The ARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. The ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by ARB and EPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent 3 calendar years compared with the AAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table D lists the attainment status for the criteria pollutants in the Basin.

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[1] California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.
[2] California Air Resources Board (ARB), 2008. http://www.climatechange.ca.gov/inventory/index.html. September.
[3] Ibid.

Table D: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	N/A
O_3 8-hour	Nonattainment	Severe-17 Nonattainment
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Nonattainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Nonattainment (Los Angeles County only)	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB 2010 (http://www.arb.ca.gov/desig/desig.htm).
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matte less than 2.5 microns in diameter
SO_2 = sulfur dioxide

Ozone. O_3 (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases (ROGs) rather than being directly emitted. O_3 is a pungent, colorless gas typical of Southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O_3 levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for the State 1-hour and 8-hour O_3 standards. The EPA has officially designated the status for most of the Basin regarding the 8-hour O_3 standard as “Severe 17,” which means the Basin has until 2021 to attain the federal 8-hour O_3 standard. The SCAQMD has requested that the Basin’s federal designation be changed from severe to extreme nonattainment. This change would extend the attainment deadline to 2023.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The entire Basin is in attainment for the State standards for CO. The Basin is designated as a “Severe Maintenance” area under the federal CO standards.

Nitrogen Oxides. NO_2, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin has not exceeded the federal standards for NO_2 in the past five years with published monitoring data. It is designated as a maintenance area under the federal standards and a nonattainment area under the State standards.

Sulfur Dioxide. SO_2 is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment with both federal and State SO_2 standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The entire Basin is in attainment for the federal standards for lead. The Los Angeles County portion of the Basin has been re-designated to be in nonattainment status for the State standards for lead.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (PM_{10}) derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particulate matter ($PM_{2.5}$) levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that $PM_{2.5}$, which penetrate deeply into the lungs, are more likely than coarse particles to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. Most of the Basin is designated nonattainment for the federal and State PM_{10} and $PM_{2.5}$ standards.

Reactive Organic Compounds. ROCs (also known as ROGs and volatile organic compounds [VOCs]) are formed from the combustion of fuels and the evaporation of organic solvents. ROCs are not defined as criteria pollutants, but are a prime component of the photochemical smog reaction. Consequently, ROC accumulates in the atmosphere more quickly during the winter when sunlight is limited and photochemical reactions are slower.

3.1.2 Local Air Quality

SCAQMD, together with ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the North Long Beach Station. This station monitors all criteria pollutants. This station characterizes the air quality representative of the ambient air quality in the project area.[1] The ambient air quality data in Table E show that CO, NO_2, and SO_2 levels are consistently below the relevant State and federal standards in the project vicinity. O_3, PM_{10}, and $PM_{2.5}$ levels all exceed State and federal standards regularly.

[1] Air quality data, 2006–2008; EPA and ARB websites.

Table E: Ambient Air Quality Monitored at North Long Beach Station

Pollutant	Standard	2007	2008	2009
Carbon Monoxide (CO)				
Maximum 1-hr concentration (ppm)		3.3	3.3	3.1
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hr concentration (ppm)		2.6	2.5	2.2
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hr concentration (ppm)		0.099	0.093	0.089
Number of days exceeded:	State: > 0.09 ppm	1	0	0
Maximum 8-hr concentration (ppm)		0.073	0.074	0.067
Number of days exceeded:	State: > 0.07 ppm	1	1	0
	Federal: > 0.075 ppm	0	0	0
Coarse Particulates (PM_{10})				
Maximum 24-hr concentration (μg/m^3)		232	62	62
Number of days exceeded:	State: > 50 μg/m^3	6	1	3
	Federal: > 150 μg/m^3	1	0	0
Annual arithmetic average concentration (μg/m^3)		33.5	29.1	ND[1]
Exceeded for the year:	State: > 20 μg/m^3	Yes	Yes	ND
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hr concentration (μg/m^3)		82.8	57.2	63.0
Number of days exceeded:	Federal: > 35 μg/m^3	12[2]	8	6
Annual arithmetic average concentration (μg/m^3)		14.6	ND	ND
Exceeded for the year:	State: > 12 μg/m^3	Yes	ND	ND
	Federal: > 15 μg/m^3	No	ND	ND
Nitrogen Dioxide (NO_2)				
Maximum 1-hr concentration (ppm)		0.107	0.125	0.111
Number of days exceeded:	State: > 0.18 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.020	0.021	0.021
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 24-hr concentration (ppm)		0.010	0.012	0.005
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.003	0.002	ND
Exceeded for the year:	Federal: > 0.030 ppm	No	No	ND

Sources: EPA and ARB websites: www.epa.gov/air/data/index.html and www.arb.ca.gov/adam/welcome.html.

[1] ND = No data available.

[2] The exceedances of the federal 24-hour $PM_{2.5}$ standard are based on the old 65 μg/m^3 standard. In 2006, the EPA revised the standard to 35 μg/m^3.

μg/m^3 = micrograms per cubic meter
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
ppm = parts per million

3.1.3 Regulatory Settings

Federal Regulations/Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA.

The EPA has designated the SCAG as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

The EPA established new national air quality standards for ground-level O_3 and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for O_3 and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The court unanimously rejected industry arguments that the EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the EPA took too much lawmaking power from Congress when it set tougher standards for O_3 and soot in 1997. Nevertheless, the court threw out the EPA's policy for implementing new O_3 rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the 8-hour ground-level O_3 standard. The EPA issued the proposed rule implementing the 8-hour O_3 standard in April 2003. The EPA completed final 8-hour nonattainment status on April 15, 2004. The EPA revoked the 1-hour O_3 standard on June 15, 2005, and lowered the 8-hour O_3 standard from 0.08 ppm to 0.075 ppm on April 1, 2008.

The EPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 $\mu g/m^3$ and revoked the annual PM_{10} standard on December 17, 2006. The EPA issued final designations for the 2006 24-hour $PM_{2.5}$ standard on December 12, 2008.

Currently there are no adopted regulations to combat global climate change on a national level. However, recent statutory authority has been granted to the EPA that may change the voluntary approach taken under the current administration to address this issue. On April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the FCAA. Consequently, the regulation of GHG emissions on a national level by the EPA is possible.

State Regulations/Standards. In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus, the Bureau of Air Sanitation and the Motor

Vehicle Pollution Control Board, to establish ARB. Since its formation, ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires ARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. In setting these standards, ARB considered cost effectiveness, technological feasibility, and economic impacts. ARB adopted the standards in September 2004. When fully phased-in, the near-term (2009 to 2012) standards would result in a reduction in GHG emissions of approximately 22 percent compared to the emissions from the 2002 fleet, while the midterm (2013 to 2016) standards would result in a reduction of approximately 30 percent. To set its own GHG emissions limits on motor vehicles, California must receive a waiver from the EPA. However, in December 2007, the EPA denied the request from California for the waiver. In January 2008, the California Attorney General filed a petition for review of the EPA's decision in the Ninth Circuit Court of Appeals; however, no decision on that petition has been published as of January 2009. On January 26, 2009, the President issued an Executive Memorandum directing the EPA to reassess its decision to deny the waiver and to initiate any appropriate action.[1] On May 18, 2009, the President announced the enactment of a 35.5 miles-per-gallon (mpg) fuel economy standard for automobiles and light duty trucks which will begin to take effect in 2012. This standard is approximately the same standard that was proposed by California, and so the California waiver request has been shelved as a result.

The ARB identified particulate emissions from diesel-fueled engines (DPM) as toxic air contaminants (TACs) in August 1998. Following the identification process, ARB was required by law to determine if there is a need for further control. In September 2000, ARB adopted the Diesel Risk Reduction Plan (Diesel RRP), which recommends many control measures to reduce the risks associated with DPM and achieve a goal of 75 percent DPM reduction by 2010 and 85 percent by 2020.

In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals for the State of California: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

California's major initiative for reducing GHG emissions is outlined in AB 32, the "Global Warming Solutions Act," passed by the California State legislature on August 31, 2006. AB 32 will require ARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions, by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of GHG emissions by January 1, 2008;
- Adopt an emissions reduction plan by January 1, 2009, indicating how emissions reductions will be achieved via regulations, market mechanisms, and other actions; and

[1] Obama, President Barack. 2009. Memorandum for the Administrator of the Environmental Protection Agency. State of California Request for Waiver Under 42 U.S.C. 7543(b), the Clean Air Act. January 26.

- Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions of GHGs by January 1, 2011.

The ARB has established the level of GHG emissions in 1990 at 427 $MMTCO_2e$. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures.[1] Emission reductions that are projected to result from the recommended measures in the Scoping Plan are expected to total 174 $MMTCO_2e$, which would allow California to attain the emissions goal of 427 $MMTCO_2e$ by 2020. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The Scoping Plan, even after Board approval, remains a recommendation. The measures in the Scoping Plan will not be binding until after they are adopted through the normal rulemaking process. The ARB rule-making process includes preparation and release of each of the draft measures, public input through workshops and a public comment period, followed by an ARB Board hearing and rule adoption.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed ARB and the newly created Climate Action Team (CAT)[2] to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs ARB to consider the Low Carbon Fuel Standard as a discrete early action measure.

In June 2007, ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture).[3] Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of perfluorocarbons from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and sulfur hexafluoride (SF_6) reductions from the nonelectricity sector. The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 MMT.[4]

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[1] ARB. 2008. *Climate Change Proposed Scoping Plan: a Framework for Change*. October.

[2] CAT is a consortium of representatives from State agencies who have been charged with coordinating and implementing GHG emission reduction programs that fall outside of ARB's jurisdiction.

[3] California Air Resources Board. 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

[4] California Air Resources Board. 2007. "ARB approves tripling of early action measures required under AB 32". News Release 07-46. http://www.arb.ca.gov/newsrel/nr102507.htm. October 25.

To assist public agencies in the mitigation of GHG emissions or analyzing the effects of GHGs under CEQA, including the effects associated with transportation and energy consumption, Senate Bill (SB) 97 (Chapter 185, 2007) requires the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how to minimize and mitigate a project's GHG emissions. OPR is required to prepare, develop, and transmit these guidelines on or before July 1, 2009 and the Resources Agency is required to certify and adopt them by January 1, 2010. Preliminary guidance released by OPR in June 2008 suggests that global climate change analyses in CEQA documents should be conducted for all projects that release GHGs, and that mitigation measures to reduce emissions should be incorporated into projects, to the extent feasible. On January 8, 2009, OPR released preliminary draft CEQA guideline amendments, which may be refined through a public process currently underway at the time this document was drafted. The preliminary amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations.

SB 375, signed into law on October 1, 2008, is intended to enhance ARB's ability to reach AB 32 goals by directing ARB to develop regional GHG emissions reduction targets to be achieved within the automobile and light truck sectors for 2020 and 2035. ARB will work with California's 18 metropolitan planning organizations to align their regional transportation, housing, and land use plans and prepare a "Sustainable Communities Strategy" to reduce the number of vehicle miles traveled in their respective regions and demonstrate the region's ability to attain its greenhouse gas reduction targets.

Additionally, SB 375 provides incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The bill exempts home builders from certain CEQA requirements if they build projects consistent with the new sustainable community strategies. It will also encourage the development of more alternative transportation options, to promote healthy lifestyles and reduce traffic congestion.

Regional Air Quality Planning Framework. The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB is responsible for incorporating AQMPs for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan. The SCAQMD and the SCAG are responsible for formulating and implementing the AQMP for the Basin. Every 3 years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the 2003 AQMP in August 2003 and forwarded it to ARB for review and approval. The ARB approved a modified version of the 2003 AQMP and forwarded it to the EPA in October 2003 for review and approval.

The 2003 AQMP updates the attainment demonstration for the federal standards for O_3 and PM_{10}, replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future, and updates the maintenance plan for the federal NO_2 standard that the Basin has met since 1992.

The 2003 AQMP proposes policies and measures to achieve federal and state standards for healthful air quality in the Basin and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under SCAQMD jurisdiction (namely, Coachella Valley). The Coachella Valley PM_{10} Plan was revised in June 2002 and forwarded to ARB and EPA for approval. The EPA approved the 2002 Coachella Valley SIP on April 18, 2003.

This revision to the AQMP also addresses several State and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes and new air quality modeling tools. This AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 Amendments to the O_3 SIP for the South Coast Air Basin for the attainment of the federal O_3 air quality standard. However, this revision points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/99 Plan) to offset increased emission estimates from mobile sources and meet all federal criteria pollutant standards within the time frames allowed under the federal CAA.

The SCAQMD adopted the 2007 AQMP on June 1, 2007, which it describes as a regional and multiagency effort (the SCAQMD Governing Board, ARB, SCAG, and EPA). State and federal planning requirements will include developing control strategies, attainment demonstration, reasonable further progress, and maintenance plans. The 2007 AQMP also incorporates significant new scientific data, primarily in the form of updated emission inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The ARB has adopted the SCAQMD 2007 AQMP as part of the 2007 SIP and forwarded it to the EPA for review and approval. The SCAQMD is awaiting EPA's review and approval on its 2007 AQMP as part of the 2007 SIP.

4.0 THRESHOLDS AND METHODOLOGY

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analysis. SCAQMD's current guidelines, CEQA Handbook (April 1993), were adhered to in the assessment of air quality impacts for the proposed project. The air quality models identified in the document (including an older version of the URBEMIS model) are outdated; therefore, the current version of the URBEMIS model, URBEMIS2007 Version 9.2.4, was used to estimate project-related mobile and stationary sources emissions in this Air Quality Analysis.

The Air Quality Analysis includes estimated emissions associated with long-term operations after the General Plan build-out. Criteria pollutants with regional impacts would be emitted by General Plan build-out growth-related vehicular trips, as well as by emissions associated with stationary sources used on site. Localized air quality impacts, i.e., higher CO concentrations (CO hot spots) near key affected intersections throughout the City, would be small and less than significant due to the generally low ambient CO concentrations in the region where the City is located. A local CO hot-spot analysis was conducted. Area-specific information was used in the modeling. Default values representative of the region were used when area-specific data were not available.

The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of the proposed General Plan Update project. The results also allow the City to determine whether the proposed action will deter the Basin from achieving the goal of reducing pollutants in accordance with the AQMP in order to comply with federal and State AAQS.

SCAQMD has developed LST methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or State AAQS and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). SCAQMD's current guidelines, *Final Localized Significance Threshold Methodology* (June 2003, revised July 2008), and *Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds* (October 2006) were adhered to in the assessment of air quality impacts for the proposed project.

The LST analysis is used to determine whether the daily emissions for the proposed construction activities could result in significant localized air quality impacts. The emissions of concern from construction activities are NO_X, CO, PM_{10}, and $PM_{2.5}$ combustion emissions from construction equipment and fugitive PM_{10} dust from construction site preparation activities. The primary emissions from operational activities include but are not limited to NO_X and CO combustion emissions from stationary sources and/or on-site mobile equipment. Off-site mobile emissions from the project are not included in the emissions compared to the LSTs. Because of the nature of the General Plan Update project, no specific construction activity on any local individual sites has been scheduled or identified. Therefore, this aspect of the localized air quality impact analysis is not included here.

4.1 THRESHOLDS OF SIGNIFICANCE

Based on *Guidelines for the Implementation of California Environmental Quality Act*, Appendix G, Public Resource Code Sections 15000–15387, a project would normally be considered to have a significant effect on air quality if the project would violate any AAQS, contribute substantially to an existing air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

In addition to the federal and State AAQS, there are daily emissions thresholds for construction and operation of a proposed project in the Basin. The Basin is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its CEQA Handbook (April 1993) are used in this analysis. It should be noted that the emission thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

4.1.1 Regional Thresholds for Construction Emissions

The following CEQA significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day (lbs/day) of ROC
- 100 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_2

Projects in the Basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant under the SCAQMD guidelines.

4.1.2 Regional Thresholds for Operational Emissions

The daily operational emissions "significance" thresholds for the Basin are as follows.

- 55 lbs/day of ROC
- 55 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}

- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_2

Local Microscale Concentration Standards. The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

4.1.3 Thresholds for Localized Significance

LST screening analysis for construction is applicable to all projects of 5 acres (ac) or less. If emissions exceed the LST for a site 5 ac or less, dispersion modeling must be conducted. For sites larger than 5 ac, dispersion modeling needs to be conducted. The AAQS are used to determine the significance of LSTs, except for particulate matter, then the pollutant concentrations thresholds presented in SCAQMD Rules 403 and 1301 are used. The Rule 403 threshold of 10.4 $\mu g/m^3$ applies to construction emissions. The Rule 1301 threshold of 2.5 $\mu g/m^3$ applies to nonaggregate handling operational activities.

However, for the proposed General Plan Update, many of the vacant zones within the City, as identified in the Land Use Element and listed in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010) have a site area smaller than 5 ac, and the SCAQMD screening thresholds can used without the detailed dispersion modeling. Rancho Palos Verdes is located within SRA 3, Southwest Coastal Los Angeles County.[1] As a worst case scenario, it is assumed that the nearest existing sensitive receptor is less than 25 meters (m) (100 feet [ft]) away from the property line at each of the vacant zones identified. The SCAQMD recommends that all receptors at or within 25 m of a specific project site should utilize the LST values for receptors at 25 m (82 ft) from the project site. The following lists the screening emission thresholds for these vacant zones that are 5 acres or smaller in size.

Construction thresholds for a 1 ac site:

- 91 lbs/day of NO_X at 25 m
- 674 lbs/day of CO at 25 m
- 5 lbs/day of PM_{10} at 25 m
- 3 lbs/day of $PM_{2.5}$ at 25 m

1 www.aqmd.gov/ceqa/handbook/LST/LST.html.

Operational thresholds for a 1 ac site:

- 91 lbs/day of NO_X at 25 m
- 674 lbs/day of CO at 25 m
- 1 lb/day of PM_{10} at 25 m
- 1 lb/day of $PM_{2.5}$ at 25 m

Construction thresholds for a 2 ac site:

- 131 lbs/day of NO_X at 25 m
- 982 lbs/day of CO at 25 m
- 8 lbs/day of PM_{10} at 25 m
- 5 lbs/day of $PM_{2.5}$ at 25 m

Operational thresholds for a 2 ac site:

- 131 lbs/day of NO_X at 25 m
- 982 lbs/day of CO at 25 m
- 2 lbs/day of PM_{10} at 25 m
- 1 lb/day of $PM_{2.5}$ at 25 m

Construction thresholds for a 5 ac site:

- 197 lbs/day of NO_X at 25 m
- 1,823 lbs/day of CO at 25 m
- 15 lbs/day of PM_{10} at 25 m
- 8 lbs/day of $PM_{2.5}$ at 25 m

Operational thresholds for a 5 ac site:

- 197 lbs/day of NO_X at 25 m
- 1,823 lbs/day of CO at 25 m
- 4 lbs/day of PM_{10} at 25 m
- 2 lbs/day of $PM_{2.5}$ at 25 m

4.1.4 Global Climate Change

As the SCAQMD has recognized, the analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, significance thresholds are based on daily emissions because attainment or nonattainment is based on daily exceedances of applicable AAQS. Further, several ambient AAQS are based on relatively short-term exposure effects on human health (e.g., 1-hour and 8-hour). Since the half-life of CO_2 is approximately 100 years, for example, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate GHG effects over a longer time frame than a single day.

The recommended approach for GHG analysis included in OPR's June 2008 release is to: (1) identify and quantify GHG emissions, (2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below a level of significance.[1] The June 2008 OPR guidance provides some additional direction regarding planning documents as follows: "CEQA can be a more effective tool for GHG emissions analysis and mitigation if it is supported and supplemented by sound development policies and practices that will reduce GHG emissions on a broad planning scale and that can provide the basis for a programmatic approach to project-specific CEQA analysis and mitigation. For local government lead agencies, adoption of general plan policies and certification of general plan EIRs that analyze broad jurisdiction-wide impacts of GHG emissions can be part of an effective strategy for addressing cumulative impacts and for streamlining later project-specific CEQA reviews."

Pursuant to Senate Bill 97 (SB 97), OPR submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines for GHG emissions on April 13, 2009. These proposed CEQA Guideline amendments would provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency will conduct formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by SB 97. The Natural Resources Agency must certify and adopt the guidelines on or before January 1, 2010.

On December 30, 2009, the California Natural Resources Agency adopted CEQA Guidelines Amendments related to Climate Change. The amendments became effective on March 18, 2010, and state:

> (a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the Lead Agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:
>
> > (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

1 State of California, 2008. Governor's Office of Planning and Research. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review*. June 19.

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further, states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Individual projects incrementally contribute toward the potential for global climate change on a cumulative basis in concert with all other past, present, and probable future projects. While individual projects are unlikely to measurably affect global climate change, each project incrementally contributes toward the potential for global climate change on a cumulative basis, in concert with all other past, present, and probable future projects.

Revisions to Appendix G of the *CEQA Guidelines* suggest that the project be evaluated for the following impacts:

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

However, despite this, currently neither the CEQA statutes, OPR guidelines, nor the draft proposed changes to the CEQA Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the Lead Agency.

In this vacuum, on December 5, 2008, the SCAQMD adopted an interim GHG threshold of significance for projects where it is the Lead Agency using a tiered approach for determining significance.[1] The objective of the SCAQMD's interim GHG threshold of significance proposal is to achieve a GHG emission capture rate of 90 percent of all new or modified stationary source projects. SCAQMD asserts that a GHG threshold of significance based on a 90 percent emission capture rate is considered be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. SCAQMD further asserts that a 90 percent GHG emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. The following bullet points describe the basic structure of SCAQMD's tiered interim GHG significance threshold for stationary sources:

- **Tier 1** consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. For example, SB 97 specifically exempts a limited number of projects until it expires in 2010. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then it would move to the next tier.
- **Tier 2** consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing consistency determination requirements in CEQA Guidelines Sections 15064(h)(3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals, include an emissions inventory agreed upon by either ARB or the SCAQMD, have been analyzed under CEQA and have a certified Final CEQA document, and have monitoring and enforcement components. If the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan, there is no approved plan, or the GHG reduction plan does not include all of the components described above, the project would move to Tier 3.
- **Tier 3** establishes a screening significance threshold level to determine significance using a 90 percent GHG emission capture rate. The 90 percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the following methodology. Using the SCAQMD's Annual Emission Reporting (AER) Program, the reported annual natural gas consumption for 1,297 permitted facilities for 2006 through 2007 was compiled and the facilities were rank-ordered to estimate the 90th percentile of the cumulative natural gas usage for all permitted facilities. Approximately 10 percent of facilities evaluated comprise more than 90 percent of the total natural gas consumption, which corresponds to 10,000 metric tons of CO_2 equivalent emissions per year ($MTCO_2e$/yr) (the majority of combustion emissions comprise CO_2). At the November 5, 2009 Board meeting Staff recommended the following GHG screening thresholds: Residential: 3500 tpy CO_2e, Commercial: 1400 tpy CO_2e, Mixed use: 3000 tpy CO_2e. If a project's GHG emissions exceed the GHG screening threshold, the project would move to Tier 4.
- **Tier 4** establishes a decision tree approach that includes compliance options for projects that have incorporated design features into the project and/or implement GHG mitigation measures.

[1] SCAQMD Draft Guidance Document – *Interim CEQA Greenhouse Gas Significance Threshold*. October 2008.

- o Option No. 1: Reduction Target (percentage)
  - Max percentage reduction (land use sector reduction-23.9 percent, Scoping Plan overall reduction-28 percent)
  - Target updated as AB 32 Scoping Plan revised
  - Residual emissions not to exceed 25,000 mty CO_2e
  - Base case scenario to be defined
- o Option No. 2: Efficiency Target
  - 4.6 mt CO_2e per SP* for project level threshold (land use emissions only) and total residual emissions not to exceed 25,000 mty CO2e
  - 6.6 mt CO_2e per SP for plan level threshold (all sectors)

  If a project fails to meet any of these emissions reduction targets and efficiency targets, the project would move to Tier 5.

- **Tier 5** would require projects that implement off-site GHG mitigation that includes purchasing offsets to reduce GHG emission impacts to purchase sufficient offsets for the life of the project (30 years) to reduce GHG emissions to less than the applicable GHG screening threshold level.

The interim GHG significance threshold that was adopted by the SCAQMD Governing Board only applies to stationary source/industrial projects where the SCAQMD is the Lead Agency under CEQA. The types of projects that the significance threshold applies to include: SCAQMD rules, rule amendments, and plans (e.g., AQMPs). In addition, the SCAQMD may be the Lead Agency under CEQA for projects that require discretionary approval (i.e., projects that require air quality permits from the SCAQMD and that allow the SCAQMD to exercise discretion with regard to imposing permit conditions). However, because the project is an institutional use, the SCAQMD interim GHG significance threshold does not apply.

This air quality analysis analyzes whether the project's GHG emissions should be considered cumulatively significant based on the following:

- Hinder attainment of the State's goals of reducing GHG emissions to 1990 levels by 2020, as stated in the Global Warming Solutions Act of 2006. A project may be considered to help attainment of the State's goals by being consistent with an adopted Statewide 2020 GHG emissions limit or the plans, programs, and regulations adopted to implement the Global Warming Solutions Act of 2006.
- Fail to achieve increased energy efficiency or reduce overall GHG emissions from an existing facility.
- Significantly increase the consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.

The analysis uses compliance with AB 32, considered a "previously approved mitigation program," as set forth in the CEQA Guidelines Section 15064(h)(3) to determine if the project's incremental contribution of GHGs is a cumulatively considerable contribution to global climate change. OPR's proposed draft amendment to Section 15064.7 of the CEQA Guidelines reinforces the use of this approach. CEQA Guideline Section 15064(h)(3) states three main conditions that a plan must meet to be sufficient for use as a basis for determining significance of GHG emissions. The plan must:

1) Be "a previously approved plan or mitigation program"

2) Provide "specific requirements that will avoid or substantially lessen the cumulative problem"

3) "Be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

AB 32 meets conditions one and three provided above. Accordingly, in addition to determining whether the project's GHG emissions exceed the SCAQMD's interim industrial section stationary source threshold, In order to determine the significance of the project GHG emission impact on climate change, consistency or inconsistency with the reduction targets in AB 32 is also evaluated. To do so, project features that implement specific reduction measures identified in the rules and regulations that implement AB 32 were evaluated.

5.0 IMPACTS AND MITIGATION

Because of the nature of the proposed General Plan Update project, no specific construction activity is scheduled or identified for the vacant zones throughout the City. Although air pollutant emissions associated with construction of the individual project on the vacant zones would result in potential short term air quality impacts, such as fugitive dust from site preparation and grading, and emissions from equipment exhaust, no specific construction emissions are calculated due to the unknown nature of these future potential developments. There would be long-term regional emissions associated with growth-related vehicular trips from the development of these vacant zones. Long-term local CO emissions at intersections throughout the City that may be affected by these future developments within the City would not be significantly affected by the growth-related traffic. Long-term stationary source emissions would occur due to energy consumption such as electricity usage by the proposed land uses on these vacant zones.

5.1 CONSTRUCTION IMPACTS

5.1.1 Equipment Exhausts and Related Construction Activities

Construction activities produce combustion emissions from various sources such as demolition, site grading, utility engines, heavy-duty construction vehicles on each individual development site, equipment hauling materials to and from the individual development site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities envisioned on each of these individual future development site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions.

The ARB URBEMIS2007 model can be used to calculate the construction emissions, with a representative set of emissions sources that represent a peak day during the most intense of the construction phases. Construction emissions associated with these future potential development projects could exceed the daily emission threshold established by the SCAQMD.

5.1.2 Fugitive Dust

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, and cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. If soil will not be balanced on any of the individual development site, the need for import or export of soil during project construction would occur.

Construction emissions can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. Each individual proposed project will be required to comply with SCAQMD Rules 402 and 403 to control fugitive dust. There are a number of feasible control measures that can be reasonably implemented to significantly reduce PM_{10} emissions from construction.

5.1.3 Architectural Coatings

Architectural coatings contain VOCs that are similar to ROCs and are part of the O_3 precursors. No detailed architectural coatings information is available at this time for any of the individual future development project on the vacant zones. Compliance with SCAQMD Rule 1113 on the use of architectural coatings will minimize emissions.

5.1.4 Localized Significance Analysis - Construction

Because of the nature of the proposed General Plan Update project, no specific construction activity is scheduled or identified for any of the vacant zones throughout the City. During the environmental review process for these future potential development projects, one of the following localized significance analyses will need to be preformed: the SCAQMD's LST Screening Analysis for projects with land size of 5 acres of smaller, and the dispersion modeling for projects with land size larger than 5 acres.

5.1.5 Odors

Heavy-duty equipment during construction would emit odors. However, the construction activity would be short term and would cease to occur after construction on each of the future development site is completed.

SCAQMD Rule 402 regarding nuisances states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property." The proposed uses on each of the future development on the vacant zones throughout the City are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed General Plan Update project.

5.1.6 Naturally Occurring Asbestos

The proposed project is located in Los Angeles County, which is among the counties that are found to have serpentine and ultramafic rock in their soils. However, the City is not within the areas that have known serpentine and ultramafic rock in their soils. Therefore, the potential risk for encountering NOA during construction of the individual project on these vacant zones is small and less than significant.

5.2 LONG-TERM REGIONAL AIR QUALITY IMPACTS

5.2.1 Long-Term Project Operational Emissions

Long-term air emission impacts are those associated with stationary sources and mobile sources involving any growth-related changes from the proposed General Plan Update project. The individual projects on the vacant zones identified in the Land Use Element and listed in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010) within the General Plan Update would result in both stationary and mobile source emissions. The stationary source emissions would come from natural gas consumption, landscape maintenance, and off-site electric power generation. The ARB URBEMIS2007 model was used to calculate the operational emissions, as shown in Table F, which shows potential emissions of mobile sources for each of the land use category identified in the Traffic Impact Analysis projected on these vacant zones. The URBEMIS2007 model does not break out the stationary source emissions from each individual component and therefore Table F shows the aggregate emissions from stationary sources for all vacant zones. Table F shows that the aggregate emissions would result in daily emissions above the SCAQMD daily emission thresholds for CO, ROG, and NOx. Therefore, long-term air quality impacts associated with the proposed General Plan Update project would be significant.

Table F: General Plan Buildout Regional Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	**ROG**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Stationary Sources	98	170	61	0.12	1.6	1.5
Mobile Sources						
Single family housing	440	38	57	0.48	77	15
Condo/townhouse general	16	1.4	2.1	0.02	2.9	0.55
Retirement community	31	2.9	4.0	0.03	5.5	1.1
Day-care center	19	1.6	2.6	0.02	3.5	0.68
Junior college (2 yrs)	160	14	22	0.18	30	5.9
Library	51	4.5	6.9	0.06	9.4	1.8
Place of worship	40	3.6	5.5	0.04	7.4	1.4
General office building	7.8	0.68	1.0	0.01	1.4	0.27
Animal Hospital	25	2.2	3.4	0.03	4.6	0.89
Mausoleum	11	1.0	1.5	0.01	2.0	0.39
Senior Center	20	1.7	2.7	0.02	3.6	0.7
Total Mobile Sources	820	72	110	0.9	150	29
Total Project Emissions	**866**	**115**	**126**	**0.93**	**150**	**29**
SCAQMD Thresholds	**550**	**55**	**55**	**150**	**150**	**55**
Significant?	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**

Source: LSA Associates, Inc., February 2011

CO = carbon monoxide
lbs/day = pounds per day
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than 10 microns in diameter
ROCs = reactive organic compounds
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxide

5.2.2 Localized Significance Analysis - Operations

Because of the nature of the proposed General Plan Update project, no specific project operations for any of the vacant zones have been identified. Therefore, no site-specific LST analysis is conducted in this analysis. However, during the environmental review process for these future potential development projects, it is anticipated that the SCAQMD's LST Screening Analysis will be sufficient for the evaluation of operational LST and determine if any significant localized impacts would occur.

5.2.3 Greenhouse Gas Emissions

This section is not intended to provide an emissions inventory for the entire City on GHGs; rather, it evaluates potential impacts to global climate change that could result from implementation of the proposed General Plan Update project, which includes potential future development on vacant zones throughout the City, as identified in the Land Use Element and listed in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010). Because it is not possible to tie specific GHG emissions to actual changes in climate, this evaluation focuses on the emission of GHGs by these future individual projects identified in the General Plan Update. Mitigation measures are identified as appropriate.

Emissions estimates for the proposed General Plan Update project are discussed below. GHG emissions estimates are provided herein for informational purposes only, as there is no established quantified GHG emissions threshold. Bearing in mind that CEQA does not require "perfection" but instead "adequacy, completeness, and a good faith effort at full disclosure," the analysis below is based on methodologies and information available to the City at the time this analysis was prepared. Estimation of GHG emissions in the future does not account for all changes in technology that may reduce such emissions; therefore, the estimates are based on past performance and represent a scenario that is worse than that which is likely to be encountered (after energy-efficient technologies have been implemented). While information is presented below to assist the public and the City's decision makers in understanding the project's potential contribution to global climate change impacts, the information available to the City is not sufficiently detailed to allow a direct comparison between particular project characteristics and particular climate change impacts, nor between any particular proposed mitigation measure and any reduction in climate change impacts.

Construction and operation of these individual projects would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the operation of these projects (as opposed to during their construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings, and less than 20 percent is consumed during construction.[1] As of yet, there is no study that quantitatively assesses all the GHG emissions associated with each phase of the construction and use of an individual development.

Overall, the following activities associated with the proposed project could directly or indirectly contribute to the generation of GHG emissions:

[1] United Nations Environment Programme (UNEP), 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*, Paris, France.

- **Removal of Vegetation:** The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. However, planting of additional vegetation would result in additional carbon sequestration and would lower the carbon footprint of the project.
- **Construction Activities:** During construction of the individual project on the vacant zones, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O.
- **Gas, Electricity and Water Use:** Natural gas use results in the emissions of two GHGs: CH_4 (the major component of natural gas) and CO_2 (from the combustion of natural gas). Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive. Preliminary estimates indicate that the total energy used to pump and treat this water exceeds 6.5 percent of the total electricity used in the State per year.[1]
- **Solid Waste Disposal:** Solid waste generated by the future development projects on the vacant zones could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH_4 from the anaerobic decomposition of organic materials. CH_4 is 25 times more potent a GHG than CO_2. However, landfill CH_4 can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use:** Transportation associated with the projected growth in the proposed General Plan Update project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

GHG emissions associated with the individual projects projected in the General Plan Update would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with growth-related vehicular trips and stationary source emissions, such as natural gas used for heating. Preliminary guidance from OPR and recent letters from the Attorney General critical of CEQA documents that have taken different approaches indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, and construction activities. The calculation presented below includes construction emissions in terms of CO_2 and annual CO_2e GHG emissions from increased energy consumption, water usage, solid waste disposal, and estimated GHG emissions from vehicular traffic that would result from implementation of the project.

GHG emissions generated by future development on the vacant zones in the proposed General Plan Update project would predominantly consist of CO_2. In comparison to criteria air pollutants such as O_3 and PM_{10}, CO_2 emissions persist in the atmosphere for a substantially longer period of time. While emissions of other GHGs, such as CH_4, are important with respect to global climate change, emission

[1] California Energy Commission (CEC), 2004. *Water Energy Use in California* (online information sheet) Sacramento, CA, August 24. Website: energy.ca.gov/pier/iaw/industry/water.html. Accessed July 24, 2007.

levels of other GHGs are less dependent on the land use and circulation patterns associated with the proposed land use development project than are levels of CO_2.

Construction activities for potential development on each of the vacant zones produce combustion emissions from various sources such as site grading, utility engines, heavy-duty construction vehicles, equipment hauling materials to and from these individual sites, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities on each individual development site would vary daily as construction activity levels change.

The actual details of the future construction schedule for each of these vacant zones are not known. The only GHG with well-studied emissions characteristics and published emissions factors for construction equipment is CO_2. Each of the individual development projects located in the vacant zones would be required to implement the construction exhaust control measures listed in Section 5.6, including minimization of construction equipment idling and implementation of proper engine tuning and exhaust controls. Both of these measures would reduce GHG emissions during the construction period (but other measures may be required to further reduce GHG emissions).

Architectural coatings used in construction of these future individual project may contain VOCs that are similar to ROGs and are part of O_3 precursors. However, there are no significant emissions of GHGs from architectural coatings.

Long-term operations of future developments on the vacant zones in the proposed General Plan Update project would generate GHG emissions from area and mobile sources and indirect emissions from stationary sources associated with energy consumption. Mobile-source emissions of GHGs would include General Plan Update project-generated vehicle trips associated with proposed uses and/or visitors/deliveries to the individual project site. Area-source emissions would be associated with activities such as landscaping and maintenance of proposed land uses, natural gas for heating, and other sources. Increases in stationary source emissions would also occur at off-site utility providers as a result of demand for electricity, natural gas, and water by the proposed uses.

Table G shows the GHG emissions associated with the aggregate level of development envisioned on these vacant zones at build out of the General Plan Update project. Appendix D includes the worksheets for the GHG emissions.

Due to the global nature of this climate change phenomenon and the scale of the emissions, total emissions are expressed in units of teragrams (a trillion [10^{12}] grams or one million metric tons) per year (Tg/year). This is the standard metric unit used worldwide. As shown in Table G, the individual developments envisioned on the vacant zones combined will produce 22,000 metric tons per year of CO_2e, which is approximately 0.0022 Tg/year of CO_2e. As a comparison, the existing emissions from the entire SCAG region are estimated to be approximately 176.79 Tg/year of CO_2e and approximately 496.95 Tg/year of CO_2e for the entire State.

As described above, project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Consequently, it is speculative to determine how project-related GHG emissions would contribute to global climate change and how global climate change may impact the State. Therefore, project-related GHG emissions are not project-specific impacts to global warming but are instead the project's contribution to this cumulative impact.

Energy and Natural Gas Use. Buildings represent 39 percent of the United States' primary energy usage and 70 percent of electricity consumption.[1] The proposed General Plan Update project would increase the demand for electricity and natural gas due to the increased residential and commercial building area and the number of residents and employees. The project as a whole would indirectly result in increased GHG emissions from off-site electricity generation at power plants (a portion of 2,200 metric tons of CO_2e/year).

Table G: General Plan Buildout Greenhouse Gas Emissions

Emission Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	CO_2e
Vehicles[1]	15,000	0.59	1.2	15,000
Electricity Production	2,200	0.024	0.013	2,200
Natural Gas Combustion[1]	2,300	0.037	0.035	2,300
Solid Waste	1,200	--	--	1,200
Other Area Sources[2]	1,000	--	--	1,000
Total Annual Emissions	22,000	0.65	1.2	22,000

Source: LSA Associates, Inc., February 2011.
Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.
1 CO_2 emissions for vehicles and natural gas from URBEMIS 2007 output.
2 Includes CO_2 emissions for hearth combustion and landscaping equipment from URBEMIS 2007 output.
CH_4 = methane; CO_2e = carbon dioxide equivalent
CO_2 = carbon dioxide; N_2O = nitrous oxide

Water Use. Water-related energy use consumes 19 percent of the State's electricity every year.[2] Energy use and related GHG emissions are based on electricity used for water supply and conveyance, water treatment, water distribution, and wastewater treatment. The General Plan Update project would indirectly result in increased GHG emissions from the off-site electricity generation at power plants (the remainder of the 2,200 metric tons of CO_2e/year).

Solid Waste Disposal. The proposed General Plan Update project would also generate solid waste during the operation phase of the project after project build-out. Average waste generation rates from a variety of sources are available from the California Integrated Waste Management Board.[3] The future development on the vacant zones in General Plan Update project would collectively and indirectly result in increased GHG emissions from solid waste treatment at treatment plants (approximately 1,200 metric tons of CO_2e/year).

1 United States Department of Energy. 2003. *Buildings Energy Data Book.*
2 California, State of, 2005. California Energy Commission. California's Water-Energy Relationship. November.
3 California Integrated Waste Management Board, 2009. Estimated Solid Waste Generation Rates for Residential Developments. Available at http://www.ciwmb.ca.gov/wastechar/wastegenrates/Residential.htm.

Mobile Sources. Mobile sources (vehicle trips and associated miles traveled) are one of the largest sources of GHG emissions in California and represent approximately 69 percent of annual CO_2 emissions generated in the State. Like most land use development projects, vehicle miles traveled (VMT) is the most direct indicator of CO_2 emissions from the proposed General Plan Update project, and associated CO_2 emissions function as the best indicator of total GHG emissions.

Summary. The proposed project would generate up to 22,000 metric tons of CO_2e per year of new emissions, as shown in Table G. The emissions from solid waste disposal would comprise approximately 6.0 percent of the project's total CO_2e emissions. The emissions from vehicle exhaust would comprise approximately 69 percent of the project's total CO_2e emissions. The emissions from vehicle exhaust are controlled by the State and federal governments and are outside the control of the City.

The remaining CO_2e emissions are primarily associated with building heating systems and increased regional power plant electricity generation due to electrical demands. Specific development projects proposed under the General Plan Update project would comply with existing State and federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the General Plan Update project's electricity demand. The new buildings constructed in accordance with current energy efficiency standards would be more energy efficient than older buildings. However, in the absence of supplementary mitigation measures, the project would obstruct the implementation of GHG reduction goals under AB 32.

At present, there is a federal ban on CFCs; therefore, it is assumed the project would not generate emissions of CFCs. The project may emit a small amount of hydrofluorocarbon (HFC) emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the equipment. However, the details regarding refrigerants to be used in the project site are unknown at this time. Perfluorinated carbons (PFCs) and sulfur hexafluoride are typically used in industrial applications, none of which would be used on the project site. Therefore, it is not anticipated that the project would contribute significant emissions of these additional GHGs.

Implementation of the General Plan Update project could result in GHG emission levels that would substantially conflict with implementation of the GHG reduction goals under AB 32 or other State regulations. The California Environmental Protection Agency CAT and ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT's 2006 "*Report to Governor Schwarzenegger and the Legislature*," ARB's 2007 "*Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California*," and ARB's "*Climate Change Proposed Scoping Plan: a Framework for Change.*"

The reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32 that are applicable to proposed project. The Proposed Scoping Plan is the most recent document, and the strategies included in the Scoping Plan that apply to the project are contained in Table H, which also summarizes the extent to which the General Plan Update project

Table H: Compliance with Greenhouse Gas Emission Reduction Strategies

Strategy	Project Compliance
Energy Efficiency Measures	
Energy Efficiency. Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities). **Renewables Portfolio Standard.** Achieve a 33 percent renewable energy mix statewide. **Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Compliant with Mitigation Incorporated.** The proposed individual projects on the vacant zones would be required to comply with the updated Title 24 standards for building construction. In addition, the projects would be required to comply with the requirements of Minimization Measure GCC-1, identified below, including measures to incorporate energy-efficient building design features.
Water Conservation and Efficiency Measures	
Water Use Efficiency. Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.	**Compliant with Mitigation Incorporated.** The proposed individual projects on the vacant zones would be required to comply with the requirements of Minimization Measure GCC-1, identified below, including measures to increase water use efficiency.
Solid Waste Reduction Measures	
Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste. Increase waste diversion from landfills beyond the 50 percent mandate to provide for additional recovery of recyclable materials. Composting and commercial recycling could have substantial GHG reduction benefits. In the long term, zero-waste policies that would require manufacturers to design products to be fully recyclable may be necessary.	**Compliant with Mitigation Incorporated.** Data available from the CIWMB indicates that the City of Rancho Palos Verdes has not achieved the 50 percent diversion rate. The proposed General Plan Update project would be required to comply with Minimization Measure GCC-1, identified below, including measures to increase solid waste diversion, composting, and recycling.
Transportation and Motor Vehicle Measures	
Vehicle Climate Change Standards. AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles and light duty trucks. Regulations were adopted by ARB in September 2004. **Light-Duty Vehicle Efficiency Measures.** Implement additional measures that could reduce light-duty GHG emissions. For example, measures to ensure that tires are properly inflated can both reduce GHG emissions and improve fuel efficiency. **Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures.** Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure could also include hybridization of and increased engine efficiency of vehicles.	**Compliant.** The proposed General Plan Update project does not involve the manufacture, sale, or purchase of vehicles. However, vehicles that operate within the City on the individual project development sites would comply with any vehicle and fuel standards ARB adopts.

Table H: Compliance with Greenhouse Gas Emission Reduction Strategies

Strategy	Project Compliance
Low Carbon Fuel Standard. ARB identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.	
Regional Transportation-Related Greenhouse Gas Targets. Develop regional GHG emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle GHG emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces GHGs associated with vehicle travel.	**Compliant.** Specific regional emissions targets for transportation emissions do not directly apply to this General Plan Update project; regional GHG reduction target development is outside the scope of this project. The General Plan Update project will comply with any plans developed by the Los Angeles County or SCAG.
Measures to Reduce High Global Warming Potential (GWP) Gases. ARB has identified Discrete Early Action measures to reduce GHG emissions from the refrigerants used in car air conditioners, semiconductor manufacturing, and consumer products. ARB has also identified potential reduction opportunities for future commercial and industrial refrigeration, changing the refrigerants used in auto air conditioning systems, and ensuring that existing car air conditioning systems do not leak.	**Compliant.** New products used or serviced on the project sites (after implementation of the reduction of GHGs) would comply with future ARB rules and regulations.

Source: LSA Associates, Inc., August 2010.
ARB = California Air Resources Board
CIWMB = California Integrated Waste Management Board
GHG = greenhouse gas
SCAG = Southern California Association of Governments

would comply with the strategies to help California reach the emission reduction targets. Table G shows this General Plan Update project is expected to produce approximately 22,000 metric tons of CO_2e per year, or 0.0022 $MMTCO_2E$ per year; thus, none of Measure 11 applies to this project.

The strategies listed in Table H are either part of the General Plan Update project, required mitigation measures, or requirements under local or State ordinances. With implementation of these strategies/measures, the project's contribution to cumulative GHG emissions would be reduced.

In order to ensure that the proposed General Plan Update project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, the Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, Minimization Measure GCC-1 shall be implemented. Many of the individual elements of this measure are already included as part of the proposed General Plan Update project or are required as part of project-specific mitigation measures.

5.3 LONG-TERM MICROSCALE (CO HOT-SPOT) ANALYSIS

Vehicular trips associated with the proposed individual projects on the vacant zones throughout the City would contribute to congestion at intersections and along roadway segments in the vicinity of these vacant zones. Localized air quality impacts would occur when emissions from vehicular traffic increase in local areas as a result of the future individual projects. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the North Long Beach Station, the closest station with monitored CO data, showed a highest recorded 1-hour concentration of 4.2 ppm (State standard is 20 ppm) and a highest 8-hour concentration of 3.4 ppm (State standard is 9 ppm) during the past 3 years (see Table E).

The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Based on the same TIA used for the long-term regional analysis above, and since no separate peak-hour intersection turn volumes were analyzed for the four individual projects, CO hot-spot analyses were conducted for existing and General Plan build out with and without project conditions. The impact on local CO levels was assessed with ARB approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of CO, often termed "hot spots." A brief discussion of input to the CALINE4 model follows. The analysis was performed for the worst-case wind angle and wind speed condition and is based upon the following assumptions:

- Selected modeling locations represent the intersections closest to the project site, with the highest project-related vehicle turning movements and the worst level of service deterioration.
- Twenty receptor locations with the possibility of extended outdoor exposure from 7 to 17 m (approximately 23 to 56 ft) of the roadway centerline near intersections were modeled to determine CO concentrations, following Caltrans CO modeling protocol.
- The calculations assume a meteorological condition of almost no wind (0.5 m/second), a suburban topographical condition between the source and receptor, and a mixing height of 1,000 m, representing a worst-case scenario for CO concentrations.
- CO concentrations are calculated for the 1-hour averaging period and then compared to the 1-hour standards. CO 8-hour averages are extrapolated using techniques outlined in the SCAQMD

CEQA Handbook (updated April 1993) and compared to the 8-hour standards; a persistence factor of 0.7 was used to predict the 8-hour concentration.

- Concentrations are given in parts per million at each of the receptor locations.
- The “at-grade” link option with speed adjusted based on average cruise speed and number of vehicles per lane per hour was used rather than the “intersection” link selection in the CALINE4 model (Caltrans has suggested that the “intersection” link should not be used due to an inappropriate algorithm based on outdated vehicle distribution.) Emission factors from the EMFAC2007 model were used for the vehicle fleet.
- The highest levels of the second highest 1-hour and 8-hour CO concentrations monitored at the North Long Beach Station in the past 3 years were used as background concentrations (4.0 ppm for the 1-hour CO and 3.3 ppm for the 8-hour CO), as specified in Appendix B of the Caltrans CO Protocol. The “background” concentrations are then added to the model results for future with and without the proposed project conditions.

Table I lists the CO concentrations at 22 existing signalized intersections analyzed in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010) for the existing and General Plan Buildout scenarios. As shown in Table I, under the existing conditions, the intersections analyzed for the daily peak hour would experience 1-hour and 8-hour CO concentrations below the federal and State standards. The existing CO concentrations are from current traffic in the vicinity of these intersections. Table I also shows that the CO concentrations under the General Plan build out scenario would result in at most a 1 ppm increase to the 1-hour and 8-hour CO concentrations, respectively, and all CO concentrations would be below the corresponding State and federal CO standards. Because no CO hot spots would occur, the proposed General Plan Update project would not have a significant impact on local air quality for CO, and no mitigation measures would be required.

Table I: Existing vs General Plan Buildout CO Concentrations from Traffic

Intersection	Distance from Road Centerline to Maximum CO Concentration Existing/Buildout (Meters)	Existing/Buildout One-Hour CO Concentration (ppm)	Project Related One-Hour CO Concentration Increase (ppm)	Existing/Buildout Eight-Hour CO Concentration (ppm)	Project Related Eight-Hour CO Concentration Increase (ppm)	Exceeds State Standards	
						1-Hr (20 ppm)	8-Hr (9 ppm)
Palos Verdes Drive West and Hawthorne Boulevard	8 / 8	4.9 / 5.9	1.0	3.9 / 4.6	0.7	No	No
	8 / 14	4.8 / 5.6	0.8	3.9 / 4.4	0.5	No	No
	14 / 8	4.8 / 5.5	0.7	3.9 / 4.4	0.5	No	No
	14 / 14	4.8 / 5.5	0.7	3.9 / 4.4	0.5	No	No
Palos Verdes Drive West and Lower Point Vicente Park Entrance	7 / 7	4.7 / 5.3	0.6	3.8 / 4.2	0.4	No	No
	7 / 14	4.6 / 5.2	0.6	3.7 / 4.1	0.4	No	No
	7 / 7	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No
	7 / 14	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No
Via Rivera and Hawthorne Boulevard	8 / 8	4.7 / 5.2	0.5	3.8 / 4.1	0.3	No	No
	8 / 17	4.6 / 5.2	0.6	3.7 / 4.1	0.4	No	No
	8 / 8	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No
	17 / 8	4.6 / 5.0	0.4	3.7 / 4.0	0.3	No	No
Hawthorne Boulevard and Eddinghill Drive – Seamount	8 / 14	5.0 / 4.9	-0.1	4.0 / 3.9	-0.1	No	No
	14 / 8	5.0 / 4.8	-0.2	4.0 / 3.9	-0.1	No	No
	8 / 8	4.9 / 4.8	-0.1	3.9 / 3.9	0.0	No	No
	14 / 8	4.8 / 4.8	0.0	3.9 / 3.9	0.0	No	No
Hawthorne Boulevard and Crest Rd.	14 / 14	4.8 / 5.4	0.6	3.9 / 4.3	0.4	No	No
	14 / 14	4.8 / 5.3	0.5	3.9 / 4.2	0.3	No	No
	17 / 14	4.8 / 5.2	0.4	3.9 / 4.1	0.2	No	No
	14 / 15	4.7 / 5.2	0.5	3.8 / 4.1	0.3	No	No
Hawthorne Boulevard and Dupre Drive – R. E. Ryan Park Driveway	8 / 14	4.7 / 5.4	0.7	3.8 / 4.3	0.5	No	No
	10 / 8	4.7 / 5.3	0.6	3.8 / 4.2	0.4	No	No
	14 / 10	4.7 / 5.3	0.6	3.8 / 4.2	0.4	No	No
	10 / 8	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No
Hawthorne Boulevard and Vallon Drive	10 / 10	4.7 / 5.3	0.6	3.8 / 4.2	0.4	No	No
	17 / 17	4.7 / 5.3	0.6	3.8 / 4.2	0.4	No	No
	10 / 8	4.6 / 5.2	0.6	3.7 / 4.1	0.4	No	No
	8 / 17	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No

Crestmont Lane – Terranea Way and Palos Verdes Drive	12 / 12	4.6 / 5.3	0.7	3.7 / 4.2	0.5	No	No
	8 / 17	4.6 / 5.2	0.6	3.7 / 4.1	0.4	No	No
	15 / 8	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No
	17 / 14	4.6 / 5.1	0.5	3.7 / 4.1	0.4	No	No
Gravania Altamira – Ridgegate Drive and Hawthorne Boulevard	14 / 14	5.5 / 6.6	1.1	4.4 / 5.1	0.7	No	No
	17 / 17	5.3 / 6.6	1.3	4.2 / 5.1	0.9	No	No
	10 / 14	5.2 / 6.5	1.3	4.1 / 5.1	1.0	No	No
	10 / 10	5.2 / 6.4	1.2	4.1 / 5.0	0.9	No	No
Grayslake Road – Highridge Road and Hawthorne Boulevard	14 / 14	5.8 / 5.8	0.0	4.6 / 4.6	0.0	No	No
	17 / 17	5.8 / 5.8	0.0	4.6 / 4.6	0.0	No	No
	14 / 14	5.7 / 5.7	0.0	4.5 / 4.5	0.0	No	No
	14 / 14	5.6 / 5.6	0.0	4.4 / 4.4	0.0	No	No
Highridge Road and Crest Rd.	12 / 12	4.5 / 4.9	0.4	3.7 / 3.9	0.2	No	No
	12 / 14	4.5 / 4.9	0.4	3.7 / 3.9	0.2	No	No
	14 / 12	4.5 / 4.8	0.3	3.7 / 3.9	0.2	No	No
	14 / 14	4.5 / 4.8	0.3	3.7 / 3.9	0.2	No	No
Silver Spur Road and Basswood Avenue	12 / 12	4.6 / 4.7	0.1	3.7 / 3.8	0.1	No	No
	12 / 12	4.6 / 4.7	0.1	3.7 / 3.8	0.1	No	No
	12 / 12	4.6 / 4.7	0.1	3.7 / 3.8	0.1	No	No
	12 / 12	4.5 / 4.6	0.1	3.7 / 3.7	0.0	No	No
Hawthorne Boulevard and Blackhorse Road	14 / 14	5.3 / 5.9	0.6	4.2 / 4.6	0.4	No	No
	7 / 7	5.2 / 5.8	0.6	4.1 / 4.6	0.5	No	No
	7 / 7	5.2 / 5.7	0.5	4.1 / 4.5	0.4	No	No
	7 / 7	5.1 / 5.6	0.5	4.1 / 4.4	0.3	No	No
Crenshaw Boulevard and Indian Peak Road	12 / 12	5.3 / 6.0	0.7	4.2 / 4.7	0.5	No	No
	14 / 14	5.2 / 5.7	0.5	4.1 / 4.5	0.4	No	No
	7 / 7	5.0 / 5.6	0.6	4.0 / 4.4	0.4	No	No
	14 / 14	5.0 / 5.5	0.5	4.0 / 4.4	0.4	No	No
Crenshaw Boulevard and Crestridge Road	12 / 12	5.3 / 5.7	0.4	4.2 / 4.5	0.3	No	No
	10 / 10	5.1 / 5.7	0.6	4.1 / 4.5	0.4	No	No
	17 / 12	5.1 / 5.4	0.3	4.1 / 4.3	0.2	No	No
	10 / 12	4.9 / 5.3	0.4	3.9 / 4.2	0.3	No	No
Crenshaw Boulevard and Crest Road	10 / 10	5.0 / 5.8	0.8	4.0 / 4.6	0.6	No	No
	14 / 14	4.9 / 5.6	0.7	3.9 / 4.4	0.5	No	No
	10 / 10	4.8 / 5.5	0.7	3.9 / 4.4	0.5	No	No

	10 / 10	4.8 / 5.4	0.6	3.9 / 4.3	0.4	No	No
Forrestal Drive – Ocean Trails Drive and Palos Verdes Drive South	12 / 14	4.8 / 5.6	0.8	3.9 / 4.4	0.5	No	No
	14 / 12	4.8 / 5.5	0.7	3.9 / 4.4	0.5	No	No
	14 / 14	4.8 / 5.5	0.7	3.9 / 4.4	0.5	No	No
	12 / 14	4.7 / 5.5	0.8	3.8 / 4.4	0.6	No	No
Palos Verdes Drive East and Miraleste Drive	7 / 7	5.3 / 5.7	0.4	4.2 / 4.5	0.3	No	No
	12 / 7	5.3 / 5.6	0.3	4.2 / 4.4	0.2	No	No
	7 / 12	5.3 / 5.6	0.3	4.2 / 4.4	0.2	No	No
	7 / 7	5.1 / 5.4	0.3	4.1 / 4.3	0.2	No	No
Palos Verdes Drive East and Crest Road – Marymount College Driveway	10 / 8	4.4 / 4.6	0.2	3.6 / 3.7	0.1	No	No
	8 / 10	4.4 / 4.6	0.2	3.6 / 3.7	0.1	No	No
	17 / 10	4.4 / 4.5	0.1	3.6 / 3.7	0.1	No	No
	10 / 8	4.3 / 4.5	0.2	3.5 / 3.7	0.2	No	No
Palos Verdes Drive East and Palos Verdes Drive South	7 / 12	4.8 / 5.6	0.8	3.9 / 4.4	0.5	No	No
	12 / 7	4.8 / 5.5	0.7	3.9 / 4.4	0.5	No	No
	7 / 7	4.8 / 5.4	0.6	3.9 / 4.3	0.4	No	No
	12 / 10	4.8 / 5.4	0.6	3.9 / 4.3	0.4	No	No
Miraleste Drive and 1st Street	7 / 7	4.7 / 5.0	0.3	3.8 / 4.0	0.2	No	No
	12 / 12	4.7 / 4.9	0.2	3.8 / 3.9	0.1	No	No
	12 / 12	4.6 / 4.9	0.3	3.7 / 3.9	0.2	No	No
	7 / 7	4.6 / 4.8	0.2	3.7 / 3.9	0.2	No	No
Western Avenue and Toscanini Drive	14 / 14	5.7 / 6.0	0.3	4.5 / 4.7	0.2	No	No
	10 / 10	5.6 / 5.9	0.3	4.4 / 4.6	0.2	No	No
	17 / 10	5.6 / 5.9	0.3	4.4 / 4.6	0.2	No	No
	10 / 14	5.5 / 5.4	-0.1	4.4 / 4.3	-0.1	No	No

Source: LSA Associates, Inc., August 2010.
Includes ambient one-hour concentration of 4.0 ppm and ambient eight-hour concentration of 3.3 ppm. Measured at the 3648 N. Long Beach Blvd., Long Beach, CA AQ Station in Los Angeles County.
CO = carbon monoxide Hr = hour ppm = parts per million

5.4 AIR QUALITY MANAGEMENT PLAN CONSISTENCY

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. It fulfills the CEQA goal of fully informing local agency decision makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The project is proposed to update and amend the City's General Plan and Zoning Designations, which will then not be consistent with the SCAG RCP Guidelines and the SCAQMD AQMP that incorporate the previous City General Plan and Zoning Designations. Until the City approves the new General Plan and the SCAG and SCAQMD review, approve and incorporate it into their regional plans, the proposed project is not consistent with the General Plan and the regional RCP and AQMP. This is a potentially significant impact.

5.5 STANDARD CONDITIONS

5.5.1 Construction Impacts

Each of the proposed individual projects on the vacant zones identified in the Land Use Element and listed in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010) is required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best-available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on sensitive receptors in the vicinity of these individual projects.

The applicable Rule 403 measures are as follows:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 m (2 ft) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code (CVC) section 23114.
- Pave construction access roads at least 30 m (100 ft) onto the site from the main road.
- Reduce traffic speeds on all unpaved roads to 15 mph or less.

5.5.2 Project Operations

The General Plan Update project would result in total (vehicular and stationary) daily emissions that exceed the daily emissions thresholds established by the SCAQMD. The emissions from vehicle exhaust are controlled by the State and federal governments and are outside the control of the City. The proposed General Plan Update project is required to comply with Title 24 of the California Code of Regulations established by the Energy Commission regarding energy conservation standards. The following shall be incorporated in building plans for the future development on the vacant zones:

- Low-emission water heaters shall be used. Solar water heaters are encouraged.
- Exterior windows shall utilize window treatments for efficient energy conservation

5.6 MITIGATION MEASURES

5.6.1 Construction Impacts

The following measures shall be incorporated in the environmental review process for future developments on the vacant zones throughout the City, identified in the Land Use Element and listed in the Traffic Impact Analysis:

A. The following dust suppression measures in the SCAQMD’s CEQA Handbook are included as part of the construction mitigation:

  - Revegetate disturbed areas as quickly as possible.
  - Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.
  - Sweep all streets once per day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).
  - Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site.
  - Pave, water, or chemically stabilize all on-site roads as soon as feasible.
  - Minimize at all time the area disturbed by clearing, grading, earthmoving, or excavation operations.

B. The Construction Contractor shall select the construction equipment used based on low-emission factors and high energy efficiency. The Construction Contractor shall ensure that construction grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer’s specifications. In addition, all trucks shall not idle continuously for more than 5 minutes at any one time.

C. The Construction Contractor shall utilize electric or alternative-fuel-powered equipment in lieu of gasoline- or diesel-powered engines where feasible.

D. The Construction Contractor shall ensure that construction grading plans include a statement that work crews will shut off equipment not in use. During smog season (May through October), the overall length of the construction period will be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.

E. The Construction Contractor shall time the construction activities so as to not interfere with peak-hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flagperson shall be retained to maintain safety adjacent to existing roadways.

F. The Construction Contractor shall support and encourage ridesharing and transit incentives for the construction crew.

5.6.2 Global Climate Change Impacts

Minimization Measure GCC-1. To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the individual future development projects (including specific building projects) on the vacant zones:

Construction and Building Materials.

- Use locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project;
- Recycle/reuse at least 50 percent of the demolished construction material (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard); and
- Use "Green Building Materials," such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way for at least 10 percent of the project.

Energy Efficiency Measures.

- Design all project buildings to exceed California Building Code's Title 24 energy standard, including, but not limited to any combination of the following:
    - Increase insulation such that heat transfer and thermal bridging is minimized;
    - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption; and
    - Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances or other applicable electrical equipment.
- Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping;
- Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings;
- Install light colored "cool" roofs and cool pavements;
- Install energy efficient heating and cooling systems, appliances and equipment, and control systems; and
- Install solar or light-emitting diodes (LEDs) for outdoor lighting.

Water Conservation and Efficiency Measures.

- Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include the following, plus other innovative measures that might be appropriate:
    - Create water-efficient landscapes within the development;
    - Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls;
    - Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water;
    - Design buildings to be water-efficient. Install water-efficient fixtures and appliances, including low-flow faucets, dual-flush toilets and waterless urinals; and
    - Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff.

Solid Waste Measures.

- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas; and
- Provide employee education about reducing waste and available recycling services.

In addition, the project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. After implementation of Minimization Measure GCC-1 and application of regulatory requirements, the project would implement appropriate GHG reduction strategies and would not conflict with or impede implementation of reduction goals identified in AB 32, the Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. Therefore, the contribution of the General Plan Update to cumulative GHG emissions would be reduced to a less than significant level.

5.7 CUMULATIVE IMPACTS

The individual projects included in the General Plan Update would contribute criteria pollutants to the area during temporary project construction. Emissions during construction of individual development on the vacant zones could potentially exceed the criteria pollutant thresholds established by the SCAQMD if two or more individual developments are under construction at the same time with similar schedules. However, given that this is a General Plan covering a 30 year planning period and the individual projects could be constructed any time during that period, the likelihood of concurrent construction is low. Additionally, compliance with SCAQMD rules and regulations during construction will minimize construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Depending on the location of these vacant zones and the proximity of adjacent sensitive uses, each proposed General Plan Update project alone could potentially exceed the localized significance thresholds (LSTs) during construction. Construction emissions associated with development at the vacant zones identified in the General Plan Update could thus be potentially significant.

The aggregate long-term operational emissions from future development on the vacant zones would result in daily emissions above the SCAQMD daily emission thresholds for CO, ROG, and NOx. Therefore, long-term air quality impacts associated with the proposed General Plan Update project would be significant.

5.8 IMPACTS TO THE PROPOSED PROJECT FROM GLOBAL CLIMATE CHANGE

Local temperatures could increase in time as a result of global climate change, with or without development as envisioned by the General Plan Update project. This increase in temperature could lead to other climate effects including, but not limited to, increased flooding due to increased precipitation and runoff. At present, the extent of climate change impacts is uncertain, and more extensive monitoring of runoff is necessary for greater understanding of changes in hydrologic patterns. Studies indicate that increased temperatures could result in a greater portion of peak streamflows occurring earlier in the spring, with decreases in late spring and early summer. These changes could have implications for water supply, flood management, and ecosystem health. In addition, there is a potential for sea level rising due to global warming. Based on the location of the City, the proposed General Plan Update project may be significantly affected by global climate change for its coastal areas.

6.0 REFERENCES

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South Coast Air Quality Management District. Air Quality Management Plan. 2007.

South Coast Air Quality Management District. *CEQA Air Quality Handbook*. April 1993.

South Coast Air Quality Management District. *Final Localized Significance Threshold Methodology*. June 2003, Revised July 2008.

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South Coast Air Quality Management District. *Rule 701*. June 13, 1997.

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APPENDIX A

URBEMIS2007 MODEL PRINTOUTS

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\PVE0701\Modeling\GPBO-Rev.urb924

Project Name: Rancho Palos Verdes General Plan Buildout

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	42.93	11.61	45.60	0.00	0.14	0.14	14,132.56
TOTALS (lbs/day, mitigated)	42.93	11.61	45.60	0.00	0.14	0.14	14,132.56
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	66.17	90.54	821.64	0.90	147.74	28.77	88,274.34
TOTALS (lbs/day, mitigated)	66.17	90.54	821.64	0.90	147.74	28.77	88,274.34
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	109.10	102.15	867.24	0.90	147.88	28.91	102,406.90
TOTALS (lbs/day, mitigated)	109.10	102.15	867.24	0.90	147.88	28.91	102,406.90
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.85	11.13	5.51	0.00	0.02	0.02	14,064.91
Hearth - No Summer Emissions							
Landscape	5.68	0.48	40.09	0.00	0.12	0.12	67.65
Consumer Products	29.70						
Architectural Coatings	6.70						
TOTALS (lbs/day, unmitigated)	42.93	11.61	45.60	0.00	0.14	0.14	14,132.56

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.85	11.13	5.51	0.00	0.02	0.02	14,064.91
Hearth - No Summer Emissions							
Landscape	5.68	0.48	40.09	0.00	0.12	0.12	67.65
Consumer Products	29.70						
Architectural Coatings	6.70						
TOTALS (lbs/day, mitigated)	42.93	11.61	45.60	0.00	0.14	0.14	14,132.56

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	35.27	47.31	436.83	0.48	77.28	15.06	46,328.14
Condo/townhouse general	1.37	1.74	16.10	0.02	2.85	0.55	1,707.02
Retirement community	2.89	3.35	30.91	0.03	5.47	1.07	3,278.38
Day-care center	1.44	2.16	19.11	0.02	3.52	0.68	2,092.93
Junior college (2 yrs)	12.76	18.60	164.57	0.18	30.30	5.90	18,020.39
Library	4.01	5.74	50.78	0.06	9.35	1.82	5,560.50
Place of worship	3.40	4.53	40.00	0.04	7.38	1.44	4,384.52

General office building	0.62	0.86	7.76	0.01	1.41	0.27	839.21
Animal Hospital	1.89	2.80	25.15	0.03	4.58	0.89	2,729.14
Mausoleum	1.00	1.24	10.92	0.01	2.01	0.39	1,197.38
Senior Center	1.52	2.21	19.51	0.02	3.59	0.70	2,136.73
TOTALS (lbs/day, unmitigated)	66.17	90.54	821.64	0.90	147.74	28.77	88,274.34

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	35.27	47.31	436.83	0.48	77.28	15.06	46,328.14
Condo/townhouse general	1.37	1.74	16.10	0.02	2.85	0.55	1,707.02
Retirement community	2.89	3.35	30.91	0.03	5.47	1.07	3,278.38
Day-care center	1.44	2.16	19.11	0.02	3.52	0.68	2,092.93
Junior college (2 yrs)	12.76	18.60	164.57	0.18	30.30	5.90	18,020.39
Library	4.01	5.74	50.78	0.06	9.35	1.82	5,560.50
Place of worship	3.40	4.53	40.00	0.04	7.38	1.44	4,384.52
General office building	0.62	0.86	7.76	0.01	1.41	0.27	839.21
Animal Hospital	1.89	2.80	25.15	0.03	4.58	0.89	2,729.14
Mausoleum	1.00	1.24	10.92	0.01	2.01	0.39	1,197.38
Senior Center	1.52	2.21	19.51	0.02	3.59	0.70	2,136.73
TOTALS (lbs/day, mitigated)	66.17	90.54	821.64	0.90	147.74	28.77	88,274.34

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	154.00	9.58	dwelling units	462.00	4,425.96	44,714.59
Condo/townhouse general	1.69	6.04	dwelling units	27.00	163.08	1,647.56
Retirement community	18.00	3.48	dwelling units	90.00	313.20	3,164.20
Day-care center		79.26	1000 sq ft	2.83	224.31	2,037.26
Junior college (2 yrs)		24.92	1000 sq ft	77.50	1,931.30	17,541.03
Library		16.93	1000 sq ft	35.20	595.94	5,412.59
Place of worship		7.59	1000 sq ft	62.43	473.84	4,269.09
General office building		11.06	1000 sq ft	7.23	79.96	813.83
Animal Hospital		46.88	1000 sq ft	5.76	270.03	2,649.66
Mausoleum		4.76	acres	27.30	129.95	1,166.02
Senior Center		22.90	1000 sq ft	10.00	229.00	2,079.89
					8,836.57	85,495.72

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	0.8	99.0	0.2
Light Truck < 3750 lbs	7.3	2.7	94.6	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	64.3	35.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Day-care center				5.0	2.5	92.5
Junior college (2 yrs)				5.0	2.5	92.5
Library				5.0	2.5	92.5
Place of worship				3.0	1.5	95.5
General office building				35.0	17.5	47.5
Animal Hospital				25.0	12.5	62.5
Mausoleum				2.0	1.0	97.0
Senior Center				5.0	2.5	92.5

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\PVE0701\Modeling\GPBO-Rev.urb924

Project Name: Rancho Palos Verdes General Plan Buildout

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	37.53	15.86	7.52	0.03	0.40	0.40	20,100.20
TOTALS (lbs/day, mitigated)	37.53	15.86	7.52	0.03	0.40	0.40	20,100.20
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	72.03	109.04	787.60	0.76	147.74	28.77	79,949.77
TOTALS (lbs/day, mitigated)	72.03	109.04	787.60	0.76	147.74	28.77	79,949.77
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	109.56	124.90	795.12	0.79	148.14	29.17	100,049.97
TOTALS (lbs/day, mitigated)	109.56	124.90	795.12	0.79	148.14	29.17	100,049.97
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.85	11.13	5.51	0.00	0.02	0.02	14,064.91
Hearth	0.28	4.73	2.01	0.03	0.38	0.38	6,035.29
Landscaping - No Winter Emissions							
Consumer Products	29.70						
Architectural Coatings	6.70						
TOTALS (lbs/day, unmitigated)	37.53	15.86	7.52	0.03	0.40	0.40	20,100.20

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.85	11.13	5.51	0.00	0.02	0.02	14,064.91
Hearth	0.28	4.73	2.01	0.03	0.38	0.38	6,035.29
Landscaping - No Winter Emissions							
Consumer Products	29.70						
Architectural Coatings	6.70						
TOTALS (lbs/day, mitigated)	37.53	15.86	7.52	0.03	0.40	0.40	20,100.20

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	38.13	57.01	417.60	0.40	77.28	15.06	41,974.35
Condo/townhouse general	1.44	2.10	15.39	0.01	2.85	0.55	1,546.60
Retirement community	2.88	4.03	29.55	0.03	5.47	1.07	2,970.29
Day-care center	1.64	2.60	18.40	0.02	3.52	0.68	1,894.57
Junior college (2 yrs)	14.32	22.39	158.44	0.15	30.30	5.90	16,312.45
Library	4.45	6.91	48.89	0.05	9.35	1.82	5,033.49
Place of worship	3.62	5.45	38.54	0.04	7.38	1.44	3,968.84

General office building	0.68	1.03	7.41	0.01	1.41	0.27	759.97
Animal Hospital	2.15	3.37	24.07	0.02	4.58	0.89	2,471.15
Mausoleum	1.02	1.49	10.52	0.01	2.01	0.39	1,083.84
Senior Center	1.70	2.66	18.79	0.02	3.59	0.70	1,934.22
TOTALS (lbs/day, unmitigated)	72.03	109.04	787.60	0.76	147.74	28.77	79,949.77

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	38.13	57.01	417.60	0.40	77.28	15.06	41,974.35
Condo/townhouse general	1.44	2.10	15.39	0.01	2.85	0.55	1,546.60
Retirement community	2.88	4.03	29.55	0.03	5.47	1.07	2,970.29
Day-care center	1.64	2.60	18.40	0.02	3.52	0.68	1,894.57
Junior college (2 yrs)	14.32	22.39	158.44	0.15	30.30	5.90	16,312.45
Library	4.45	6.91	48.89	0.05	9.35	1.82	5,033.49
Place of worship	3.62	5.45	38.54	0.04	7.38	1.44	3,968.84
General office building	0.68	1.03	7.41	0.01	1.41	0.27	759.97
Animal Hospital	2.15	3.37	24.07	0.02	4.58	0.89	2,471.15
Mausoleum	1.02	1.49	10.52	0.01	2.01	0.39	1,083.84
Senior Center	1.70	2.66	18.79	0.02	3.59	0.70	1,934.22
TOTALS (lbs/day, mitigated)	72.03	109.04	787.60	0.76	147.74	28.77	79,949.77

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	154.00	9.58	dwelling units	462.00	4,425.96	44,714.59
Condo/townhouse general	1.69	6.04	dwelling units	27.00	163.08	1,647.56
Retirement community	18.00	3.48	dwelling units	90.00	313.20	3,164.20
Day-care center		79.26	1000 sq ft	2.83	224.31	2,037.26
Junior college (2 yrs)		24.92	1000 sq ft	77.50	1,931.30	17,541.03
Library		16.93	1000 sq ft	35.20	595.94	5,412.59
Place of worship		7.59	1000 sq ft	62.43	473.84	4,269.09
General office building		11.06	1000 sq ft	7.23	79.96	813.83
Animal Hospital		46.88	1000 sq ft	5.76	270.03	2,649.66
Mausoleum		4.76	acres	27.30	129.95	1,166.02
Senior Center		22.90	1000 sq ft	10.00	229.00	2,079.89
					8,836.57	85,495.72

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	0.8	99.0	0.2
Light Truck < 3750 lbs	7.3	2.7	94.6	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	64.3	35.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Day-care center				5.0	2.5	92.5
Junior college (2 yrs)				5.0	2.5	92.5
Library				5.0	2.5	92.5
Place of worship				3.0	1.5	95.5
General office building				35.0	17.5	47.5
Animal Hospital				25.0	12.5	62.5
Mausoleum				2.0	1.0	97.0
Senior Center				5.0	2.5	92.5

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\PVE0701\Modeling\GPBO-Rev.urb924

Project Name: Rancho Palos Verdes General Plan Buildout

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	7.84	2.12	8.33	0.00	0.02	0.02	2,582.22
TOTALS (tons/year, mitigated)	7.84	2.12	8.33	0.00	0.02	0.02	2,582.22
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	12.43	17.65	147.87	0.14	26.98	5.24	15,603.64
TOTALS (tons/year, mitigated)	12.43	17.65	147.87	0.14	26.98	5.24	15,603.64
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	20.27	19.77	156.20	0.14	27.00	5.26	18,185.86
TOTALS (tons/year, mitigated)	20.27	19.77	156.20	0.14	27.00	5.26	18,185.86
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.16	2.03	1.01	0.00	0.00	0.00	2,566.85
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	3.02
Landscape	1.04	0.09	7.32	0.00	0.02	0.02	12.35
Consumer Products	5.42						
Architectural Coatings	1.22						
TOTALS (tons/year, unmitigated)	7.84	2.12	8.33	0.00	0.02	0.02	2,582.22

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.16	2.03	1.01	0.00	0.00	0.00	2,566.85
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	3.02
Landscape	1.04	0.09	7.32	0.00	0.02	0.02	12.35
Consumer Products	5.42						
Architectural Coatings	1.22						
TOTALS (tons/year, mitigated)	7.84	2.12	8.33	0.00	0.02	0.02	2,582.22

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Percentage of residences with natural gas fireplaces changed from 85% to 100%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	6.61	9.22	78.55	0.08	14.10	2.75	8,190.03
Condo/townhouse general	0.25	0.34	2.89	0.00	0.52	0.10	301.77
Retirement community	0.53	0.65	5.56	0.01	1.00	0.19	579.56
Day-care center	0.28	0.42	3.44	0.00	0.64	0.12	369.89
Junior college (2 yrs)	2.42	3.63	29.66	0.03	5.53	1.08	3,184.82
Library	0.76	1.12	9.15	0.01	1.71	0.33	982.73
Place of worship	0.63	0.88	7.21	0.01	1.35	0.26	774.89

General office building	0.12	0.17	1.40	0.00	0.26	0.05	148.34
Animal Hospital	0.36	0.55	4.52	0.00	0.84	0.16	482.37
Mausoleum	0.18	0.24	1.97	0.00	0.37	0.07	211.61
Senior Center	0.29	0.43	3.52	0.00	0.66	0.13	377.63
TOTALS (tons/year, unmitigated)	12.43	17.65	147.87	0.14	26.98	5.24	15,603.64

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	6.61	9.22	78.55	0.08	14.10	2.75	8,190.03
Condo/townhouse general	0.25	0.34	2.89	0.00	0.52	0.10	301.77
Retirement community	0.53	0.65	5.56	0.01	1.00	0.19	579.56
Day-care center	0.28	0.42	3.44	0.00	0.64	0.12	369.89
Junior college (2 yrs)	2.42	3.63	29.66	0.03	5.53	1.08	3,184.82
Library	0.76	1.12	9.15	0.01	1.71	0.33	982.73
Place of worship	0.63	0.88	7.21	0.01	1.35	0.26	774.89
General office building	0.12	0.17	1.40	0.00	0.26	0.05	148.34
Animal Hospital	0.36	0.55	4.52	0.00	0.84	0.16	482.37
Mausoleum	0.18	0.24	1.97	0.00	0.37	0.07	211.61
Senior Center	0.29	0.43	3.52	0.00	0.66	0.13	377.63
TOTALS (tons/year, mitigated)	12.43	17.65	147.87	0.14	26.98	5.24	15,603.64

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	154.00	9.58	dwelling units	462.00	4,425.96	44,714.59
Condo/townhouse general	1.69	6.04	dwelling units	27.00	163.08	1,647.56
Retirement community	18.00	3.48	dwelling units	90.00	313.20	3,164.20
Day-care center		79.26	1000 sq ft	2.83	224.31	2,037.26
Junior college (2 yrs)		24.92	1000 sq ft	77.50	1,931.30	17,541.03
Library		16.93	1000 sq ft	35.20	595.94	5,412.59
Place of worship		7.59	1000 sq ft	62.43	473.84	4,269.09
General office building		11.06	1000 sq ft	7.23	79.96	813.83
Animal Hospital		46.88	1000 sq ft	5.76	270.03	2,649.66
Mausoleum		4.76	acres	27.30	129.95	1,166.02
Senior Center		22.90	1000 sq ft	10.00	229.00	2,079.89
					8,836.57	85,495.72

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	0.8	99.0	0.2
Light Truck < 3750 lbs	7.3	2.7	94.6	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	64.3	35.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Day-care center				5.0	2.5	92.5
Junior college (2 yrs)				5.0	2.5	92.5
Library				5.0	2.5	92.5
Place of worship				3.0	1.5	95.5
General office building				35.0	17.5	47.5
Animal Hospital				25.0	12.5	62.5
Mausoleum				2.0	1.0	97.0
Senior Center				5.0	2.5	92.5

APPENDIX B

CALINE4 MODEL PRINTOUTS

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	335. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	9	-150	9	0	AG	490	4.9	.0	13.5
B. Palos Ve NBD	9	0	9	150	AG	451	3.5	.0	10.0
C. Palos Ve NBL	5	-150	0	0	AG	7	6.7	.0	10.0
D. Palos Ve SBA	-7	150	-7	0	AG	328	4.8	.0	10.0
E. Palos Ve SBD	-7	0	-7	-150	AG	620	3.5	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	217	7.2	.0	10.0
G. Hawthorn EBA	-150	-2	0	-2	AG	40	6.2	.0	10.0
H. Hawthorn EBD	0	-2	150	-2	AG	465	4.0	.0	10.0
I. Hawthorn EBL	-150	-2	0	0	AG	5	6.7	.0	10.0
J. Hawthorn WBA	150	7	0	7	AG	208	6.4	.0	10.0
K. Hawthorn WBD	0	7	-150	7	AG	50	3.9	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	291	6.7	.0	10.0
M. Palos V NBAX	9	-750	9	-150	AG	497	3.4	.0	13.5
N. Palos V NBDX	9	150	9	750	AG	451	3.4	.0	10.0
O. Palos V SBAX	-7	750	-7	150	AG	545	3.4	.0	10.0
P. Palos V SBDX	-7	-150	-7	-750	AG	620	3.4	.0	10.0
Q. Hawthor EBAX	-750	-2	-150	-2	AG	45	3.4	.0	10.0
R. Hawthor EBDX	150	-2	750	-2	AG	465	3.4	.0	10.0
S. Hawthor WBAX	750	7	150	7	AG	499	3.4	.0	10.0
T. Hawthor WBDX	-150	7	-750	7	AG	50	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-8	1.8
2. NW	-14	14	1.8
3. SW	-14	-8	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-8	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-8	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-8	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-8	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.8	.0	.2	.0	.0	.0	.1	.0	.1
2. NW	97.	.8	.0	.0	.0	.1	.0	.0	.0	.1
3. SW	83.	.9	.0	.0	.0	.0	.1	.0	.0	.2
4. NE	187.	.8	.3	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	.7	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	93.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.4	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	259.	.7	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	353.	.6	.3	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.7	.0	.0	.0	.3	.0	.2	.0	.0
11. SW mdblk	8.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	186.	.6	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	87.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	*	.0	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.2	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.1	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.3	.0
17. SE blk	*	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Rancho Palos Verdes General Plan
              RUN: Existing-02      (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

       U=    .5 M/S             Z0= 100. CM            ALT=   335. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=   10. DEGREES       TEMP= 10.0 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *             EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*------------------------*------------------------------
A. Palos Ve NBA *     7  -150     7     0 *  AG    486   4.9     .0  10.0
B. Palos Ve NBD *     7     0     7   150 *  AG    502   3.5     .0  10.0
C. Palos Ve NBL *     5  -150     0     0 *  AG      4   6.7     .0  10.0
D. Palos Ve SBA *    -5   150    -5     0 *  AG    583   4.9     .0  13.5
E. Palos Ve SBD *    -5     0    -5  -150 *  AG    593   3.5     .0  10.0
F. Palos Ve SBL *    -2   150     0     0 *  AG      0   3.4     .0  10.0
G. Lower Po EBA *  -150     0     0     0 *  AG     10   6.2     .0  10.0
H. Lower Po EBD *     0     0   150     0 *  AG      0   3.4     .0  10.0
I. Lower Po EBL *  -150    -2     0     0 *  AG     16   6.7     .0  10.0
J. Lower Po WBA *   150     0     0     0 *  AG      0   3.4     .0  10.0
K. Lower Po WBD *     0     0  -150     0 *  AG      4   3.9     .0  10.0
L. Lower Po WBL *   150     2     0     0 *  AG      0   3.4     .0  10.0
M. Palos V NBAX *     7  -750     7  -150 *  AG    490   3.4     .0  10.0
N. Palos V NBDX *     7   150     7   750 *  AG    502   3.4     .0  10.0
O. Palos V SBAX *    -5   750    -5   150 *  AG    583   3.4     .0  13.5
P. Palos V SBDX *    -5  -150    -5  -750 *  AG    593   3.4     .0  10.0
Q. Lower P EBAX *  -750     0  -150     0 *  AG     26   3.4     .0  10.0
R. Lower P EBDX *   150     0   750     0 *  AG      0   3.4     .0  10.0
S. Lower P WBAX *   750     0   150     0 *  AG      0   3.4     .0  10.0
T. Lower P WBDX *  -150     0  -750     0 *  AG      4   3.4     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	7	1.8
3. SW	-12	-7	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	187.	.6	.4	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	.6	.0	.0	.0	.4	.0	.0	.0	.0
3. SW	6.	.7	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.6	.3	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	338.	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	201.	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.6	.4	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.6	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	.6	.0	.3	.0	.1	.0	.0	.0	.0
13. ES blk	271.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	86.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	270.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Via Rive NBA	2	-150	2	0	AG	0	3.4	.0	10.0
B. Via Rive NBD	2	0	2	150	AG	99	3.9	.0	10.0
C. Via Rive NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Via Rive SBA	-2	150	-2	0	AG	14	6.2	.0	10.0
E. Via Rive SBD	-2	0	-2	-150	AG	25	3.9	.0	10.0
F. Via Rive SBL	-2	150	0	0	AG	57	6.7	.0	10.0
G. Hawthorn EBA	-150	-9	0	-9	AG	458	4.9	.0	13.5
H. Hawthorn EBD	0	-9	150	-9	AG	515	3.5	.0	10.0
I. Hawthorn EBL	-150	-5	0	0	AG	30	6.7	.0	10.0
J. Hawthorn WBA	150	9	0	9	AG	549	4.9	.0	13.5
K. Hawthorn WBD	0	9	-150	9	AG	494	3.5	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	25	6.7	.0	10.0
M. Via Riv NBAX	2	-750	2	-150	AG	0	3.4	.0	10.0
N. Via Riv NBDX	2	150	2	750	AG	99	3.4	.0	10.0
O. Via Riv SBAX	-2	750	-2	150	AG	71	3.4	.0	10.0
P. Via Riv SBDX	-2	-150	-2	-750	AG	25	3.4	.0	10.0
Q. Hawthor EBAX	-750	-9	-150	-9	AG	488	3.4	.0	13.5
R. Hawthor EBDX	150	-9	750	-9	AG	515	3.4	.0	10.0
S. Hawthor WBAX	750	9	150	9	AG	574	3.4	.0	13.5
T. Hawthor WBDX	-150	9	-750	9	AG	494	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-15	1.8
2. NW	-8	15	1.8
3. SW	-8	-17	1.8
4. NE	8	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	276.	.6	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	278.	.5	.0	.0	.0	.0	.0	.0	.3	.0
4. NE	98.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.6	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	262.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	358.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	3.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	358.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	3.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	7	-150	7	0	AG	498	4.9	.0	10.0
B. Hawthorn NBD	7	0	7	150	AG	628	3.5	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	31	6.7	.0	10.0
D. Hawthorn SBA	-7	150	-7	0	AG	883	5.2	.0	10.0
E. Hawthorn SBD	-7	0	-7	-150	AG	759	3.5	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	55	6.7	.0	10.0
G. Eddinghi EBA	-150	-2	0	-2	AG	46	6.2	.0	10.0
H. Eddinghi EBD	0	-2	150	-2	AG	70	3.9	.0	10.0
I. Eddinghi EBL	-150	-2	0	0	AG	113	6.7	.0	10.0
J. Eddinghi WBA	150	2	0	2	AG	37	6.2	.0	10.0
K. Eddinghi WBD	0	2	-150	2	AG	212	4.0	.0	10.0
L. Eddinghi WBL	150	2	0	0	AG	6	6.7	.0	10.0
M. Hawthor NBAX	7	-750	7	-150	AG	529	3.4	.0	10.0
N. Hawthor NBDX	7	150	7	750	AG	628	3.4	.0	10.0
O. Hawthor SBAX	-7	750	-7	150	AG	938	3.4	.0	10.0
P. Hawthor SBDX	-7	-150	-7	-750	AG	759	3.4	.0	10.0
Q. Eddingh EBAX	-750	-2	-150	-2	AG	159	3.4	.0	10.0
R. Eddingh EBDX	150	-2	750	-2	AG	70	3.4	.0	10.0
S. Eddingh WBAX	750	2	150	2	AG	43	3.4	.0	10.0
T. Eddingh WBDX	-150	2	-750	2	AG	212	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-8	1.8
2. NW	-14	8	1.8
3. SW	-14	-8	1.8
4. NE	14	8	1.8
5. ES mdblk	150	-8	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-8	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-8	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-8	1.8
16. EN blk	600	8	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.7	.0	.3	.0	.2	.0	.0	.0	.0
2. NW	8.	.9	.0	.0	.0	.7	.0	.0	.0	.0
3. SW	7.	1.0	.0	.0	.0	.6	.0	.0	.0	.0
4. NE	352.	.7	.0	.3	.0	.2	.0	.0	.0	.0
5. ES mdblk	274.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.4	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.8	.4	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	172.	1.0	.0	.0	.0	.7	.0	.0	.0	.0
11. SW mdblk	6.	.7	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	188.	.7	.0	.3	.0	.2	.0	.0	.0	.0
13. ES blk	274.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.5	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	9	-150	9	0	AG	532	4.9	.0	13.5
B. Hawthorn NBD	9	0	9	150	AG	547	3.5	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	26	6.7	.0	10.0
D. Hawthorn SBA	-9	150	-9	0	AG	603	5.1	.0	13.5
E. Hawthorn SBD	-9	0	-9	-150	AG	765	3.5	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	50	6.7	.0	10.0
G. Crest R EBA	-150	-7	0	-7	AG	78	6.2	.0	10.0
H. Crest R EBD	0	-7	150	-7	AG	273	3.9	.0	10.0
I. Crest R EBL	-150	-5	0	0	AG	117	6.7	.0	10.0
J. Crest R WBA	150	7	0	7	AG	126	6.2	.0	10.0
K. Crest R WBD	0	7	-150	7	AG	209	4.0	.0	10.0
L. Crest R WBL	150	5	0	0	AG	262	7.2	.0	10.0
M. Hawthor NBAX	9	-750	9	-150	AG	558	3.4	.0	13.5
N. Hawthor NBDX	9	150	9	750	AG	547	3.4	.0	10.0
O. Hawthor SBAX	-9	750	-9	150	AG	653	3.4	.0	13.5
P. Hawthor SBDX	-9	-150	-9	-750	AG	765	3.4	.0	10.0
Q. Crest EBAX	-750	-7	-150	-7	AG	195	3.4	.0	10.0
R. Crest EBDX	150	-7	750	-7	AG	273	3.4	.0	10.0
S. Crest WBAX	750	7	150	7	AG	388	3.4	.0	10.0
T. Crest WBDX	-150	7	-750	7	AG	209	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.7	.0	.2	.0	.1	.0	.0	.0	.0
2. NW	171.	.7	.0	.0	.0	.0	.3	.0	.0	.0
3. SW	7.	.8	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	187.	.8	.3	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.5	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	96.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.5	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	261.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.7	.4	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.8	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.7	.0	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	.7	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S              Z0= 100. CM             ALT=   335. (M)
   BRG= WORST CASE             VD=   .0 CM/S
  CLAS=     7 (G)              VS=   .0 CM/S
  MIXH= 1000. M               AMB=   .0 PPM
 SIGTH=   10. DEGREES        TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	9	-150	9	0	AG	529	4.9	.0	13.5
B. Hawthorn NBD	9	0	9	150	AG	533	3.5	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	22	6.7	.0	10.0
D. Hawthorn SBA	-7	150	-7	0	AG	648	5.1	.0	10.0
E. Hawthorn SBD	-7	0	-7	-150	AG	622	3.5	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	6	6.7	.0	10.0
G. Dupre Dr EBA	-150	-4	0	-4	AG	15	6.2	.0	10.0
H. Dupre Dr EBD	0	-4	150	-4	AG	18	3.9	.0	10.0
I. Dupre Dr EBL	-150	-2	0	0	AG	9	6.7	.0	10.0
J. Dupre Dr WBA	150	2	0	2	AG	5	6.2	.0	10.0
K. Dupre Dr WBD	0	2	-150	2	AG	69	3.9	.0	10.0
L. Dupre Dr WBL	150	2	0	0	AG	8	6.7	.0	10.0
M. Hawthor NBAX	9	-750	9	-150	AG	551	3.4	.0	13.5
N. Hawthor NBDX	9	150	9	750	AG	533	3.4	.0	10.0
O. Hawthor SBAX	-7	750	-7	150	AG	654	3.4	.0	10.0
P. Hawthor SBDX	-7	-150	-7	-750	AG	622	3.4	.0	10.0
Q. Dupre D EBAX	-750	-4	-150	-4	AG	24	3.4	.0	10.0
R. Dupre D EBDX	150	-4	750	-4	AG	18	3.4	.0	10.0
S. Dupre D WBAX	750	2	150	2	AG	13	3.4	.0	10.0
T. Dupre D WBDX	-150	2	-750	2	AG	69	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-10	1.8
2. NW	-14	8	1.8
3. SW	-14	-10	1.8
4. NE	15	8	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	8	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	.6	.4	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	.7	.0	.0	.0	.5	.0	.0	.0	.0
3. SW	7.	.7	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	186.	.6	.4	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	273.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.6	.4	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.7	.0	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	7.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	.6	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
2. NW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	*	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.1	.4	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	9	-150	9	0	AG	519	4.9	.0	13.5
B. Hawthorn NBD	9	0	9	150	AG	533	3.5	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	10	6.7	.0	10.0
D. Hawthorn SBA	-9	150	-9	0	AG	608	5.1	.0	13.5
E. Hawthorn SBD	-9	0	-9	-150	AG	588	3.5	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	3	6.7	.0	10.0
G. Vallon D EBA	-150	-4	0	-4	AG	7	6.2	.0	10.0
H. Vallon D EBD	0	-4	150	-4	AG	5	3.9	.0	10.0
I. Vallon D EBL	-150	-2	0	0	AG	13	6.7	.0	10.0
J. Vallon D WBA	150	2	0	2	AG	3	6.2	.0	10.0
K. Vallon D WBD	0	2	-150	2	AG	43	3.9	.0	10.0
L. Vallon D WBL	150	2	0	0	AG	6	6.7	.0	10.0
M. Hawthor NBAX	9	-750	9	-150	AG	529	3.4	.0	13.5
N. Hawthor NBDX	9	150	9	750	AG	533	3.4	.0	10.0
O. Hawthor SBAX	-9	750	-9	150	AG	611	3.4	.0	13.5
P. Hawthor SBDX	-9	-150	-9	-750	AG	588	3.4	.0	10.0
Q. Vallon EBAX	-750	-4	-150	-4	AG	20	3.4	.0	10.0
R. Vallon EBDX	150	-4	750	-4	AG	5	3.4	.0	10.0
S. Vallon WBAX	750	2	150	2	AG	9	3.4	.0	10.0
T. Vallon WBDX	-150	2	-750	2	AG	43	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-10	1.8
2. NW	-17	8	1.8
3. SW	-15	-10	1.8
4. NE	15	8	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	8	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	.6	.4	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	.6	.0	.0	.0	.4	.0	.0	.0	.0
3. SW	6.	.7	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	186.	.6	.4	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	273.	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	97.	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	81.	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.6	.4	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.7	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	7.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	.5	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	268.	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
		LINK COORDINATES (M)									
A. Crestmon NBA	*	5	-150	5	0	*	AG	36	6.2	.0	10.0
B. Crestmon NBD	*	5	0	5	150	*	AG	0	3.4	.0	10.0
C. Crestmon NBL	*	5	-150	0	0	*	AG	29	6.7	.0	10.0
D. Crestmon SBA	*	-2	150	-2	0	*	AG	1	6.2	.0	10.0
E. Crestmon SBD	*	-2	0	-2	-150	*	AG	10	3.9	.0	10.0
F. Crestmon SBL	*	-2	150	0	0	*	AG	15	6.7	.0	10.0
G. Palos Ve EBA	*	-150	-9	0	-9	*	AG	591	4.9	.0	13.5
H. Palos Ve EBD	*	0	-9	150	-9	*	AG	635	3.5	.0	10.0
I. Palos Ve EBL	*	-150	-5	0	0	*	AG	0	3.4	.0	10.0
J. Palos Ve WBA	*	150	7	0	7	*	AG	441	4.9	.0	10.0
K. Palos Ve WBD	*	0	7	-150	7	*	AG	471	3.5	.0	10.0
L. Palos Ve WBL	*	150	5	0	0	*	AG	3	6.7	.0	10.0
M. Crestmo NBAX	*	5	-750	5	-150	*	AG	65	3.4	.0	10.0
N. Crestmo NBDX	*	5	150	5	750	*	AG	0	3.4	.0	10.0
O. Crestmo SBAX	*	-2	750	-2	150	*	AG	16	3.4	.0	10.0
P. Crestmo SBDX	*	-2	-150	-2	-750	*	AG	10	3.4	.0	10.0
Q. Palos V EBAX	*	-750	-9	-150	-9	*	AG	591	3.4	.0	13.5
R. Palos V EBDX	*	150	-9	750	-9	*	AG	635	3.4	.0	10.0
S. Palos V WBAX	*	750	7	150	7	*	AG	444	3.4	.0	10.0
T. Palos V WBDX	*	-150	7	-750	7	*	AG	471	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-15	1.8
2. NW	-8	14	1.8
3. SW	-8	-17	1.8
4. NE	12	14	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	14	1.8
17. SE blk	12	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	276.	.6	.0	.0	.0	.0	.0	.0	.4	.0
2. NW	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	278.	.6	.0	.0	.0	.0	.0	.0	.4	.0
4. NE	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.6	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.6	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	177.	.1	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	9.	.1	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	183.	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	356.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	178.	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.3	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.3	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Gravania NBA	4	-150	4	0	AG	53	6.2	.0	10.0
B. Gravania NBD	4	0	4	150	AG	481	5.7	.0	10.0
C. Gravania NBL	2	-150	0	0	AG	15	6.7	.0	10.0
D. Gravania SBA	-7	150	-7	0	AG	128	6.2	.0	10.0
E. Gravania SBD	-7	0	-7	-150	AG	96	3.9	.0	10.0
F. Gravania SBL	-5	150	0	0	AG	278	6.7	.0	10.0
G. Hawthorn EBA	-150	-7	0	-7	AG	647	5.1	.0	10.0
H. Hawthorn EBD	0	-7	150	-7	AG	925	3.6	.0	10.0
I. Hawthorn EBL	-150	-5	0	0	AG	72	6.7	.0	10.0
J. Hawthorn WBA	150	9	0	9	AG	1211	5.7	.0	13.5
K. Hawthorn WBD	0	9	-150	9	AG	939	3.6	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	37	6.7	.0	10.0
M. Gravani NBAX	4	-750	4	-150	AG	68	3.4	.0	10.0
N. Gravani NBDX	4	150	4	750	AG	481	3.4	.0	10.0
O. Gravani SBAX	-7	750	-7	150	AG	406	3.4	.0	10.0
P. Gravani SBDX	-7	-150	-7	-750	AG	96	3.4	.0	10.0
Q. Hawthor EBAX	-750	-7	-150	-7	AG	719	3.4	.0	10.0
R. Hawthor EBDX	150	-7	750	-7	AG	925	3.4	.0	10.0
S. Hawthor WBAX	750	9	150	9	AG	1248	3.4	.0	13.5
T. Hawthor WBDX	-150	9	-750	9	AG	939	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-14	1.8
2. NW	-14	15	1.8
3. SW	-14	-14	1.8
4. NE	10	17	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	17	1.8
17. SE blk	10	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	353.	1.2	.0	.4	.0	.0	.0	.2	.0	.2
2. NW	97.	1.5	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	81.	1.0	.0	.0	.0	.0	.0	.0	.0	.4
4. NE	98.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	1.0	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	96.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	1.1	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	262.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	357.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	168.	.7	.0	.2	.0	.1	.0	.2	.0	.0
11. SW mdblk	5.	.5	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	189.	.8	.0	.4	.0	.0	.0	.1	.0	.0
13. ES blk	277.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.8	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	357.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.8	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0
3. SW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	.9	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0
5. ES mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.6	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
  U=    .5 M/S            Z0= 100. CM           ALT=   335. (M)
BRG= WORST CASE           VD=   .0 CM/S
CLAS=     7 (G)           VS=   .0 CM/S
MIXH= 1000. M            AMB=   .0 PPM
SIGTH=   10. DEGREES     TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Grayslak NBA	7	-150	7	0	AG	332	6.9	.0	10.0
B. Grayslak NBD	7	0	7	150	AG	193	3.9	.0	10.0
C. Grayslak NBL	5	-150	0	0	AG	38	6.7	.0	10.0
D. Grayslak SBA	-7	150	-7	0	AG	37	6.2	.0	10.0
E. Grayslak SBD	-7	0	-7	-150	AG	573	6.7	.0	10.0
F. Grayslak SBL	-5	150	0	0	AG	104	6.7	.0	10.0
G. Hawthorn EBA	-150	-9	0	-9	AG	915	5.2	.0	13.5
H. Hawthorn EBD	0	-9	150	-9	AG	1303	3.7	.0	10.0
I. Hawthorn EBL	-150	-5	0	0	AG	10	6.7	.0	10.0
J. Hawthorn WBA	150	9	0	9	AG	1350	5.7	.0	13.5
K. Hawthorn WBD	0	9	-150	9	AG	1248	3.7	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	531	7.3	.0	10.0
M. Graysla NBAX	7	-750	7	-150	AG	370	3.4	.0	10.0
N. Graysla NBDX	7	150	7	750	AG	193	3.4	.0	10.0
O. Graysla SBAX	-7	750	-7	150	AG	141	3.4	.0	10.0
P. Graysla SBDX	-7	-150	-7	-750	AG	573	3.4	.0	10.0
Q. Hawthor EBAX	-750	-9	-150	-9	AG	925	3.4	.0	13.5
R. Hawthor EBDX	150	-9	750	-9	AG	1303	3.4	.0	10.0
S. Hawthor WBAX	750	9	150	9	AG	1881	3.4	.0	13.5
T. Hawthor WBDX	-150	9	-750	9	AG	1248	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-15	1.8
2. NW	-14	15	1.8
3. SW	-14	-17	1.8
4. NE	14	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	80.	1.4	.0	.0	.0	.0	.0	.0	.0	.7
2. NW	97.	1.8	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	79.	1.7	.0	.0	.0	.0	.3	.0	.1	.5
4. NE	99.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	1.4	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	96.	1.3	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	83.	1.3	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	260.	1.8	.0	.0	.0	.0	.0	.0	.1	.1
9. SE mdblk	351.	.8	.4	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	11.	1.0	.1	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	185.	.6	.0	.1	.0	.0	.1	.0	.0	.0
13. ES blk	277.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.2	.0	.2	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	.0	.9	.1	.3	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.3	.0	.2	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	1.0	.0	.2	.0	.0	.0	.0	.0	.2	.1	.0
5. ES mdblk	.0	.3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	.0	1.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.7
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.9	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Highridg NBA	5	-150	5	0	AG	21	6.2	.0	10.0
B. Highridg NBD	5	0	5	150	AG	84	3.9	.0	10.0
C. Highridg NBL	5	-150	0	0	AG	6	6.7	.0	10.0
D. Highridg SBA	-5	150	-5	0	AG	58	6.2	.0	10.0
E. Highridg SBD	-5	0	-5	-150	AG	32	3.9	.0	10.0
F. Highridg SBL	-5	150	0	0	AG	20	6.7	.0	10.0
G. Crest R EBA	-150	-7	0	-7	AG	258	4.8	.0	10.0
H. Crest R EBD	0	-7	150	-7	AG	283	3.5	.0	10.0
I. Crest R EBL	-150	-5	0	0	AG	53	6.7	.0	10.0
J. Crest R WBA	150	7	0	7	AG	402	4.9	.0	10.0
K. Crest R WBD	0	7	-150	7	AG	436	3.5	.0	10.0
L. Crest R WBL	150	5	0	0	AG	17	6.7	.0	10.0
M. Highrid NBAX	5	-750	5	-150	AG	27	3.4	.0	10.0
N. Highrid NBDX	5	150	5	750	AG	84	3.4	.0	10.0
O. Highrid SBAX	-5	750	-5	150	AG	78	3.4	.0	10.0
P. Highrid SBDX	-5	-150	-5	-750	AG	32	3.4	.0	10.0
Q. Crest EBAX	-750	-7	-150	-7	AG	311	3.4	.0	10.0
R. Crest EBDX	150	-7	750	-7	AG	283	3.4	.0	10.0
S. Crest WBAX	750	7	150	7	AG	419	3.4	.0	10.0
T. Crest WBDX	-150	7	-750	7	AG	436	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-14	1.8
2. NW	-12	14	1.8
3. SW	-12	-14	1.8
4. NE	12	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	12	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	.4	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	97.	.5	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	278.	.4	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	262.	.5	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	97.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.5	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	263.	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	355.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.2	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	4.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	357.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	3.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

		CONC/LINK (PPM)											
RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	*	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.1	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0
17. SE blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Silver S NBA	5	-150	5	0	AG	386	5.1	.0	10.0
B. Silver S NBD	5	0	5	150	AG	406	3.6	.0	10.0
C. Silver S NBL	5	-150	0	0	AG	60	6.7	.0	10.0
D. Silver S SBA	-7	150	-7	0	AG	340	4.8	.0	10.0
E. Silver S SBD	-7	0	-7	-150	AG	480	3.5	.0	10.0
F. Silver S SBL	-5	150	0	0	AG	5	6.7	.0	10.0
G. Basswood EBA	-150	-5	0	-5	AG	71	6.2	.0	10.0
H. Basswood EBD	0	-5	150	-5	AG	19	3.9	.0	10.0
I. Basswood EBL	-150	-5	0	0	AG	19	6.7	.0	10.0
J. Basswood WBA	150	5	0	5	AG	21	6.2	.0	10.0
K. Basswood WBD	0	5	-150	5	AG	93	3.9	.0	10.0
L. Basswood WBL	150	5	0	0	AG	96	6.7	.0	10.0
M. Silver NBAX	5	-750	5	-150	AG	446	3.4	.0	10.0
N. Silver NBDX	5	150	5	750	AG	406	3.4	.0	10.0
O. Silver SBAX	-7	750	-7	150	AG	345	3.4	.0	10.0
P. Silver SBDX	-7	-150	-7	-750	AG	480	3.4	.0	10.0
Q. Basswoo EBAX	-750	-5	-150	-5	AG	90	3.4	.0	10.0
R. Basswoo EBDX	150	-5	750	-5	AG	19	3.4	.0	10.0
S. Basswoo WBAX	750	5	150	5	AG	117	3.4	.0	10.0
T. Basswoo WBDX	-150	5	-750	5	AG	93	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-12	1.8
2. NW	-14	12	1.8
3. SW	-14	-12	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	12	1.8
17. SE blk	12	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	187.	.5	.3	.0	.0	.0	.0	.0	.0	.0
2. NW	172.	.6	.1	.0	.0	.0	.2	.0	.0	.0
3. SW	172.	.5	.0	.0	.0	.0	.3	.0	.0	.0
4. NE	187.	.6	.3	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	97.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	263.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.6	.3	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	174.	.5	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	186.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	5	-150	5	0	AG	903	5.2	.0	13.5
B. Hawthorn NBD	5	0	5	150	AG	946	3.6	.0	10.0
C. Hawthorn NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Hawthorn SBA	-7	150	-7	0	AG	1075	5.4	.0	10.0
E. Hawthorn SBD	-7	0	-7	-150	AG	1090	3.6	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	117	6.7	.0	10.0
G. Blackhor EBA	-150	0	0	0	AG	0	3.4	.0	10.0
H. Blackhor EBD	0	0	150	0	AG	146	3.9	.0	10.0
I. Blackhor EBL	-150	-2	0	0	AG	0	3.4	.0	10.0
J. Blackhor WBA	150	0	0	0	AG	72	6.2	.0	10.0
K. Blackhor WBD	0	0	-150	0	AG	0	3.4	.0	10.0
L. Blackhor WBL	150	2	0	0	AG	15	6.7	.0	10.0
M. Hawthor NBAX	5	-750	5	-150	AG	903	3.4	.0	13.5
N. Hawthor NBDX	5	150	5	750	AG	946	3.4	.0	10.0
O. Hawthor SBAX	-7	750	-7	150	AG	1192	3.4	.0	10.0
P. Hawthor SBDX	-7	-150	-7	-750	AG	1090	3.4	.0	10.0
Q. Blackho EBAX	-750	0	-150	0	AG	0	3.4	.0	10.0
R. Blackho EBDX	150	0	750	0	AG	146	3.4	.0	10.0
S. Blackho WBAX	750	0	150	0	AG	87	3.4	.0	10.0
T. Blackho WBDX	-150	0	-750	0	AG	0	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	7	1.8
3. SW	-14	-7	1.8
4. NE	12	7	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	1.0	.0	.4	.0	.3	.0	.0	.0	.0
2. NW	8.	1.2	.0	.1	.0	.8	.0	.0	.0	.0
3. SW	7.	1.2	.0	.1	.0	.8	.0	.0	.0	.0
4. NE	187.	1.1	.7	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	279.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	91.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	88.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	1.1	.6	.0	.0	.1	.1	.0	.0	.0
10. NW mdblk	172.	1.3	.1	.1	.0	.8	.0	.1	.0	.0
11. SW mdblk	7.	1.1	.2	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	188.	1.0	.0	.5	.0	.2	.0	.0	.0	.0
13. ES blk	275.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	89.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crenshaw NBA	7	-150	7	0	AG	514	4.9	.0	10.0
B. Crenshaw NBD	7	0	7	150	AG	638	3.5	.0	10.0
C. Crenshaw NBL	5	-150	0	0	AG	142	6.7	.0	10.0
D. Crenshaw SBA	-5	150	-5	0	AG	1152	5.4	.0	13.5
E. Crenshaw SBD	-5	0	-5	-150	AG	1161	3.6	.0	10.0
F. Crenshaw SBL	-2	150	0	0	AG	0	3.4	.0	10.0
G. Indian P EBA	-150	-5	0	-5	AG	183	6.2	.0	10.0
H. Indian P EBD	0	-5	150	-5	AG	0	3.4	.0	10.0
I. Indian P EBL	-150	-5	0	0	AG	124	6.7	.0	10.0
J. Indian P WBA	150	0	0	0	AG	0	3.4	.0	10.0
K. Indian P WBD	0	0	-150	0	AG	316	4.4	.0	10.0
L. Indian P WBL	150	2	0	0	AG	0	3.4	.0	10.0
M. Crensha NBAX	7	-750	7	-150	AG	656	3.4	.0	10.0
N. Crensha NBDX	7	150	7	750	AG	638	3.4	.0	10.0
O. Crensha SBAX	-5	750	-5	150	AG	1152	3.4	.0	13.5
P. Crensha SBDX	-5	-150	-5	-750	AG	1161	3.4	.0	10.0
Q. Indian EBAX	-750	-5	-150	-5	AG	307	3.4	.0	10.0
R. Indian EBDX	150	-5	750	-5	AG	0	3.4	.0	10.0
S. Indian WBAX	750	0	150	0	AG	0	3.4	.0	10.0
T. Indian WBDX	-150	0	-750	0	AG	316	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-12	1.8
2. NW	-14	7	1.8
3. SW	-12	-12	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.8	.0	.3	.0	.3	.0	.0	.0	.0
2. NW	171.	1.0	.1	.0	.0	.0	.5	.0	.0	.0
3. SW	6.	1.3	.0	.0	.0	.8	.0	.0	.0	.0
4. NE	264.	.9	.0	.1	.0	.2	.0	.0	.1	.0
5. ES mdblk	272.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	100.	.6	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	79.	.6	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	268.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.0	.4	.0	.1	.1	.2	.0	.0	.0
10. NW mdblk	173.	1.2	.0	.0	.0	.8	.0	.0	.0	.0
11. SW mdblk	7.	1.0	.1	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	188.	.9	.0	.3	.0	.3	.0	.0	.0	.0
13. ES blk	271.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	269.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.8	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
	*						CONC/LINK (PPM)						
1. SE	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
4. NE	*	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.2
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	*	.0	.0	.0	.0	.4	.0	.0	.3	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.1	.6	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.4	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crenshaw NBA	9	-150	9	0	AG	444	4.9	.0	13.5
B. Crenshaw NBD	9	0	9	150	AG	655	3.5	.0	10.0
C. Crenshaw NBL	5	-150	0	0	AG	14	6.7	.0	10.0
D. Crenshaw SBA	-9	150	-9	0	AG	1113	5.4	.0	13.5
E. Crenshaw SBD	-9	0	-9	-150	AG	738	3.5	.0	10.0
F. Crenshaw SBL	-5	150	0	0	AG	37	6.7	.0	10.0
G. Crestrid EBA	-150	-5	0	-5	AG	19	6.2	.0	10.0
H. Crestrid EBD	0	-5	150	-5	AG	40	3.9	.0	10.0
I. Crestrid EBL	-150	-5	0	0	AG	176	6.7	.0	10.0
J. Crestrid WBA	150	4	0	4	AG	43	6.2	.0	10.0
K. Crestrid WBD	0	4	-150	4	AG	417	5.7	.0	10.0
L. Crestrid WBL	150	2	0	0	AG	4	6.7	.0	10.0
M. Crensha NBAX	9	-750	9	-150	AG	458	3.4	.0	13.5
N. Crensha NBDX	9	150	9	750	AG	655	3.4	.0	10.0
O. Crensha SBAX	-9	750	-9	150	AG	1150	3.4	.0	13.5
P. Crensha SBDX	-9	-150	-9	-750	AG	738	3.4	.0	10.0
Q. Crestri EBAX	-750	-5	-150	-5	AG	195	3.4	.0	10.0
R. Crestri EBDX	150	-5	750	-5	AG	40	3.4	.0	10.0
S. Crestri WBAX	750	4	150	4	AG	47	3.4	.0	10.0
T. Crestri WBDX	-150	4	-750	4	AG	417	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-12	1.8
2. NW	-17	10	1.8
3. SW	-15	-12	1.8
4. NE	15	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	.7	.0	.3	.0	.2	.0	.0	.0	.0
2. NW	8.	1.1	.0	.0	.0	.8	.0	.0	.0	.0
3. SW	6.	1.3	.0	.0	.0	.7	.0	.0	.0	.0
4. NE	263.	.9	.0	.2	.0	.2	.0	.0	.0	.0
5. ES mdblk	275.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	78.	.5	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	268.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.7	.3	.0	.0	.2	.0	.0	.0	.0
10. NW mdblk	172.	1.1	.0	.0	.0	.8	.0	.0	.0	.0
11. SW mdblk	5.	.8	.0	.0	.0	.1	.3	.0	.0	.0
12. NE mdblk	190.	.8	.0	.3	.0	.2	.0	.0	.0	.0
13. ES blk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	268.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
		CONC/LINK (PPM)											
1. SE	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	*	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
3. SW	*	.0	.0	.1	.0	.0	.1	.1	.0	.0	.0	.0	.0
4. NE	*	.1	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	*	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.1	.6	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S              Z0= 100. CM            ALT=   335. (M)
   BRG= WORST CASE             VD=   .0 CM/S
  CLAS=     7 (G)              VS=   .0 CM/S
  MIXH= 1000. M               AMB=   .0 PPM
 SIGTH=   10. DEGREES        TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crenshaw NBA	7	-150	7	0	AG	86	4.8	.0	10.0
B. Crenshaw NBD	7	0	7	150	AG	406	3.5	.0	10.0
C. Crenshaw NBL	5	-150	0	0	AG	38	6.7	.0	10.0
D. Crenshaw SBA	-9	150	-9	0	AG	569	4.9	.0	13.5
E. Crenshaw SBD	-9	0	-9	-150	AG	159	3.5	.0	10.0
F. Crenshaw SBL	-5	150	0	0	AG	102	6.7	.0	10.0
G. Crest Ro EBA	-150	-7	0	-7	AG	82	6.2	.0	10.0
H. Crest Ro EBD	0	-7	150	-7	AG	143	3.9	.0	10.0
I. Crest Ro EBL	-150	-5	0	0	AG	252	6.7	.0	10.0
J. Crest Ro WBA	150	4	0	4	AG	86	6.2	.0	10.0
K. Crest Ro WBD	0	4	-150	4	AG	509	6.7	.0	10.0
L. Crest Ro WBL	150	2	0	0	AG	2	6.7	.0	10.0
M. Crensha NBAX	7	-750	7	-150	AG	124	3.4	.0	10.0
N. Crensha NBDX	7	150	7	750	AG	406	3.4	.0	10.0
O. Crensha SBAX	-9	750	-9	150	AG	671	3.4	.0	13.5
P. Crensha SBDX	-9	-150	-9	-750	AG	159	3.4	.0	10.0
Q. Crest R EBAX	-750	-7	-150	-7	AG	334	3.4	.0	10.0
R. Crest R EBDX	150	-7	750	-7	AG	143	3.4	.0	10.0
S. Crest R WBAX	750	4	150	4	AG	88	3.4	.0	10.0
T. Crest R WBDX	-150	4	-750	4	AG	509	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-17	10	1.8
3. SW	-15	-14	1.8
4. NE	14	10	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	10	1.8
17. SE blk	14	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	.6	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	261.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.9	.0	.0	.0	.4	.0	.0	.0	.0
4. NE	263.	1.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	275.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	99.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	78.	.6	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.6	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	3.	.4	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	193.	.5	.0	.2	.0	.2	.0	.0	.0	.0
13. ES blk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	3.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

	CONC/LINK (PPM)											
RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.2	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.2	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.1	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Forresta NBA	5	-150	5	0	AG	27	5.3	.0	10.0
B. Forresta NBD	5	0	5	150	AG	85	3.6	.0	10.0
C. Forresta NBL	5	-150	0	0	AG	12	6.7	.0	10.0
D. Forresta SBA	-5	150	-5	0	AG	28	5.3	.0	10.0
E. Forresta SBD	-5	0	-5	-150	AG	35	3.6	.0	10.0
F. Forresta SBL	-5	150	0	0	AG	64	6.7	.0	10.0
G. Palos Ve EBA	-150	-7	0	-7	AG	577	6.1	.0	10.0
H. Palos Ve EBD	0	-7	150	-7	AG	657	4.1	.0	10.0
I. Palos Ve EBL	-150	-5	0	0	AG	16	6.7	.0	10.0
J. Palos Ve WBA	150	7	0	7	AG	526	6.1	.0	10.0
K. Palos Ve WBD	0	7	-150	7	AG	493	3.7	.0	10.0
L. Palos Ve WBL	150	5	0	0	AG	20	6.7	.0	10.0
M. Forrest NBAX	5	-750	5	-150	AG	39	3.4	.0	10.0
N. Forrest NBDX	5	150	5	750	AG	85	3.4	.0	10.0
O. Forrest SBAX	-5	750	-5	150	AG	92	3.4	.0	10.0
P. Forrest SBDX	-5	-150	-5	-750	AG	35	3.4	.0	10.0
Q. Palos V EBAX	-750	-7	-150	-7	AG	593	3.4	.0	10.0
R. Palos V EBDX	150	-7	750	-7	AG	657	3.4	.0	10.0
S. Palos V WBAX	750	7	150	7	AG	546	3.4	.0	10.0
T. Palos V WBDX	-150	7	-750	7	AG	493	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-14	1.8
2. NW	-12	14	1.8
3. SW	-12	-14	1.8
4. NE	12	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	12	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.7	.0	.0	.0	.0	.0	.0	.5	.0
2. NW	98.	.8	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	82.	.7	.0	.0	.0	.0	.0	.0	.0	.3
4. NE	98.	.7	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.7	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	97.	.6	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	83.	.8	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	262.	.8	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	356.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	187.	.2	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	357.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	4.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.5	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.3	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Rancho Palos Verdes General Plan
              RUN: Existing-18      (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide
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I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM            ALT=   335. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH= 1000. M             AMB=   .0 PPM
  SIGTH=   10. DEGREES      TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	4	-150	4	0	AG	299	4.9	.0	10.0
B. Palos Ve NBD	4	0	4	150	AG	490	3.6	.0	10.0
C. Palos Ve NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Palos Ve SBA	-5	150	-5	0	AG	201	4.9	.0	10.0
E. Palos Ve SBD	-5	0	-5	-150	AG	501	3.6	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	419	7.3	.0	10.0
G. Miralest EBA	-150	0	0	0	AG	0	3.4	.0	10.0
H. Miralest EBD	0	0	150	0	AG	579	6.7	.0	10.0
I. Miralest EBL	-150	-2	0	0	AG	0	3.4	.0	10.0
J. Miralest WBA	150	5	0	5	AG	351	6.9	.0	10.0
K. Miralest WBD	0	5	-150	5	AG	0	3.4	.0	10.0
L. Miralest WBL	150	5	0	0	AG	300	7.2	.0	10.0
M. Palos V NBAX	4	-750	4	-150	AG	299	3.4	.0	10.0
N. Palos V NBDX	4	150	4	750	AG	490	3.4	.0	10.0
O. Palos V SBAX	-5	750	-5	150	AG	620	3.4	.0	10.0
P. Palos V SBDX	-5	-150	-5	-750	AG	501	3.4	.0	10.0
Q. Mirales EBAX	-750	0	-150	0	AG	0	3.4	.0	10.0
R. Mirales EBDX	150	0	750	0	AG	579	3.4	.0	10.0
S. Mirales WBAX	750	5	150	5	AG	651	3.4	.0	10.0
T. Mirales WBDX	-150	5	-750	5	AG	0	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-7	1.8
2. NW	-12	12	1.8
3. SW	-12	-7	1.8
4. NE	10	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	10	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	1.3	.0	.3	.0	.0	.0	.3	.0	.3
2. NW	98.	1.3	.0	.0	.0	.0	.0	.2	.0	.3
3. SW	83.	1.3	.0	.0	.0	.0	.1	.0	.0	.5
4. NE	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.3
5. ES mdblk	281.	1.1	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	92.	.4	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	87.	.4	.0	.0	.0	.0	.0	.0	.0	.1
8. EN mdblk	259.	1.1	.0	.0	.0	.0	.0	.0	.0	.3
9. SE mdblk	356.	.6	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	1.0	.0	.1	.0	.2	.0	.5	.0	.0
11. SW mdblk	7.	.7	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	.7	.0	.3	.0	.0	.0	.2	.0	.0
13. ES blk	276.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	89.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.4	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	335. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	9	-150	9	0	AG	116	4.8	.0	13.5
B. Palos Ve NBD	9	0	9	150	AG	275	3.5	.0	10.0
C. Palos Ve NBL	5	-150	0	0	AG	22	6.7	.0	10.0
D. Palos Ve SBA	-9	150	-9	0	AG	290	4.8	.0	13.5
E. Palos Ve SBD	-9	0	-9	-150	AG	245	3.5	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	38	6.7	.0	10.0
G. Crest Ro EBA	-150	-4	0	-4	AG	25	6.2	.0	10.0
H. Crest Ro EBD	0	-4	150	-4	AG	52	3.9	.0	10.0
I. Crest Ro EBL	-150	-2	0	0	AG	71	6.7	.0	10.0
J. Crest Ro WBA	150	2	0	2	AG	103	6.2	.0	10.0
K. Crest Ro WBD	0	2	-150	2	AG	127	3.9	.0	10.0
L. Crest Ro WBL	150	2	0	0	AG	34	6.7	.0	10.0
M. Palos V NBAX	9	-750	9	-150	AG	138	3.4	.0	13.5
N. Palos V NBDX	9	150	9	750	AG	275	3.4	.0	10.0
O. Palos V SBAX	-9	750	-9	150	AG	328	3.4	.0	13.5
P. Palos V SBDX	-9	-150	-9	-750	AG	245	3.4	.0	10.0
Q. Crest R EBAX	-750	-4	-150	-4	AG	96	3.4	.0	10.0
R. Crest R EBDX	150	-4	750	-4	AG	52	3.4	.0	10.0
S. Crest R WBAX	750	2	150	2	AG	137	3.4	.0	10.0
T. Crest R WBDX	-150	2	-750	2	AG	127	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-10	1.8
2. NW	-17	8	1.8
3. SW	-15	-10	1.8
4. NE	15	8	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	8	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.3	.0	.1	.0	.0	.0	.0	.0	.0
2. NW	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	.4	.0	.0	.0	.2	.0	.0	.0	.0
4. NE	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	276.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.4	.0	.0	.0	.2	.0	.0	.0	.0
11. SW mdblk	6.	.3	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	188.	.3	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	266.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	*	0	-150	0	0	*	AG	0	3.4	.0	10.0
B. Palos Ve NBD	*	0	0	0	150	*	AG	134	3.9	.0	10.0
C. Palos Ve NBL	*	2	-150	0	0	*	AG	0	3.4	.0	10.0
D. Palos Ve SBA	*	-5	150	-5	0	*	AG	99	6.2	.0	10.0
E. Palos Ve SBD	*	-5	0	-5	-150	*	AG	0	3.4	.0	10.0
F. Palos Ve SBL	*	-5	150	0	0	*	AG	53	6.7	.0	10.0
G. Palos Ve EBA	*	-150	-5	0	-5	*	AG	547	5.4	.0	10.0
H. Palos Ve EBD	*	0	-5	150	-5	*	AG	600	3.6	.0	10.0
I. Palos Ve EBL	*	-150	-5	0	0	*	AG	95	6.7	.0	10.0
J. Palos Ve WBA	*	150	4	0	4	*	AG	500	5.2	.0	10.0
K. Palos Ve WBD	*	0	4	-150	4	*	AG	560	3.6	.0	10.0
L. Palos Ve WBL	*	150	2	0	0	*	AG	0	3.4	.0	10.0
M. Palos V NBAX	*	0	-750	0	-150	*	AG	0	3.4	.0	10.0
N. Palos V NBDX	*	0	150	0	750	*	AG	134	3.4	.0	10.0
O. Palos V SBAX	*	-5	750	-5	150	*	AG	152	3.4	.0	10.0
P. Palos V SBDX	*	-5	-150	-5	-750	*	AG	0	3.4	.0	10.0
Q. Palos V EBAX	*	-750	-5	-150	-5	*	AG	642	3.4	.0	10.0
R. Palos V EBDX	*	150	-5	750	-5	*	AG	600	3.4	.0	10.0
S. Palos V WBAX	*	750	4	150	4	*	AG	500	3.4	.0	10.0
T. Palos V WBDX	*	-150	4	-750	4	*	AG	560	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-12	10	1.8
3. SW	-12	-12	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	.8	.0	.0	.0	.0	.0	.0	.4	.0
2. NW	97.	.7	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	277.	.8	.0	.0	.0	.0	.0	.0	.4	.0
4. NE	262.	.8	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	277.	.7	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	97.	.7	.0	.0	.0	.0	.0	.0	.2	.0
7. WS mdblk	82.	.8	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	357.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.3	.0	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	2.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	190.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.5	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	358.	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	360.	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

	CONC/LINK (PPM)											
RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Miralest NBA	4	-150	4	0	AG	296	4.9	.0	10.0
B. Miralest NBD	4	0	4	150	AG	428	3.6	.0	10.0
C. Miralest NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Miralest SBA	-5	150	-5	0	AG	372	5.1	.0	10.0
E. Miralest SBD	-5	0	-5	-150	AG	416	3.6	.0	10.0
F. Miralest SBL	-5	150	0	0	AG	200	6.7	.0	10.0
G. 1st Stre EBA	-150	0	0	0	AG	0	3.4	.0	10.0
H. 1st Stre EBD	0	0	150	0	AG	244	4.0	.0	10.0
I. 1st Stre EBL	-150	-2	0	0	AG	0	3.4	.0	10.0
J. 1st Stre WBA	150	5	0	5	AG	176	6.2	.0	10.0
K. 1st Stre WBD	0	5	-150	5	AG	0	3.4	.0	10.0
L. 1st Stre WBL	150	5	0	0	AG	44	6.7	.0	10.0
M. Mirales NBAX	4	-750	4	-150	AG	296	3.4	.0	10.0
N. Mirales NBDX	4	150	4	750	AG	428	3.4	.0	10.0
O. Mirales SBAX	-5	750	-5	150	AG	572	3.4	.0	10.0
P. Mirales SBDX	-5	-150	-5	-750	AG	416	3.4	.0	10.0
Q. 1st Str EBAX	-750	0	-150	0	AG	0	3.4	.0	10.0
R. 1st Str EBDX	150	0	750	0	AG	244	3.4	.0	10.0
S. 1st Str WBAX	750	5	150	5	AG	220	3.4	.0	10.0
T. 1st Str WBDX	-150	5	-750	5	AG	0	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-7	1.8
2. NW	-12	12	1.8
3. SW	-12	-7	1.8
4. NE	10	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	10	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.7	.0	.2	.0	.1	.0	.1	.0	.0
2. NW	7.	.6	.0	.0	.0	.3	.0	.1	.0	.0
3. SW	7.	.6	.0	.0	.0	.3	.0	.1	.0	.0
4. NE	352.	.6	.0	.2	.0	.1	.0	.1	.0	.0
5. ES mdblk	281.	.4	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	92.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	355.	.5	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.7	.0	.1	.0	.3	.0	.2	.0	.0
11. SW mdblk	6.	.5	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	187.	.6	.0	.2	.0	.1	.0	.1	.0	.0
13. ES blk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	89.	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: Existing-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Western NBA	7	-150	7	0	AG	1304	5.7	.0	10.0
B. Western NBD	7	0	7	150	AG	1291	3.7	.0	10.0
C. Western NBL	5	-150	0	0	AG	62	6.7	.0	10.0
D. Western SBA	-9	150	-9	0	AG	1395	5.7	.0	13.5
E. Western SBD	-9	0	-9	-150	AG	1504	3.9	.0	10.0
F. Western SBL	-5	150	0	0	AG	49	6.7	.0	10.0
G. Toscanin EBA	-150	-4	0	-4	AG	85	6.2	.0	10.0
H. Toscanin EBD	0	-4	150	-4	AG	125	3.9	.0	10.0
I. Toscanin EBL	-150	-2	0	0	AG	31	6.7	.0	10.0
J. Toscanin WBA	150	4	0	4	AG	23	6.2	.0	10.0
K. Toscanin WBD	0	4	-150	4	AG	82	3.9	.0	10.0
L. Toscanin WBL	150	2	0	0	AG	53	6.7	.0	10.0
M. Western NBAX	7	-750	7	-150	AG	1366	3.4	.0	10.0
N. Western NBDX	7	150	7	750	AG	1291	3.4	.0	10.0
O. Western SBAX	-9	750	-9	150	AG	1444	3.4	.0	13.5
P. Western SBDX	-9	-150	-9	-750	AG	1504	3.4	.0	10.0
Q. Toscani EBAX	-750	-4	-150	-4	AG	116	3.4	.0	10.0
R. Toscani EBDX	150	-4	750	-4	AG	125	3.4	.0	10.0
S. Toscani WBAX	750	4	150	4	AG	76	3.4	.0	10.0
T. Toscani WBDX	-150	4	-750	4	AG	82	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: Existing-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-10	1.8
2. NW	-17	10	1.8
3. SW	-15	-10	1.8
4. NE	14	10	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	10	1.8
17. SE blk	14	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: Existing-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	1.5	1.0	.0	.0	.0	.1	.0	.0	.0
2. NW	8.	1.4	.0	.1	.0	1.0	.0	.0	.0	.0
3. SW	7.	1.6	.0	.1	.0	1.0	.0	.0	.0	.0
4. NE	188.	1.5	.9	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	276.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	96.	.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.4	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.7	1.0	.0	.0	.2	.2	.0	.0	.0
10. NW mdblk	172.	1.6	.2	.1	.0	1.0	.0	.0	.0	.0
11. SW mdblk	8.	1.4	.2	.1	.0	.0	.8	.0	.0	.0
12. NE mdblk	188.	1.3	.0	.7	.0	.2	.1	.0	.0	.0
13. ES blk	275.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: Existing-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.7	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.7	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.3	.0	.0	.8	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.7	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	9	-150	9	0	AG	893	5.2	.0	13.5
B. Palos Ve NBD	9	0	9	150	AG	679	3.5	.0	10.0
C. Palos Ve NBL	5	-150	0	0	AG	18	6.7	.0	10.0
D. Palos Ve SBA	-7	150	-7	0	AG	497	4.9	.0	10.0
E. Palos Ve SBD	-7	0	-7	-150	AG	1170	3.6	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	302	7.3	.0	10.0
G. Hawthorn EBA	-150	-2	0	-2	AG	50	6.2	.0	10.0
H. Hawthorn EBD	0	-2	150	-2	AG	841	5.7	.0	10.0
I. Hawthorn EBL	-150	-2	0	0	AG	6	6.7	.0	10.0
J. Hawthorn WBA	150	7	0	7	AG	330	6.9	.0	10.0
K. Hawthorn WBD	0	7	-150	7	AG	78	3.9	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	672	7.3	.0	10.0
M. Palos V NBAX	9	-750	9	-150	AG	911	3.4	.0	13.5
N. Palos V NBDX	9	150	9	750	AG	679	3.4	.0	10.0
O. Palos V SBAX	-7	750	-7	150	AG	799	3.4	.0	10.0
P. Palos V SBDX	-7	-150	-7	-750	AG	1170	3.4	.0	10.0
Q. Hawthor EBAX	-750	-2	-150	-2	AG	56	3.4	.0	10.0
R. Hawthor EBDX	150	-2	750	-2	AG	841	3.4	.0	10.0
S. Hawthor WBAX	750	7	150	7	AG	1002	3.4	.0	10.0
T. Hawthor WBDX	-150	7	-750	7	AG	78	3.4	.0	10.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Rancho Palos Verdes General Plan
              RUN: GPBO-01          (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

              *    COORDINATES (M)
   RECEPTOR   *    X      Y      Z
 ------------*---------------------
  1. SE       *     17     -8   1.8
  2. NW       *    -14     14   1.8
  3. SW       *    -14     -8   1.8
  4. NE       *     15     14   1.8
  5. ES mdblk *    150     -8   1.8
  6. WN mdblk *   -150     14   1.8
  7. WS mdblk *   -150     -8   1.8
  8. EN mdblk *    150     14   1.8
  9. SE mdblk *     17   -150   1.8
 10. NW mdblk *    -14    150   1.8
 11. SW mdblk *    -14   -150   1.8
 12. NE mdblk *     15    150   1.8
 13. ES blk   *    600     -8   1.8
 14. WN blk   *   -600     14   1.8
 15. WS blk   *   -600     -8   1.8
 16. EN blk   *    600     14   1.8
 17. SE blk   *     17   -600   1.8
 18. NW blk   *    -14    600   1.8
 19. SW blk   *    -14   -600   1.8
 20. NE blk   *     15    600   1.8
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	80.	1.5	.0	.0	.0	.0	.0	.0	.0	.7
2. NW	98.	1.5	.0	.0	.0	.2	.0	.1	.0	.3
3. SW	82.	1.9	.2	.0	.0	.0	.3	.0	.0	.6
4. NE	187.	1.6	.6	.0	.0	.0	.1	.0	.0	.2
5. ES mdblk	281.	1.4	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	93.	.7	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	87.	.7	.0	.0	.0	.0	.0	.0	.0	.1
8. EN mdblk	258.	1.4	.0	.0	.0	.0	.0	.0	.0	.3
9. SE mdblk	353.	1.1	.6	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	1.1	.1	.0	.0	.4	.0	.3	.0	.0
11. SW mdblk	9.	1.1	.2	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	186.	.9	.0	.3	.0	.0	.1	.0	.0	.0
13. ES blk	276.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	93.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-01 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.2	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.3	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.2	.0	.2	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.2	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	335. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	7	-150	7	0	AG	856	5.2	.0	10.0
B. Palos Ve NBD	7	0	7	150	AG	907	3.6	.0	10.0
C. Palos Ve NBL	5	-150	0	0	AG	28	6.7	.0	10.0
D. Palos Ve SBA	-5	150	-5	0	AG	1126	5.4	.0	13.5
E. Palos Ve SBD	-5	0	-5	-150	AG	1166	3.6	.0	10.0
F. Palos Ve SBL	-2	150	0	0	AG	0	3.4	.0	10.0
G. Lower Po EBA	-150	0	0	0	AG	40	6.2	.0	10.0
H. Lower Po EBD	0	0	150	0	AG	0	3.4	.0	10.0
I. Lower Po EBL	-150	-2	0	0	AG	51	6.7	.0	10.0
J. Lower Po WBA	150	0	0	0	AG	0	3.4	.0	10.0
K. Lower Po WBD	0	0	-150	0	AG	28	3.9	.0	10.0
L. Lower Po WBL	150	2	0	0	AG	0	3.4	.0	10.0
M. Palos V NBAX	7	-750	7	-150	AG	884	3.4	.0	10.0
N. Palos V NBDX	7	150	7	750	AG	907	3.4	.0	10.0
O. Palos V SBAX	-5	750	-5	150	AG	1126	3.4	.0	13.5
P. Palos V SBDX	-5	-150	-5	-750	AG	1166	3.4	.0	10.0
Q. Lower P EBAX	-750	0	-150	0	AG	91	3.4	.0	10.0
R. Lower P EBDX	150	0	750	0	AG	0	3.4	.0	10.0
S. Lower P WBAX	750	0	150	0	AG	0	3.4	.0	10.0
T. Lower P WBDX	-150	0	-750	0	AG	28	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-7	1.8
2. NW	-14	7	1.8
3. SW	-12	-7	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	1.0	.6	.0	.0	.0	.2	.0	.0	.0
2. NW	8.	1.1	.0	.1	.0	.8	.0	.0	.0	.0
3. SW	6.	1.3	.0	.1	.0	.9	.0	.0	.0	.0
4. NE	187.	1.0	.6	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	272.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	269.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	1.1	.6	.0	.0	.1	.1	.0	.0	.0
10. NW mdblk	172.	1.2	.1	.1	.0	.8	.0	.0	.0	.0
11. SW mdblk	7.	1.0	.2	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	188.	1.0	.0	.5	.0	.3	.0	.0	.0	.0
13. ES blk	271.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	270.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.9	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.9	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-02 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Via Rive NBA	2	-150	2	0	AG	0	3.4	.0	10.0
B. Via Rive NBD	2	0	2	150	AG	126	3.9	.0	10.0
C. Via Rive NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Via Rive SBA	-2	150	-2	0	AG	69	6.2	.0	10.0
E. Via Rive SBD	-2	0	-2	-150	AG	34	3.9	.0	10.0
F. Via Rive SBL	-2	150	0	0	AG	17	6.7	.0	10.0
G. Hawthorn EBA	-150	-9	0	-9	AG	856	5.2	.0	13.5
H. Hawthorn EBD	0	-9	150	-9	AG	873	3.6	.0	10.0
I. Hawthorn EBL	-150	-5	0	0	AG	30	6.7	.0	10.0
J. Hawthorn WBA	150	9	0	9	AG	1124	5.4	.0	13.5
K. Hawthorn WBD	0	9	-150	9	AG	1097	3.6	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	34	6.7	.0	10.0
M. Via Riv NBAX	2	-750	2	-150	AG	0	3.4	.0	10.0
N. Via Riv NBDX	2	150	2	750	AG	126	3.4	.0	10.0
O. Via Riv SBAX	-2	750	-2	150	AG	86	3.4	.0	10.0
P. Via Riv SBDX	-2	-150	-2	-750	AG	34	3.4	.0	10.0
Q. Hawthor EBAX	-750	-9	-150	-9	AG	886	3.4	.0	13.5
R. Hawthor EBDX	150	-9	750	-9	AG	873	3.4	.0	10.0
S. Hawthor WBAX	750	9	150	9	AG	1158	3.4	.0	13.5
T. Hawthor WBDX	-150	9	-750	9	AG	1097	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	8	-15	1.8
2. NW	-8	15	1.8
3. SW	-8	-17	1.8
4. NE	8	17	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	8	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	8	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	17	1.8
17. SE blk	8	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	8	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	1.0	.0	.0	.0	.0	.0	.0	.6	.0
2. NW	97.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	278.	.9	.0	.0	.0	.0	.0	.0	.6	.0
4. NE	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	.9	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	97.	1.0	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	82.	1.0	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	262.	1.2	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	358.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	3.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.9	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.8	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	358.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	3.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-03 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.8	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
4. NE	.0	.8	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
5. ES mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.6
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.6	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	335. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	7	-150	7	0	AG	757	5.1	.0	10.0
B. Hawthorn NBD	7	0	7	150	AG	944	3.6	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	37	6.7	.0	10.0
D. Hawthorn SBA	-7	150	-7	0	AG	407	4.9	.0	10.0
E. Hawthorn SBD	-7	0	-7	-150	AG	248	3.5	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	69	6.7	.0	10.0
G. Eddinghi EBA	-150	-2	0	-2	AG	55	6.2	.0	10.0
H. Eddinghi EBD	0	-2	150	-2	AG	87	3.9	.0	10.0
I. Eddinghi EBL	-150	-2	0	0	AG	153	6.7	.0	10.0
J. Eddinghi WBA	150	2	0	2	AG	58	6.2	.0	10.0
K. Eddinghi WBD	0	2	-150	2	AG	265	4.0	.0	10.0
L. Eddinghi WBL	150	2	0	0	AG	8	6.7	.0	10.0
M. Hawthor NBAX	7	-750	7	-150	AG	794	3.4	.0	10.0
N. Hawthor NBDX	7	150	7	750	AG	944	3.4	.0	10.0
O. Hawthor SBAX	-7	750	-7	150	AG	476	3.4	.0	10.0
P. Hawthor SBDX	-7	-150	-7	-750	AG	248	3.4	.0	10.0
Q. Eddingh EBAX	-750	-2	-150	-2	AG	208	3.4	.0	10.0
R. Eddingh EBDX	150	-2	750	-2	AG	87	3.4	.0	10.0
S. Eddingh WBAX	750	2	150	2	AG	66	3.4	.0	10.0
T. Eddingh WBDX	-150	2	-750	2	AG	265	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-8	1.8
2. NW	-14	8	1.8
3. SW	-14	-8	1.8
4. NE	14	8	1.8
5. ES mdblk	150	-8	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-8	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-8	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-8	1.8
16. EN blk	600	8	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	.8	.0	.4	.0	.0	.0	.0	.0	.0
2. NW	170.	.6	.2	.0	.0	.0	.1	.0	.0	.0
3. SW	8.	.8	.0	.1	.0	.3	.0	.0	.0	.0
4. NE	187.	.8	.5	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	274.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	98.	.5	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.5	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.9	.6	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.7	.0	.1	.0	.3	.0	.0	.0	.0
11. SW mdblk	7.	.5	.1	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	188.	.8	.0	.5	.0	.0	.0	.0	.0	.0
13. ES blk	274.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-04 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.2	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 335. (M)
BRG= WORST CASE VD= .0 CM/S
CLAS= 7 (G) VS= .0 CM/S
MIXH= 1000. M AMB= .0 PPM
SIGTH= 10. DEGREES TEMP= 10.0 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	9	-150	9	0	AG	947	5.2	.0	13.5
B. Hawthorn NBD	9	0	9	150	AG	836	3.6	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	30	6.7	.0	10.0
D. Hawthorn SBA	-9	150	-9	0	AG	882	5.2	.0	13.5
E. Hawthorn SBD	-9	0	-9	-150	AG	1359	3.7	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	61	6.7	.0	10.0
G. Crest R EBA	-150	-7	0	-7	AG	98	6.2	.0	10.0
H. Crest R EBD	0	-7	150	-7	AG	491	4.0	.0	10.0
I. Crest R EBL	-150	-5	0	0	AG	144	6.7	.0	10.0
J. Crest R WBA	150	7	0	7	AG	200	6.2	.0	10.0
K. Crest R WBD	0	7	-150	7	AG	270	4.0	.0	10.0
L. Crest R WBL	150	5	0	0	AG	594	7.3	.0	10.0
M. Hawthor NBAX	9	-750	9	-150	AG	977	3.4	.0	13.5
N. Hawthor NBDX	9	150	9	750	AG	836	3.4	.0	10.0
O. Hawthor SBAX	-9	750	-9	150	AG	943	3.4	.0	13.5
P. Hawthor SBDX	-9	-150	-9	-750	AG	1359	3.4	.0	10.0
Q. Crest EBAX	-750	-7	-150	-7	AG	242	3.4	.0	10.0
R. Crest EBDX	150	-7	750	-7	AG	491	3.4	.0	10.0
S. Crest WBAX	750	7	150	7	AG	794	3.4	.0	10.0
T. Crest WBDX	-150	7	-750	7	AG	270	3.4	.0	10.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: Rancho Palos Verdes General Plan
              RUN: GPBO-05          (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-14	1.8
2. NW	-17	14	1.8
3. SW	-15	-14	1.8
4. NE	15	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	350.	1.2	.1	.3	.0	.2	.0	.0	.0	.1
2. NW	170.	1.1	.2	.0	.0	.1	.5	.0	.0	.0
3. SW	81.	1.3	.2	.0	.0	.0	.3	.0	.0	.2
4. NE	187.	1.4	.6	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	280.	.8	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	95.	.7	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	85.	.7	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	259.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	352.	1.1	.7	.0	.0	.1	.1	.0	.0	.0
10. NW mdblk	172.	1.1	.1	.0	.0	.6	.0	.0	.0	.0
11. SW mdblk	9.	1.2	.2	.0	.0	.0	.7	.0	.0	.0
12. NE mdblk	187.	1.0	.0	.4	.0	.1	.1	.0	.0	.0
13. ES blk	276.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.9	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.8	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-05 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
	CONC/LINK (PPM)											
1. SE	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.2	.0	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.1	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.4	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.5	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.7	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
		LINK COORDINATES (M)									
A. Hawthorn NBA	*	9	-150	9	0	*	AG	944	5.2	.0	13.5
B. Hawthorn NBD	*	9	0	9	150	*	AG	948	3.6	.0	10.0
C. Hawthorn NBL	*	5	-150	0	0	*	AG	26	6.7	.0	10.0
D. Hawthorn SBA	*	-7	150	-7	0	*	AG	1252	5.7	.0	10.0
E. Hawthorn SBD	*	-7	0	-7	-150	*	AG	1224	3.7	.0	10.0
F. Hawthorn SBL	*	-5	150	0	0	*	AG	10	6.7	.0	10.0
G. Dupre Dr EBA	*	-150	-4	0	-4	*	AG	18	6.2	.0	10.0
H. Dupre Dr EBD	*	0	-4	150	-4	*	AG	28	3.9	.0	10.0
I. Dupre Dr EBL	*	-150	-2	0	0	*	AG	11	6.7	.0	10.0
J. Dupre Dr WBA	*	150	2	0	2	*	AG	9	6.2	.0	10.0
K. Dupre Dr WBD	*	0	2	-150	2	*	AG	83	3.9	.0	10.0
L. Dupre Dr WBL	*	150	2	0	0	*	AG	13	6.7	.0	10.0
M. Hawthor NBAX	*	9	-750	9	-150	*	AG	970	3.4	.0	13.5
N. Hawthor NBDX	*	9	150	9	750	*	AG	948	3.4	.0	10.0
O. Hawthor SBAX	*	-7	750	-7	150	*	AG	1262	3.4	.0	10.0
P. Hawthor SBDX	*	-7	-150	-7	-750	*	AG	1224	3.4	.0	10.0
Q. Dupre D EBAX	*	-750	-4	-150	-4	*	AG	29	3.4	.0	10.0
R. Dupre D EBDX	*	150	-4	750	-4	*	AG	28	3.4	.0	10.0
S. Dupre D WBAX	*	750	2	150	2	*	AG	22	3.4	.0	10.0
T. Dupre D WBDX	*	-150	2	-750	2	*	AG	83	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-10	1.8
2. NW	-14	8	1.8
3. SW	-14	-10	1.8
4. NE	15	8	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	8	1.8
17. SE blk	17	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	1.0	.6	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	1.3	.0	.0	.0	1.0	.0	.0	.0	.0
3. SW	8.	1.3	.0	.1	.0	.9	.0	.0	.0	.0
4. NE	187.	1.1	.7	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	96.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	267.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.1	.7	.0	.0	.2	.1	.0	.0	.0
10. NW mdblk	172.	1.4	.1	.1	.0	1.0	.0	.0	.0	.0
11. SW mdblk	7.	1.1	.1	.0	.0	.1	.6	.0	.0	.0
12. NE mdblk	188.	1.0	.0	.5	.0	.2	.1	.0	.0	.0
13. ES blk	273.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-06 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.7	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	9	-150	9	0	AG	932	5.2	.0	13.5
B. Hawthorn NBD	9	0	9	150	AG	949	3.6	.0	10.0
C. Hawthorn NBL	5	-150	0	0	AG	12	6.7	.0	10.0
D. Hawthorn SBA	-9	150	-9	0	AG	1208	5.7	.0	13.5
E. Hawthorn SBD	-9	0	-9	-150	AG	1179	3.6	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	5	6.7	.0	10.0
G. Vallon D EBA	-150	-4	0	-4	AG	8	6.2	.0	10.0
H. Vallon D EBD	0	-4	150	-4	AG	7	3.9	.0	10.0
I. Vallon D EBL	-150	-2	0	0	AG	15	6.7	.0	10.0
J. Vallon D WBA	150	2	0	2	AG	4	6.2	.0	10.0
K. Vallon D WBD	0	2	-150	2	AG	56	3.9	.0	10.0
L. Vallon D WBL	150	2	0	0	AG	7	6.7	.0	10.0
M. Hawthor NBAX	9	-750	9	-150	AG	944	3.4	.0	13.5
N. Hawthor NBDX	9	150	9	750	AG	949	3.4	.0	10.0
O. Hawthor SBAX	-9	750	-9	150	AG	1213	3.4	.0	13.5
P. Hawthor SBDX	-9	-150	-9	-750	AG	1179	3.4	.0	10.0
Q. Vallon EBAX	-750	-4	-150	-4	AG	23	3.4	.0	10.0
R. Vallon EBDX	150	-4	750	-4	AG	7	3.4	.0	10.0
S. Vallon WBAX	750	2	150	2	AG	11	3.4	.0	10.0
T. Vallon WBDX	-150	2	-750	2	AG	56	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-10	1.8
2. NW	-17	8	1.8
3. SW	-15	-10	1.8
4. NE	15	8	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	8	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	1.0	.6	.0	.0	.0	.0	.0	.0	.0
2. NW	8.	1.2	.0	.0	.0	.9	.0	.0	.0	.0
3. SW	7.	1.3	.0	.0	.0	.9	.0	.0	.0	.0
4. NE	187.	1.0	.7	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	274.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	96.	.2	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	80.	.2	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	268.	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.1	.6	.0	.0	.2	.0	.0	.0	.0
10. NW mdblk	172.	1.3	.1	.0	.0	.9	.0	.0	.0	.0
11. SW mdblk	7.	1.0	.1	.0	.0	.1	.6	.0	.0	.0
12. NE mdblk	188.	1.0	.0	.5	.0	.2	.1	.0	.0	.0
13. ES blk	273.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	268.	.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.9	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-07 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crestmon NBA	5	-150	5	0	AG	159	6.2	.0	10.0
B. Crestmon NBD	5	0	5	150	AG	2	3.9	.0	10.0
C. Crestmon NBL	5	-150	0	0	AG	173	6.7	.0	10.0
D. Crestmon SBA	-2	150	-2	0	AG	1	6.2	.0	10.0
E. Crestmon SBD	-2	0	-2	-150	AG	260	4.0	.0	10.0
F. Crestmon SBL	-2	150	0	0	AG	21	6.7	.0	10.0
G. Palos Ve EBA	-150	-9	0	-9	AG	1153	5.4	.0	13.5
H. Palos Ve EBD	0	-9	150	-9	AG	1188	3.6	.0	10.0
I. Palos Ve EBL	-150	-5	0	0	AG	1	6.7	.0	10.0
J. Palos Ve WBA	150	7	0	7	AG	675	5.1	.0	10.0
K. Palos Ve WBD	0	7	-150	7	AG	848	3.6	.0	10.0
L. Palos Ve WBL	150	5	0	0	AG	115	6.7	.0	10.0
M. Crestmo NBAX	5	-750	5	-150	AG	332	3.4	.0	10.0
N. Crestmo NBDX	5	150	5	750	AG	2	3.4	.0	10.0
O. Crestmo SBAX	-2	750	-2	150	AG	22	3.4	.0	10.0
P. Crestmo SBDX	-2	-150	-2	-750	AG	260	3.4	.0	10.0
Q. Palos V EBAX	-750	-9	-150	-9	AG	1154	3.4	.0	13.5
R. Palos V EBDX	150	-9	750	-9	AG	1188	3.4	.0	10.0
S. Palos V WBAX	750	7	150	7	AG	790	3.4	.0	10.0
T. Palos V WBDX	-150	7	-750	7	AG	848	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-15	1.8
2. NW	-8	14	1.8
3. SW	-8	-17	1.8
4. NE	12	14	1.8
5. ES mdblk	150	-15	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-17	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-8	150	1.8
11. SW mdblk	-8	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-15	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-17	1.8
16. EN blk	600	14	1.8
17. SE blk	12	-600	1.8
18. NW blk	-8	600	1.8
19. SW blk	-8	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	1.3	.0	.0	.0	.0	.0	.0	.8	.0
2. NW	98.	.9	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	278.	1.1	.0	.0	.0	.0	.0	.0	.8	.0
4. NE	261.	.9	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	277.	1.0	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	98.	1.0	.0	.0	.0	.0	.0	.0	.2	.1
7. WS mdblk	82.	1.2	.0	.0	.0	.0	.0	.0	.8	.0
8. EN mdblk	262.	1.1	.0	.0	.0	.0	.0	.0	.2	.1
9. SE mdblk	349.	.6	.2	.0	.2	.0	.0	.0	.0	.0
10. NW mdblk	177.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	10.	.5	.0	.0	.1	.0	.2	.0	.0	.0
12. NE mdblk	183.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.9	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	178.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	182.	.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-08 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.5	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
4. NE	.0	.0	.4	.0	.0	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Gravania NBA	4	-150	4	0	AG	409	7.2	.0	10.0
B. Gravania NBD	4	0	4	150	AG	247	4.0	.0	10.0
C. Gravania NBL	2	-150	0	0	AG	45	6.7	.0	10.0
D. Gravania SBA	-7	150	-7	0	AG	45	6.2	.0	10.0
E. Gravania SBD	-7	0	-7	-150	AG	678	7.0	.0	10.0
F. Gravania SBL	-5	150	0	0	AG	139	6.7	.0	10.0
G. Hawthorn EBA	-150	-7	0	-7	AG	1258	5.7	.0	10.0
H. Hawthorn EBD	0	-7	150	-7	AG	1748	4.3	.0	10.0
I. Hawthorn EBL	-150	-5	0	0	AG	12	6.7	.0	10.0
J. Hawthorn WBA	150	9	0	9	AG	1816	7.0	.0	13.5
K. Hawthorn WBD	0	9	-150	9	AG	1679	4.3	.0	10.0
L. Hawthorn WBL	150	5	0	0	AG	628	7.3	.0	10.0
M. Gravani NBAX	4	-750	4	-150	AG	454	3.4	.0	10.0
N. Gravani NBDX	4	150	4	750	AG	247	3.4	.0	10.0
O. Gravani SBAX	-7	750	-7	150	AG	184	3.4	.0	10.0
P. Gravani SBDX	-7	-150	-7	-750	AG	678	3.4	.0	10.0
Q. Hawthor EBAX	-750	-7	-150	-7	AG	1270	3.4	.0	10.0
R. Hawthor EBDX	150	-7	750	-7	AG	1748	3.4	.0	10.0
S. Hawthor WBAX	750	9	150	9	AG	2444	3.4	.0	13.5
T. Hawthor WBDX	-150	9	-750	9	AG	1679	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-14	1.8
2. NW	-14	15	1.8
3. SW	-14	-14	1.8
4. NE	10	17	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	15	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	17	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	15	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	17	1.8
17. SE blk	10	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	78.	2.0	.0	.0	.0	.0	.0	.0	.0	1.0
2. NW	97.	2.5	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	78.	2.6	.1	.0	.0	.0	.3	.0	.3	.7
4. NE	100.	2.4	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	280.	2.1	.0	.0	.0	.0	.0	.0	.0	1.0
6. WN mdblk	97.	1.8	.0	.0	.0	.0	.0	.0	.2	.2
7. WS mdblk	83.	1.9	.0	.0	.0	.0	.0	.0	1.0	.0
8. EN mdblk	260.	2.6	.0	.0	.0	.0	.0	.0	.1	.2
9. SE mdblk	351.	1.1	.5	.0	.0	.0	.3	.0	.0	.0
10. NW mdblk	174.	.8	.0	.0	.0	.0	.0	.1	.0	.0
11. SW mdblk	11.	1.3	.2	.0	.0	.0	.7	.0	.0	.0
12. NE mdblk	183.	.8	.0	.1	.0	.0	.1	.0	.0	.0
13. ES blk	277.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.8	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-09 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
						CONC/LINK (PPM)						
1. SE	.0	.5	.0	.3	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	.0	1.4	.2	.3	.0	.0	.0	.0	.0	.2	.2	.0
3. SW	.0	.6	.0	.4	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	1.6	.0	.3	.0	.0	.0	.0	.0	.2	.1	.0
5. ES mdblk	.0	.5	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.2	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.3	.2	.1	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	.0	1.6	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	.4	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.8
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.1	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Grayslak NBA	*	7	-150	7	0	*	AG	332	6.9	.0	10.0
B. Grayslak NBD	*	7	0	7	150	*	AG	193	3.9	.0	10.0
C. Grayslak NBL	*	5	-150	0	0	*	AG	38	6.7	.0	10.0
D. Grayslak SBA	*	-7	150	-7	0	*	AG	37	6.2	.0	10.0
E. Grayslak SBD	*	-7	0	-7	-150	*	AG	573	6.7	.0	10.0
F. Grayslak SBL	*	-5	150	0	0	*	AG	104	6.7	.0	10.0
G. Hawthorn EBA	*	-150	-9	0	-9	*	AG	915	5.2	.0	13.5
H. Hawthorn EBD	*	0	-9	150	-9	*	AG	1303	3.7	.0	10.0
I. Hawthorn EBL	*	-150	-5	0	0	*	AG	10	6.7	.0	10.0
J. Hawthorn WBA	*	150	9	0	9	*	AG	1350	5.7	.0	13.5
K. Hawthorn WBD	*	0	9	-150	9	*	AG	1248	3.7	.0	10.0
L. Hawthorn WBL	*	150	5	0	0	*	AG	531	7.3	.0	10.0
M. Graysla NBAX	*	7	-750	7	-150	*	AG	370	3.4	.0	10.0
N. Graysla NBDX	*	7	150	7	750	*	AG	193	3.4	.0	10.0
O. Graysla SBAX	*	-7	750	-7	150	*	AG	141	3.4	.0	10.0
P. Graysla SBDX	*	-7	-150	-7	-750	*	AG	573	3.4	.0	10.0
Q. Hawthor EBAX	*	-750	-9	-150	-9	*	AG	925	3.4	.0	13.5
R. Hawthor EBDX	*	150	-9	750	-9	*	AG	1303	3.4	.0	10.0
S. Hawthor WBAX	*	750	9	150	9	*	AG	1881	3.4	.0	13.5
T. Hawthor WBDX	*	-150	9	-750	9	*	AG	1248	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-15	1.8
2. NW	*	-14	15	1.8
3. SW	*	-14	-17	1.8
4. NE	*	14	17	1.8
5. ES mdblk	*	150	-15	1.8
6. WN mdblk	*	-150	15	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-15	1.8
14. WN blk	*	-600	15	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	80.	1.4	.0	.0	.0	.0	.0	.0	.0	.7
2. NW	97.	1.8	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	79.	1.7	.0	.0	.0	.0	.3	.0	.1	.5
4. NE	99.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	280.	1.4	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	96.	1.3	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	83.	1.3	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	260.	1.8	.0	.0	.0	.0	.0	.0	.1	.1
9. SE mdblk	351.	.8	.4	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	11.	1.0	.1	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	185.	.6	.0	.1	.0	.0	.1	.0	.0	.0
13. ES blk	277.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-10 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

	CONC/LINK (PPM)											
RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.2	.0	.2	.0	.0	.0	.0	.0	.0	.2	.0
2. NW	.0	.9	.1	.3	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.3	.0	.2	.0	.0	.0	.0	.0	.0	.1	.0
4. NE	.0	1.0	.0	.2	.0	.0	.0	.0	.0	.2	.1	.0
5. ES mdblk	.0	.3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	.0	1.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.7
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.9	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	335. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Highridg NBA	5	-150	5	0	AG	27	6.2	.0	10.0
B. Highridg NBD	5	0	5	150	AG	121	3.9	.0	10.0
C. Highridg NBL	5	-150	0	0	AG	7	6.7	.0	10.0
D. Highridg SBA	-5	150	-5	0	AG	74	6.2	.0	10.0
E. Highridg SBD	-5	0	-5	-150	AG	46	3.9	.0	10.0
F. Highridg SBL	-5	150	0	0	AG	26	6.7	.0	10.0
G. Crest R EBA	-150	-7	0	-7	AG	481	4.9	.0	10.0
H. Crest R EBD	0	-7	150	-7	AG	514	3.5	.0	10.0
I. Crest R EBL	-150	-5	0	0	AG	71	6.7	.0	10.0
J. Crest R WBA	150	7	0	7	AG	819	5.2	.0	10.0
K. Crest R WBD	0	7	-150	7	AG	851	3.6	.0	10.0
L. Crest R WBL	150	5	0	0	AG	27	6.7	.0	10.0
M. Highrid NBAX	5	-750	5	-150	AG	34	3.4	.0	10.0
N. Highrid NBDX	5	150	5	750	AG	121	3.4	.0	10.0
O. Highrid SBAX	-5	750	-5	150	AG	100	3.4	.0	10.0
P. Highrid SBDX	-5	-150	-5	-750	AG	46	3.4	.0	10.0
Q. Crest EBAX	-750	-7	-150	-7	AG	552	3.4	.0	10.0
R. Crest EBDX	150	-7	750	-7	AG	514	3.4	.0	10.0
S. Crest WBAX	750	7	150	7	AG	846	3.4	.0	10.0
T. Crest WBDX	-150	7	-750	7	AG	851	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-14	1.8
2. NW	-12	14	1.8
3. SW	-12	-14	1.8
4. NE	12	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	12	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.7	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	97.	.9	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	278.	.7	.0	.0	.0	.0	.0	.0	.4	.0
4. NE	262.	.8	.0	.0	.0	.0	.0	.0	.1	.0
5. ES mdblk	278.	.7	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	97.	.8	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.8	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	263.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	355.	.2	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	188.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	277.	.6	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.7	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	357.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	3.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-11 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1
4. NE	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.5	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Silver S NBA	5	-150	5	0	AG	469	5.2	.0	10.0
B. Silver S NBD	5	0	5	150	AG	492	3.6	.0	10.0
C. Silver S NBL	5	-150	0	0	AG	70	6.7	.0	10.0
D. Silver S SBA	-7	150	-7	0	AG	415	4.9	.0	10.0
E. Silver S SBD	-7	0	-7	-150	AG	578	3.5	.0	10.0
F. Silver S SBL	-5	150	0	0	AG	6	6.7	.0	10.0
G. Basswood EBA	-150	-5	0	-5	AG	83	6.2	.0	10.0
H. Basswood EBD	0	-5	150	-5	AG	23	3.9	.0	10.0
I. Basswood EBL	-150	-5	0	0	AG	22	6.7	.0	10.0
J. Basswood WBA	150	5	0	5	AG	25	6.2	.0	10.0
K. Basswood WBD	0	5	-150	5	AG	109	3.9	.0	10.0
L. Basswood WBL	150	5	0	0	AG	112	6.7	.0	10.0
M. Silver NBAX	5	-750	5	-150	AG	539	3.4	.0	10.0
N. Silver NBDX	5	150	5	750	AG	492	3.4	.0	10.0
O. Silver SBAX	-7	750	-7	150	AG	421	3.4	.0	10.0
P. Silver SBDX	-7	-150	-7	-750	AG	578	3.4	.0	10.0
Q. Basswoo EBAX	-750	-5	-150	-5	AG	105	3.4	.0	10.0
R. Basswoo EBDX	150	-5	750	-5	AG	23	3.4	.0	10.0
S. Basswoo WBAX	750	5	150	5	AG	137	3.4	.0	10.0
T. Basswoo WBDX	-150	5	-750	5	AG	109	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-12	1.8
2. NW	-14	12	1.8
3. SW	-14	-12	1.8
4. NE	12	12	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	12	1.8
17. SE blk	12	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	187.	.6	.4	.0	.0	.0	.0	.0	.0	.0
2. NW	172.	.7	.1	.0	.0	.0	.3	.0	.0	.0
3. SW	172.	.6	.1	.0	.0	.0	.3	.0	.0	.0
4. NE	187.	.7	.3	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	97.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	263.	.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	.7	.4	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.6	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	8.	.6	.1	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	186.	.6	.0	.3	.0	.0	.0	.0	.0	.0
13. ES blk	275.	.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-12 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Hawthorn NBA	5	-150	5	0	AG	1267	5.7	.0	13.5
B. Hawthorn NBD	5	0	5	150	AG	1315	3.7	.0	10.0
C. Hawthorn NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Hawthorn SBA	-7	150	-7	0	AG	1477	6.2	.0	10.0
E. Hawthorn SBD	-7	0	-7	-150	AG	1496	3.9	.0	10.0
F. Hawthorn SBL	-5	150	0	0	AG	138	6.7	.0	10.0
G. Blackhor EBA	-150	0	0	0	AG	0	3.4	.0	10.0
H. Blackhor EBD	0	0	150	0	AG	174	3.9	.0	10.0
I. Blackhor EBL	-150	-2	0	0	AG	0	3.4	.0	10.0
J. Blackhor WBA	150	0	0	0	AG	84	6.2	.0	10.0
K. Blackhor WBD	0	0	-150	0	AG	0	3.4	.0	10.0
L. Blackhor WBL	150	2	0	0	AG	19	6.7	.0	10.0
M. Hawthor NBAX	5	-750	5	-150	AG	1267	3.4	.0	13.5
N. Hawthor NBDX	5	150	5	750	AG	1315	3.4	.0	10.0
O. Hawthor SBAX	-7	750	-7	150	AG	1615	3.4	.0	10.0
P. Hawthor SBDX	-7	-150	-7	-750	AG	1496	3.4	.0	10.0
Q. Blackho EBAX	-750	0	-150	0	AG	0	3.4	.0	10.0
R. Blackho EBDX	150	0	750	0	AG	174	3.4	.0	10.0
S. Blackho WBAX	750	0	150	0	AG	103	3.4	.0	10.0
T. Blackho WBDX	-150	0	-750	0	AG	0	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
	COORDINATES (M)		
1. SE	14	-7	1.8
2. NW	-14	7	1.8
3. SW	-14	-7	1.8
4. NE	12	7	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-14	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-14	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	188.	1.4	.9	.0	.0	.0	.2	.0	.0	.0
2. NW	8.	1.8	.0	.2	.0	1.2	.0	.0	.0	.0
3. SW	8.	1.7	.0	.2	.0	1.2	.0	.0	.0	.0
4. NE	187.	1.6	1.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	279.	.4	.0	.0	.0	.1	.0	.0	.0	.1
6. WN mdblk	91.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	262.	.4	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	352.	1.5	.9	.0	.0	.2	.2	.0	.0	.0
10. NW mdblk	172.	1.9	.2	.2	.0	1.2	.0	.1	.0	.0
11. SW mdblk	7.	1.5	.3	.1	.0	.1	.8	.0	.0	.0
12. NE mdblk	188.	1.4	.0	.7	.0	.3	.1	.0	.0	.0
13. ES blk	275.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	89.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-13 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
17. SE blk	.0	.0	.0	.0	.6	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.3	.8	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.3	.0	.0	.8	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.7	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	335. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crenshaw NBA	7	-150	7	0	AG	762	5.1	.0	10.0
B. Crenshaw NBD	7	0	7	150	AG	925	3.6	.0	10.0
C. Crenshaw NBL	5	-150	0	0	AG	240	7.2	.0	10.0
D. Crenshaw SBA	-5	150	-5	0	AG	1552	6.2	.0	13.5
E. Crenshaw SBD	-5	0	-5	-150	AG	1629	4.3	.0	10.0
F. Crenshaw SBL	-2	150	0	0	AG	0	3.4	.0	10.0
G. Indian P EBA	-150	-5	0	-5	AG	294	6.4	.0	10.0
H. Indian P EBD	0	-5	150	-5	AG	0	3.4	.0	10.0
I. Indian P EBL	-150	-5	0	0	AG	163	6.7	.0	10.0
J. Indian P WBA	150	0	0	0	AG	0	3.4	.0	10.0
K. Indian P WBD	0	0	-150	0	AG	457	5.7	.0	10.0
L. Indian P WBL	150	2	0	0	AG	0	3.4	.0	10.0
M. Crensha NBAX	7	-750	7	-150	AG	1002	3.4	.0	10.0
N. Crensha NBDX	7	150	7	750	AG	925	3.4	.0	10.0
O. Crensha SBAX	-5	750	-5	150	AG	1552	3.4	.0	13.5
P. Crensha SBDX	-5	-150	-5	-750	AG	1629	3.4	.0	10.0
Q. Indian EBAX	-750	-5	-150	-5	AG	457	3.4	.0	10.0
R. Indian EBDX	150	-5	750	-5	AG	0	3.4	.0	10.0
S. Indian WBAX	750	0	150	0	AG	0	3.4	.0	10.0
T. Indian WBDX	-150	0	-750	0	AG	457	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-12	1.8
2. NW	-14	7	1.8
3. SW	-12	-12	1.8
4. NE	14	7	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	7	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	7	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-14	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	7	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	7	1.8
17. SE blk	14	-600	1.8
18. NW blk	-14	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	277.	1.3	.3	.0	.0	.0	.3	.0	.3	.0
2. NW	170.	1.6	.2	.0	.1	.0	.7	.0	.0	.0
3. SW	7.	2.0	.0	.1	.0	1.1	.1	.0	.1	.0
4. NE	263.	1.4	.0	.2	.0	.4	.0	.0	.2	.0
5. ES mdblk	272.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	101.	.9	.0	.0	.0	.0	.0	.0	.2	.0
7. WS mdblk	79.	.9	.0	.0	.0	.1	.0	.0	.3	.0
8. EN mdblk	268.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	1.5	.6	.0	.2	.2	.3	.0	.0	.0
10. NW mdblk	173.	1.7	.1	.1	.0	1.2	.1	.0	.0	.0
11. SW mdblk	7.	1.5	.1	.0	.1	.1	.9	.0	.0	.0
12. NE mdblk	188.	1.3	.0	.5	.0	.4	.1	.0	.0	.0
13. ES blk	271.	.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	269.	.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-14 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.1	.0	.0	.1	.1	.0	.0	.0	.0	.0
4. NE	.2	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.1	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.5	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.8	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.8	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.4	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crenshaw NBA	9	-150	9	0	AG	719	5.1	.0	13.5
B. Crenshaw NBD	9	0	9	150	AG	1347	3.7	.0	10.0
C. Crenshaw NBL	5	-150	0	0	AG	25	6.7	.0	10.0
D. Crenshaw SBA	-9	150	-9	0	AG	1127	5.4	.0	13.5
E. Crenshaw SBD	-9	0	-9	-150	AG	547	3.5	.0	10.0
F. Crenshaw SBL	-5	150	0	0	AG	53	6.7	.0	10.0
G. Crestrid EBA	-150	-5	0	-5	AG	243	6.4	.0	10.0
H. Crestrid EBD	0	-5	150	-5	AG	295	4.0	.0	10.0
I. Crestrid EBL	-150	-5	0	0	AG	587	7.2	.0	10.0
J. Crestrid WBA	150	4	0	4	AG	50	6.2	.0	10.0
K. Crestrid WBD	0	4	-150	4	AG	620	7.0	.0	10.0
L. Crestrid WBL	150	2	0	0	AG	5	6.7	.0	10.0
M. Crensha NBAX	9	-750	9	-150	AG	744	3.4	.0	13.5
N. Crensha NBDX	9	150	9	750	AG	1347	3.4	.0	10.0
O. Crensha SBAX	-9	750	-9	150	AG	1180	3.4	.0	13.5
P. Crensha SBDX	-9	-150	-9	-750	AG	547	3.4	.0	10.0
Q. Crestri EBAX	-750	-5	-150	-5	AG	830	3.4	.0	10.0
R. Crestri EBDX	150	-5	750	-5	AG	295	3.4	.0	10.0
S. Crestri WBAX	750	4	150	4	AG	55	3.4	.0	10.0
T. Crestri WBDX	-150	4	-750	4	AG	620	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-12	1.8
2. NW	-17	10	1.8
3. SW	-15	-12	1.8
4. NE	15	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	1.3	.2	.0	.0	.0	.0	.0	.2	.0
2. NW	128.	1.2	.1	.0	.0	.4	.0	.0	.0	.0
3. SW	7.	1.7	.0	.1	.0	.8	.0	.0	.1	.0
4. NE	262.	1.7	.0	.3	.0	.2	.0	.0	.1	.0
5. ES mdblk	275.	.7	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	100.	1.2	.0	.0	.0	.0	.0	.0	.1	.0
7. WS mdblk	79.	1.4	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	267.	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	1.0	.5	.0	.0	.2	.0	.0	.0	.0
10. NW mdblk	172.	1.2	.1	.1	.0	.8	.0	.0	.0	.0
11. SW mdblk	5.	.9	.0	.1	.0	.1	.3	.0	.0	.0
12. NE mdblk	192.	1.2	.0	.7	.0	.3	.0	.0	.0	.0
13. ES blk	275.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.7	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.8	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-15 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.4	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.2	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.2	.0	.2	.0	.0	.2	.0	.0	.0	.0	.0	.0
4. NE	.4	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.3	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.6	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.7	.2	.0	.0	.0	.0	.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Rancho Palos Verdes General Plan
              RUN: GPBO-16          (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
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I. SITE VARIABLES

```
     U=    .5 M/S             Z0= 100. CM            ALT=   335. (M)
   BRG= WORST CASE            VD=   .0 CM/S
  CLAS=     7 (G)             VS=   .0 CM/S
  MIXH= 1000. M              AMB=   .0 PPM
 SIGTH=   10. DEGREES       TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Crenshaw NBA	7	-150	7	0	AG	199	4.8	.0	10.0
B. Crenshaw NBD	7	0	7	150	AG	741	3.5	.0	10.0
C. Crenshaw NBL	5	-150	0	0	AG	77	6.7	.0	10.0
D. Crenshaw SBA	-9	150	-9	0	AG	1067	5.4	.0	13.5
E. Crenshaw SBD	-9	0	-9	-150	AG	254	3.5	.0	10.0
F. Crenshaw SBL	-5	150	0	0	AG	170	6.7	.0	10.0
G. Crest Ro EBA	-150	-7	0	-7	AG	109	6.2	.0	10.0
H. Crest Ro EBD	0	-7	150	-7	AG	226	4.0	.0	10.0
I. Crest Ro EBL	-150	-5	0	0	AG	450	7.2	.0	10.0
J. Crest Ro WBA	150	4	0	4	AG	123	6.2	.0	10.0
K. Crest Ro WBD	0	4	-150	4	AG	976	7.3	.0	10.0
L. Crest Ro WBL	150	2	0	0	AG	2	6.7	.0	10.0
M. Crensha NBAX	7	-750	7	-150	AG	276	3.4	.0	10.0
N. Crensha NBDX	7	150	7	750	AG	741	3.4	.0	10.0
O. Crensha SBAX	-9	750	-9	150	AG	1237	3.4	.0	13.5
P. Crensha SBDX	-9	-150	-9	-750	AG	254	3.4	.0	10.0
Q. Crest R EBAX	-750	-7	-150	-7	AG	559	3.4	.0	10.0
R. Crest R EBDX	150	-7	750	-7	AG	226	3.4	.0	10.0
S. Crest R WBAX	750	4	150	4	AG	125	3.4	.0	10.0
T. Crest R WBDX	-150	4	-750	4	AG	976	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-14	1.8
2. NW	-17	10	1.8
3. SW	-15	-14	1.8
4. NE	14	10	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	10	1.8
17. SE blk	14	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	280.	1.0	.0	.0	.0	.0	.0	.0	.1	.0
2. NW	261.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	6.	1.6	.0	.0	.0	.7	.0	.0	.0	.0
4. NE	263.	1.8	.0	.2	.0	.2	.0	.0	.0	.0
5. ES mdblk	275.	.7	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	99.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	76.	1.1	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	267.	.7	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.7	.2	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	171.	1.1	.0	.0	.0	.8	.0	.1	.0	.0
11. SW mdblk	3.	.7	.0	.0	.0	.1	.1	.0	.0	.0
12. NE mdblk	194.	.9	.0	.4	.0	.3	.0	.0	.0	.0
13. ES blk	275.	.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	267.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.9	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	3.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.8	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-16 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.3	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.3	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.2	.0	.3	.0	.0	.1	.1	.0	.0	.0	.0	.0
4. NE	.3	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.2	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.4	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.6	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Forresta NBA	5	-150	5	0	AG	49	5.3	.0	10.0
B. Forresta NBD	5	0	5	150	AG	101	3.6	.0	10.0
C. Forresta NBL	5	-150	0	0	AG	18	6.7	.0	10.0
D. Forresta SBA	-5	150	-5	0	AG	29	5.3	.0	10.0
E. Forresta SBD	-5	0	-5	-150	AG	80	3.6	.0	10.0
F. Forresta SBL	-5	150	0	0	AG	28	6.7	.0	10.0
G. Palos Ve EBA	-150	-7	0	-7	AG	970	7.3	.0	10.0
H. Palos Ve EBD	0	-7	150	-7	AG	1025	6.4	.0	10.0
I. Palos Ve EBL	-150	-5	0	0	AG	20	6.7	.0	10.0
J. Palos Ve WBA	150	7	0	7	AG	882	7.2	.0	10.0
K. Palos Ve WBD	0	7	-150	7	AG	843	5.7	.0	10.0
L. Palos Ve WBL	150	5	0	0	AG	53	6.7	.0	10.0
M. Forrest NBAX	5	-750	5	-150	AG	67	3.4	.0	10.0
N. Forrest NBDX	5	150	5	750	AG	101	3.4	.0	10.0
O. Forrest SBAX	-5	750	-5	150	AG	57	3.4	.0	10.0
P. Forrest SBDX	-5	-150	-5	-750	AG	80	3.4	.0	10.0
Q. Palos V EBAX	-750	-7	-150	-7	AG	990	3.4	.0	10.0
R. Palos V EBDX	150	-7	750	-7	AG	1025	3.4	.0	10.0
S. Palos V WBAX	750	7	150	7	AG	935	3.4	.0	10.0
T. Palos V WBDX	-150	7	-750	7	AG	843	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	12	-14	1.8
2. NW	-12	14	1.8
3. SW	-12	-14	1.8
4. NE	12	14	1.8
5. ES mdblk	150	-14	1.8
6. WN mdblk	-150	14	1.8
7. WS mdblk	-150	-14	1.8
8. EN mdblk	150	14	1.8
9. SE mdblk	12	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	12	150	1.8
13. ES blk	600	-14	1.8
14. WN blk	-600	14	1.8
15. WS blk	-600	-14	1.8
16. EN blk	600	14	1.8
17. SE blk	12	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	12	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	1.4	.0	.0	.0	.0	.0	.0	.9	.1
2. NW	98.	1.4	.0	.0	.0	.0	.0	.0	.0	.3
3. SW	81.	1.5	.0	.0	.0	.0	.0	.0	.2	.8
4. NE	99.	1.4	.0	.0	.0	.0	.0	.0	.0	.2
5. ES mdblk	278.	1.5	.0	.0	.0	.0	.0	.0	.0	.9
6. WN mdblk	98.	1.3	.0	.0	.0	.0	.0	.0	.3	.2
7. WS mdblk	82.	1.6	.0	.0	.0	.0	.0	.0	1.0	.0
8. EN mdblk	262.	1.5	.0	.0	.0	.0	.0	.0	.2	.2
9. SE mdblk	355.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	173.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	7.	.3	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	185.	.3	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	356.	.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	5.	.2	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	184.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-17 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.8	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.9	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
5. ES mdblk	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	4	-150	4	0	AG	459	5.2	.0	10.0
B. Palos Ve NBD	4	0	4	150	AG	677	3.7	.0	10.0
C. Palos Ve NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Palos Ve SBA	-5	150	-5	0	AG	336	5.1	.0	10.0
E. Palos Ve SBD	-5	0	-5	-150	AG	699	3.7	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	493	7.3	.0	10.0
G. Miralest EBA	-150	0	0	0	AG	0	3.4	.0	10.0
H. Miralest EBD	0	0	150	0	AG	692	7.0	.0	10.0
I. Miralest EBL	-150	-2	0	0	AG	0	3.4	.0	10.0
J. Miralest WBA	150	5	0	5	AG	417	7.2	.0	10.0
K. Miralest WBD	0	5	-150	5	AG	0	3.4	.0	10.0
L. Miralest WBL	150	5	0	0	AG	363	7.3	.0	10.0
M. Palos V NBAX	4	-750	4	-150	AG	459	3.4	.0	10.0
N. Palos V NBDX	4	150	4	750	AG	677	3.4	.0	10.0
O. Palos V SBAX	-5	750	-5	150	AG	829	3.4	.0	10.0
P. Palos V SBDX	-5	-150	-5	-750	AG	699	3.4	.0	10.0
Q. Mirales EBAX	-750	0	-150	0	AG	0	3.4	.0	10.0
R. Mirales EBDX	150	0	750	0	AG	692	3.4	.0	10.0
S. Mirales WBAX	750	5	150	5	AG	780	3.4	.0	10.0
T. Mirales WBDX	-150	5	-750	5	AG	0	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-7	1.8
2. NW	-12	12	1.8
3. SW	-12	-7	1.8
4. NE	10	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	10	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	1.6	.0	.4	.0	.1	.0	.3	.0	.3
2. NW	98.	1.6	.0	.1	.0	.1	.0	.2	.0	.4
3. SW	83.	1.7	.1	.0	.0	.0	.2	.0	.0	.6
4. NE	187.	1.2	.3	.0	.0	.0	.1	.0	.0	.2
5. ES mdblk	281.	1.4	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	92.	.5	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	87.	.5	.0	.0	.0	.0	.0	.0	.0	.1
8. EN mdblk	259.	1.4	.0	.0	.0	.0	.0	.0	.0	.4
9. SE mdblk	355.	.8	.3	.0	.0	.0	.1	.0	.0	.0
10. NW mdblk	170.	1.2	.0	.2	.0	.3	.0	.6	.0	.0
11. SW mdblk	7.	.9	.1	.0	.0	.0	.4	.0	.0	.0
12. NE mdblk	187.	.9	.0	.4	.0	.1	.0	.2	.0	.0
13. ES blk	276.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	90.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	89.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.7	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-18 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.2	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.4	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.2	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.3	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.4	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.5	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	9	-150	9	0	AG	195	4.8	.0	13.5
B. Palos Ve NBD	9	0	9	150	AG	426	3.5	.0	10.0
C. Palos Ve NBL	5	-150	0	0	AG	26	6.7	.0	10.0
D. Palos Ve SBA	-9	150	-9	0	AG	384	4.8	.0	13.5
E. Palos Ve SBD	-9	0	-9	-150	AG	353	3.5	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	102	6.7	.0	10.0
G. Crest Ro EBA	-150	-4	0	-4	AG	33	6.2	.0	10.0
H. Crest Ro EBD	0	-4	150	-4	AG	141	3.9	.0	10.0
I. Crest Ro EBL	-150	-2	0	0	AG	83	6.7	.0	10.0
J. Crest Ro WBA	150	2	0	2	AG	189	6.2	.0	10.0
K. Crest Ro WBD	0	2	-150	2	AG	153	3.9	.0	10.0
L. Crest Ro WBL	150	2	0	0	AG	61	6.7	.0	10.0
M. Palos V NBAX	9	-750	9	-150	AG	221	3.4	.0	13.5
N. Palos V NBDX	9	150	9	750	AG	426	3.4	.0	10.0
O. Palos V SBAX	-9	750	-9	150	AG	486	3.4	.0	13.5
P. Palos V SBDX	-9	-150	-9	-750	AG	353	3.4	.0	10.0
Q. Crest R EBAX	-750	-4	-150	-4	AG	116	3.4	.0	10.0
R. Crest R EBDX	150	-4	750	-4	AG	141	3.4	.0	10.0
S. Crest R WBAX	750	2	150	2	AG	250	3.4	.0	10.0
T. Crest R WBDX	-150	2	-750	2	AG	153	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	17	-10	1.8
2. NW	-17	8	1.8
3. SW	-15	-10	1.8
4. NE	15	8	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	8	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	8	1.8
9. SE mdblk	17	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	15	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	8	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	8	1.8
17. SE blk	17	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	.5	.0	.2	.0	.0	.0	.0	.0	.0
2. NW	96.	.6	.0	.0	.0	.1	.0	.0	.0	.0
3. SW	7.	.6	.0	.0	.0	.3	.0	.0	.0	.0
4. NE	263.	.5	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	277.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	84.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.4	.1	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	6.	.4	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	276.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	94.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	85.	.2	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-19 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Palos Ve NBA	0	-150	0	0	AG	0	3.4	.0	10.0
B. Palos Ve NBD	0	0	0	150	AG	226	4.0	.0	10.0
C. Palos Ve NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Palos Ve SBA	-5	150	-5	0	AG	159	6.2	.0	10.0
E. Palos Ve SBD	-5	0	-5	-150	AG	0	3.4	.0	10.0
F. Palos Ve SBL	-5	150	0	0	AG	87	6.7	.0	10.0
G. Palos Ve EBA	-150	-5	0	-5	AG	897	6.8	.0	10.0
H. Palos Ve EBD	0	-5	150	-5	AG	984	4.9	.0	10.0
I. Palos Ve EBL	-150	-5	0	0	AG	157	6.7	.0	10.0
J. Palos Ve WBA	150	4	0	4	AG	863	6.8	.0	10.0
K. Palos Ve WBD	0	4	-150	4	AG	953	4.9	.0	10.0
L. Palos Ve WBL	150	2	0	0	AG	0	3.4	.0	10.0
M. Palos V NBAX	0	-750	0	-150	AG	0	3.4	.0	10.0
N. Palos V NBDX	0	150	0	750	AG	226	3.4	.0	10.0
O. Palos V SBAX	-5	750	-5	150	AG	246	3.4	.0	10.0
P. Palos V SBDX	-5	-150	-5	-750	AG	0	3.4	.0	10.0
Q. Palos V EBAX	-750	-5	-150	-5	AG	1054	3.4	.0	10.0
R. Palos V EBDX	150	-5	750	-5	AG	984	3.4	.0	10.0
S. Palos V WBAX	750	4	150	4	AG	863	3.4	.0	10.0
T. Palos V WBDX	-150	4	-750	4	AG	953	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	7	-12	1.8
2. NW	-12	10	1.8
3. SW	-12	-12	1.8
4. NE	7	10	1.8
5. ES mdblk	150	-12	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-12	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	7	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	7	150	1.8
13. ES blk	600	-12	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-12	1.8
16. EN blk	600	10	1.8
17. SE blk	7	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	7	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	1.4	.0	.0	.0	.0	.0	.0	.8	.0
2. NW	98.	1.4	.0	.0	.0	.0	.0	.0	.0	.3
3. SW	278.	1.4	.0	.0	.0	.0	.0	.0	.9	.0
4. NE	261.	1.5	.0	.0	.0	.0	.0	.0	.4	.0
5. ES mdblk	277.	1.3	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	98.	1.4	.0	.0	.0	.0	.0	.0	.3	.0
7. WS mdblk	82.	1.6	.0	.0	.0	.0	.0	.0	.9	.0
8. EN mdblk	263.	1.4	.0	.0	.0	.0	.0	.0	.1	.2
9. SE mdblk	357.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.5	.0	.0	.0	.2	.0	.1	.0	.0
11. SW mdblk	2.	.3	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	191.	.5	.0	.1	.0	.1	.0	.0	.0	.0
13. ES blk	276.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	.9	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	84.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	359.	.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	360.	.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-20 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.1	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. NW	.0	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
4. NE	.1	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.2	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.5
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.5	.0
17. SE blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S            Z0= 100. CM           ALT=   335. (M)
   BRG= WORST CASE           VD=   .0 CM/S
  CLAS=     7 (G)            VS=   .0 CM/S
  MIXH= 1000. M             AMB=   .0 PPM
 SIGTH=   10. DEGREES      TEMP= 10.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Miralest NBA	4	-150	4	0	AG	346	5.1	.0	10.0
B. Miralest NBD	4	0	4	150	AG	520	3.6	.0	10.0
C. Miralest NBL	2	-150	0	0	AG	0	3.4	.0	10.0
D. Miralest SBA	-5	150	-5	0	AG	190	4.8	.0	10.0
E. Miralest SBD	-5	0	-5	-150	AG	241	3.5	.0	10.0
F. Miralest SBL	-5	150	0	0	AG	415	7.3	.0	10.0
G. 1st Stre EBA	-150	0	0	0	AG	0	3.4	.0	10.0
H. 1st Stre EBD	0	0	150	0	AG	466	5.7	.0	10.0
I. 1st Stre EBL	-150	-2	0	0	AG	0	3.4	.0	10.0
J. 1st Stre WBA	150	5	0	5	AG	225	6.4	.0	10.0
K. 1st Stre WBD	0	5	-150	5	AG	0	3.4	.0	10.0
L. 1st Stre WBL	150	5	0	0	AG	51	6.7	.0	10.0
M. Mirales NBAX	4	-750	4	-150	AG	346	3.4	.0	10.0
N. Mirales NBDX	4	150	4	750	AG	520	3.4	.0	10.0
O. Mirales SBAX	-5	750	-5	150	AG	605	3.4	.0	10.0
P. Mirales SBDX	-5	-150	-5	-750	AG	241	3.4	.0	10.0
Q. 1st Str EBAX	-750	0	-150	0	AG	0	3.4	.0	10.0
R. 1st Str EBDX	150	0	750	0	AG	466	3.4	.0	10.0
S. 1st Str WBAX	750	5	150	5	AG	276	3.4	.0	10.0
T. 1st Str WBDX	-150	5	-750	5	AG	0	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	10	-7	1.8
2. NW	-12	12	1.8
3. SW	-12	-7	1.8
4. NE	10	12	1.8
5. ES mdblk	150	-7	1.8
6. WN mdblk	-150	12	1.8
7. WS mdblk	-150	-7	1.8
8. EN mdblk	150	12	1.8
9. SE mdblk	10	-150	1.8
10. NW mdblk	-12	150	1.8
11. SW mdblk	-12	-150	1.8
12. NE mdblk	10	150	1.8
13. ES blk	600	-7	1.8
14. WN blk	-600	12	1.8
15. WS blk	-600	-7	1.8
16. EN blk	600	12	1.8
17. SE blk	10	-600	1.8
18. NW blk	-12	600	1.8
19. SW blk	-12	-600	1.8
20. NE blk	10	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	1.0	.0	.3	.0	.0	.0	.3	.0	.2
2. NW	97.	.9	.0	.0	.0	.0	.0	.2	.0	.2
3. SW	83.	.8	.0	.0	.0	.0	.0	.0	.0	.4
4. NE	351.	.7	.0	.3	.0	.0	.0	.3	.0	.0
5. ES mdblk	281.	.7	.0	.0	.0	.0	.0	.0	.0	.4
6. WN mdblk	92.	.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	87.	.3	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	260.	.6	.0	.0	.0	.0	.0	.0	.0	.2
9. SE mdblk	356.	.6	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	170.	.9	.0	.1	.0	.2	.0	.5	.0	.0
11. SW mdblk	6.	.5	.0	.0	.0	.0	.1	.0	.0	.0
12. NE mdblk	188.	.7	.0	.3	.0	.0	.0	.2	.0	.0
13. ES blk	276.	.5	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	89.	.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	88.	.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	264.	.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	355.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-21 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.2	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.3	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 335. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 10.0 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Western NBA	7	-150	7	0	AG	1740	6.8	.0	10.0
B. Western NBD	7	0	7	150	AG	1724	4.3	.0	10.0
C. Western NBL	5	-150	0	0	AG	72	6.7	.0	10.0
D. Western SBA	-9	150	-9	0	AG	477	4.9	.0	13.5
E. Western SBD	-9	0	-9	-150	AG	604	3.5	.0	10.0
F. Western SBL	-5	150	0	0	AG	57	6.7	.0	10.0
G. Toscanin EBA	-150	-4	0	-4	AG	99	6.2	.0	10.0
H. Toscanin EBD	0	-4	150	-4	AG	146	3.9	.0	10.0
I. Toscanin EBL	-150	-2	0	0	AG	36	6.7	.0	10.0
J. Toscanin WBA	150	4	0	4	AG	27	6.2	.0	10.0
K. Toscanin WBD	0	4	-150	4	AG	96	3.9	.0	10.0
L. Toscanin WBL	150	2	0	0	AG	62	6.7	.0	10.0
M. Western NBAX	7	-750	7	-150	AG	1812	3.4	.0	10.0
N. Western NBDX	7	150	7	750	AG	1724	3.4	.0	10.0
O. Western SBAX	-9	750	-9	150	AG	534	3.4	.0	13.5
P. Western SBDX	-9	-150	-9	-750	AG	604	3.4	.0	10.0
Q. Toscani EBAX	-750	-4	-150	-4	AG	135	3.4	.0	10.0
R. Toscani EBDX	150	-4	750	-4	AG	146	3.4	.0	10.0
S. Toscani WBAX	750	4	150	4	AG	89	3.4	.0	10.0
T. Toscani WBDX	-150	4	-750	4	AG	96	3.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE	14	-10	1.8
2. NW	-17	10	1.8
3. SW	-15	-10	1.8
4. NE	14	10	1.8
5. ES mdblk	150	-10	1.8
6. WN mdblk	-150	10	1.8
7. WS mdblk	-150	-10	1.8
8. EN mdblk	150	10	1.8
9. SE mdblk	14	-150	1.8
10. NW mdblk	-17	150	1.8
11. SW mdblk	-15	-150	1.8
12. NE mdblk	14	150	1.8
13. ES blk	600	-10	1.8
14. WN blk	-600	10	1.8
15. WS blk	-600	-10	1.8
16. EN blk	600	10	1.8
17. SE blk	14	-600	1.8
18. NW blk	-17	600	1.8
19. SW blk	-15	-600	1.8
20. NE blk	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	189.	1.9	1.6	.0	.0	.0	.0	.0	.0	.0
2. NW	167.	1.0	.5	.0	.0	.0	.2	.0	.0	.0
3. SW	167.	.9	.5	.0	.0	.0	.3	.0	.0	.0
4. NE	188.	1.9	1.4	.1	.0	.0	.0	.0	.0	.0
5. ES mdblk	275.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	97.	.4	.1	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	85.	.4	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	263.	.4	.1	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	352.	2.0	1.6	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	1.0	.2	.2	.0	.3	.0	.0	.0	.0
11. SW mdblk	10.	1.0	.4	.1	.0	.0	.3	.0	.0	.0
12. NE mdblk	187.	1.4	.1	1.0	.0	.0	.0	.0	.0	.0
13. ES blk	273.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	95.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	87.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	265.	.3	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.8	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.1	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Rancho Palos Verdes General Plan
RUN: GPBO-22 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. NW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	.0	.0	.0	.0	.9	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.3	.3	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.3	.0	.0	.3	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.9	.1	.0	.0	.0	.0	.0

APPENDIX C

GLOBAL CLIMATE CHANGE WORKSHEETS

Greenhouse Gas Emissions Worksheet

Project Parameters	
	2012
Vehicles (trips/day)	8,837
Electricity used (MWh/year)	7,800
(mscf/year)	35
tons/year)	910

(Assumes these occur 365 days/year)
MWh = Megawatt hour
mscf = million standard cubic feet

Emission Source	Total (metric tons/yr) CO_2	CH_4	N_2O	CO_2e	Percent of Total
Vehicles (1)	15,000	0.59	1.2	15,000	69%
Electricity Production	2,200	0.024	0.013	2,200	10%
Natural Gas Combustion(1)	2,300	0.037	0.035	2,300	11%
Solid Waste	1,200	--	--	1,200	6.0%
Other Area Sources(2)	1,000	--	--	1,000	5.0%
Total Annual Emissions	22,000	0.65	1.2	22,000	101.0%

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.

(1) CO_2 emissions for Vehicles and Natural Gas from URBEMIS 2007 outputs, if available.

(2) Includes CO_2 emissions for hearth combustion and landscaping equipment from URBEMIS 2007 outputs.

tons/metric ton
1.1025

U.S. or Metric?
○ Tons ◉ Metric Tons

Emission Source	Total CO2e (Tg/yr)
Vehicles	0.015
Electricity Production	0.0022
Natural Gas Combustion	0.0023
Solid Waste	0.0012
Total (CO_2e)	0.021
% of SCAG 2004 total	0.012
% of State 2004 total	0.0044

1,000,000 tonne/Tg

Year of data	Comparison Area GHG Usage		
2004	SCAG	176.79	(Tg/yr)
2004	State	480	(Tg/yr)

Global warming potentials (GWPs) are used to compare the abilities of different GHGs to trap heat in the atmosphere. GWPs are based on the radiative efficiency (heat-absorbing ability) of each gas relative to that of CO_2, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. The GWP provides a construct for converting emissions of various gases into a common measure, which allows climate analysts to aggregate the radiative impacts of various GHGs into a uniform measure denominated in carbon or CO_2 equivalents. The generally accepted authority on GWPs is the Intergovernmental Panel on Climate Change (IPCC). In 2007, the IPCC updated its estimates of GWPs for key GHGs. The table below lists the GWPs to calculate carbon dioxide equivalents (CO_2e)

Global Warming Potential

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	25
Nitrous Oxide	120	298
HFC-23	264	14800
HFC-134a	14.6	1430
HFC-152a	1.5	124
PFC: Tetrafluoromethane (CF_4)	50000	7390
PFC: Hexafluoromethane (C_2F_6)	10000	12200
Sulfur Hexafluoride (SF_6)	3200	22800

Electricity Emissions Worksheet

Commercial Electricity Usage (2003 data):

Commercial Building Type	Electricity Consumption per Building by Building Type	Electricity Consumption per Square Foot by Building Type	Project Info (either # of bldgs or total sf, not both)		Annual Electricity Consumption
	thousand kWH	kWh	# of bldgs	total sf	MWh
All Buildings	226	**14**			0
Mercantile	327	**17.8**			0
Enclosed and Strip Malls	718	**21.1**			0
Retail (Other than Mall)	139	14.3			0
Education	283	**10.7**		115530	1,236
Food Sales	276	49.4			0
Food Service	213	**31.8**			0
Health Care (All)	564	**20.1**		5759	116
Inpatient Health	6,628	27.5			0
Outpatient Health	168	16.1			0
Lodging	483	**11.9**			0
Office	256	**14.6**		7232	106
Other	510	22.5			0
Public Assembly	179	12.5		10000	125
Public Order and Safety	237	15.3			0
Religious Worship	49	4.9		62426	306
Service	73	**8**			0
Vacant	42	2.4			0
Warehouse and Storage	154	**5.9**	1		154

Note: Health Care (All) includes both "Inpatient Health" and "Outpatient Health".

Source: Energy Information Administration, www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html, Table C14A - Bold valu

Residential Energy Usage (2001 data):

	Mountain	Pacific	Total US.	Project Info # of units	Annual Consumption MWh
Single Family	9,926	7,622	10,656	462	3,521
Apartments (2-4 Units)			7,176	117	840
Apartments (5 or more Units)			6,204		0
Mobile Home			12,469		0
Total Residential (kWh)					4,361

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A-G of the 2001 Residential Energy Consumption Survey.

	CO_2			CH_4	N_2O
Electricity production emission factors for CA	lb/kWh 0.61	short tons/MWh 0.303	tons/MWh 0.275	lb/MWh 0.0067	lb/MWh 0.0037
U.S. Average	1.34	0.668	0.606	0.0111	0.0192

Source: Energy Information Administration, Updated State-and Regional-level Greenhouse Gas Emission Factors for Electricity (March 2002), http://www.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/e-supdoc.pdf. (http://www.eia.doe.gov/oiaf/1605/ee-factors.html accessed 4/14/2008)

Water Usage Emissions Worksheet

kWh/MG

Select the appropriate location:

Project Location in California
○ Northern ◉ Southern

	Northern	Southern
Water Supply and Conveyance	2,117	9,727
Water Treatment	111	111
Water Distribution	1,272	1,272
Wastewater Treatment	1,911	1,911
Totals	5,411	13,021

Refining Estimates of Water-Related Energy Use In California, CEC, Dec. 2006

3.26E+05 gallons/acre-feet

Project total usage 338.4 acre-feet/year

Water Supply and Conveyance	1.07E+06	kWh/year
Water Treatment	1.22E+04	kWh/year
Water Distribution	1.40E+05	kWh/year
Wastewater Treatment	2.11E+05	kWh/year
Total	1.44E+06	kWh/year

Water usage calculator

Number of Residences	579	Total Gallons Per Day	302,173
Estimated people per residence(1)	2.87	Gallons Per Year	110,293,145
Gallons/Resident/Day(2)	100	Total Acre-feet Per Year	338.43
Total Gallons Per Day	166,173		
Gallons Per Year	60,653,145		
Acre-feet Per Year	186		

(1) United States Census. California County QuickFacts. Available at http://quickfacts.census.gov/qfd/states/06000.html. Accessed January 2009.

(2) Pacific Institute. *Waste Not, Want Not: The Potential for Urban Water Conservation in California* . November 2003. Page 5 (http://www.pacinst.org/reports/urban_usage/)

Estimated Number of Employees(1)	1,000
Gallons/Employee/Day(2)	136
Total Gallons Per Day	136,000
Gallons Per Year	49,640,000
Acre-feet Per Year	152

(1) Specific employee data was not available at the time of this analysis. Employee numbers by type (office, retail) were estimated based on percentage of building types within the project.

(2) Pacific Institute.2003. *Waste Not, Want Not: The Potential for Urban Water Conservation in California.* November.

Solid Waste Emissions Worksheet

Total Square Footage - Office	7232
Disposal Rate (dry short tons/sq. ft./year)	0.0108
Office Waste (Dry Short Tons/Year)	78.1056
Total Square Footage - Retail	0
Disposal Rate (dry short tons/sq. ft./year)	0.0024
Retail Waste (Dry Short Tons/Year)	0
Total Residences	579
Disposal Rate (dry short tons/unit/year)(2)	1.17
Residential Waste (Dry Short Tons/Year)	677.43
Total Square Footage - Industrial	0
Disposal Rate (lbs/1000 sq. ft./day)(3)	62.5
Industrial Waste (Dry Short Tons/Year)	0
Total Square Footage - Institutional	200947
Disposal Rate (lbs/sq. ft./day)(4)	0.007
Institutional Waste (Dry Short Tons/Year	256.7097925
Total Waste (Dry Short Tons/Year)	1000
CO_2e Tonnes/Year	1200

Dry Short Tons/Wet Short Tons of MSW	0.84	
MTCE/Wet Short Ton of MSW (6)	0.272	1 metric ton
Tonnes of CO_2e/Wet Short Ton of MSW	1.007	0.27

(1) California Integrated Waste Management Board, 2009. Estimated Solid Waste Generation Rates for Commercial Establishments. Available at http://www.ciwmb.ca.gov/wastechar/wastegenrates/Commercial.htm.

(2) California Integrated Waste Management Board, 2009. Estimated Solid Waste Generation Rates for Residential Developments. Available at http://www.ciwmb.ca.gov/wastechar/wastegenrates/Residential.htm

(3) California Integrated Waste Management Board, 2009. Estimated Solid Waste Generation Rates for Industrial Establishments. Available at http://www.ciwmb.ca.gov/wastechar/wastegenrates/Industrial.htm.

(4) California Integrated Waste Management Board, 2009. Estimated Solid Waste Generation Rates for Commercial Establishments. Available at http://www.ciwmb.ca.gov/wastechar/wastegenrates/Institution.htm.

(5) U.S. Environmental Protection Agency. 2006. *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks*, Exhibit 6-4. September.

(6) U.S. Environmental Protection Agency. 2006. *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks*, Exhibit 6-6. September.

Natural Gas Emissions Worksheet

Commercial Natural Gas Usage (2003 data):

Commercial Building Type	Natural Gas Consumption per Building by Building Type thousand cf	Natural Gas Consumption per Square Foot by Building Type cf	Project Info (enter values on Electricity worksheet) # of bldgs	total sf	Annual Natural Gas Consumption thousand cf
All Buildings	782	**29.2**	0	0	0
Mercantile	653	**19.7**	0	0	0
Enclosed and Strip Malls	1142	33.4	0	0	0
Retail (Other than Mall)	362	**11.4**	0	0	0
Education	1223	**34.8**	0	115530	4,020
Food Sales	383	50.2	0	0	0
Food Service	870	141.2	0	0	0
Health Care (All)	3283	**68.7**	0	5759	396
Inpatient Health	28,222	109.8	0	0	0
Outpatient Health	574	50.2	0	0	0
Lodging	2432	**31.5**	0	0	0
Office	535	**14.2**	0	7232	103
Other	1885	67.6	0	0	0
Public Assembly	678	36.4	0	10000	364
Public Order and Safety	771	43.7	0	0	0
Religious Worship	362	30.3	0	62426	1,892
Service	481	54.1	0	0	0
Vacant	557	23	0	0	0
Warehouse and Storage	687	23.4	1	0	687

Note: Health Care (All) includes both "Inpatient Health" and "Outpatient Health".

Source: Energy Information Administration, www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html, Table C24A - Bold value

Residential Energy Usage (2001 data):

	Mountain	**Pacific**	**Total US.**	Project Info # of units	Annual Consumption thousand cf
Single Family	67	48	70	462	22,176
Apartments (2-4 Units)(1)		48		117	5,616
Apartments (5 or more Units)			28	0	0
Mobile Home			58	0	0
Total Natural Gas Usage					27,792

(1) Single family natural gas consumption was used to represent 2-4 Unit Apartments, as the total U.S. number (70 thousand cf) would exceed the Pacific region single-family home consumption rates. Single-family and 2-4 Unit Apartments have consistent total U.S. consumption rates, so it is reasonable that regional rates would be consistent as well.

Source: Table CE1-12c. Total Energy Consumption in U.S. Households by West Census Region, 2001 (http://www.eia.doe.gov/emeu/recs/recs

	CO_2	**CH_4**	**N_2O**
Natural gas combustion	lb/10^6 scf	lb/10^6 scf	lb/10^6 scf
	120,000	2.3	2.2

Source: EPA AP-42 Vol I Chapter 1.4, Table 1.4-2

Vehicle Emissions Worksheet

avg. speed=	40	(mph)	avg trip length=	10	(miles)
2012		**CO_2**	**CH_4**	**N_2O**	**Fleet %**
LDA	CAT	291.024	0.016	0.032	61.3%
LDA	DSL	358.328	0.006	0.001	0.5%
LDT	CAT	364.328	0.0215	0.042	34.3%
LDT	DSL	348.968	0.0035	0.002	0.4%
HDT	CAT	468.036	0.0568	0.088	1.8%
HDT	DSL	930.717	0.0102	0.005	1.7%
Composite		330.808	0.018	0.036	100.0%

Notes:

CO_2 and CH_4 from EMFAC2007

N_2O from EPA *Update of Methane and Nitrous Oxide Emission Factors for On-Highway Vehicles* , November 2004, Table 28.

Fleet percentages from URBEMIS2007

	From URBEMIS2007		
	Vehicle Categories	Fleet %	Diesel %
LDA	Light Auto	51.6	0.4
	Light Truck < 3750 lbs	7.4	4.1
LDT	Light Truck 3751-5750 lbs	22.9	0
	Med Truck 5751-8500 lbs	10.6	0
HDT	Lite-Heavy Truck 8501-10,000 lbs	1.6	18.8
	Lite-Heavy Truck 10,001-14,000 lbs	0.5	40
	Med-Heavy Truck 14,001-33,000 lbs	0.9	77.8
	Heavy-Heavy Truck 33,001-60,000 lbs	0.5	100
LDT	Other Bus	0.1	100
	Urban Bus	0.1	100
LDA	Motorcycle	2.8	0
LDT	School Bus	0.1	100
	Motor Home	0.9	11.1
		100	

Appendix D

NOISE IMPACT ANALYSIS

RANCHO PALOS VERDES GENERAL PLAN UPDATE

CITY OF RANCHO PALOS VERDES

LOS ANGELES COUNTY, CALIFORNIA

Tung-Chen Chung, Ph.D., INCE Bd. Cert.

LSA

October 2010

NOISE IMPACT ANALYSIS

RANCHO PALOS VERDES GENERAL PLAN UPDATE

CITY OF RANCHO PALOS VERDES

LOS ANGELES COUNTY, CALIFORNIA

Submitted to:

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LSA

October 2010

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INTRODUCTION

This Noise Impact Analysis has been prepared to evaluate the potential noise impacts associated with future development through build-out throughout the entire City in the Land Use Element of the updated General Plan of the City of Rancho Palos Verdes (City) in Los Angeles County, California.

PROJECT DESCRIPTION

The City is bounded by the Pacific Ocean to the west and south and is adjacent to the almost built-out jurisdictions of Palos Verdes Estates to the northwest, Rolling Hills Estates to the north, and Rolling Hills to the east. Figure 1 illustrates the City and its sphere of influence. The City is almost built out, and substantial areas of the City cannot be built on due to topographic constraints that restrict development. The City does not have any immediate access to a freeway, the closest freeway being Interstate 110 (I-110), which is located to the east of the City.

Based on the Land Use Element, although some vacant parcels within the City are undevelopable due to the severe terrain or other constraints, it is anticipated that development of the remaining 439 vacant developable parcels in the City would occur before the General Plan build-out is complete in 2035. In the traffic study for the General Plan Update (Willdan Engineering, July 19, 2010), these developable parcels were grouped into 28 traffic impact analysis zones so that the daily vehicle trips generated by these vacant parcels could be assessed in the General Plan Update traffic impact analysis. This Noise Impact Analysis includes the expected future development of the vacant lots within these 28 traffic impact analysis zones.

METHODOLOGY RELATED TO NOISE IMPACT ASSESSMENT

Evaluation of noise impacts associated with the proposed General Plan Update project includes the following:

- Discuss potential noise impacts associated with short-term construction and long-term operation of the developments on noise-sensitive uses adjacent to the 28 traffic impact analysis zones where these future development projects would occur.
- Determine the potential long-term traffic noise impacts due to future potential citywide development on the 28 traffic impact analysis zones.
- Evaluate potential mitigation measures for short-term and long-term noise impacts.

Because the City has not adopted any quantified noise criteria for environmental review under the California Environmental Quality Act (CEQA), this Noise Impact Analysis utilizes the noise and land use compatibility guidelines adopted in 1976 by the California Department of Health, Office of Noise Control, as thresholds against which potential noise impacts are evaluated.

CHARACTERISTICS OF SOUND

Sound is increasing in the environment and can affect quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

Figure 1: Regional and Project Location

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations (cycles per second) of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) are 10 times more intense than 1 decibel, 20 decibels are 100 times more intense, and 30 decibels are 1,000 times more intense. Thirty decibels represent 1,000 times as much acoustic energy as one decibel. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 decibels. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10-decibel increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately six decibels for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases three decibels for each doubling of distance in a hard site environment. Line source, noise in a relatively flat environment with absorptive vegetation, decreases four and one-half decibels for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Another noise scale often used together with the L_{max} in noise ordinances for enforcement purposes is noise standards in terms of percentile noise levels. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

PHYSIOLOGICAL EFFECTS OF NOISE

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness and/or loss of equilibrium.

The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas.

Table A lists “Definitions of Acoustical Terms,” and Table B shows “Common Sound Levels and Their Noise Sources.” Table C shows “Land Use Compatibility for Exterior Community Noise,” recommended by the California Department of Health, Office of Noise Control.

Table A: Definitions of Acoustical Terms

Term	Definition
Decibel, dB	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted, unless reported otherwise.)
L_{02}, L_{08}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurement and Noise Control 1991.

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposer	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	Reference Level
Average Office	60	Quiet	½ times as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ times as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	⅛ times as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing
	0	Very Faint	

Source: Compiled by LSA Associates, Inc., 2004.

Table C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (L_{dn} or CNEL), dB			
	I	II	III	IV
Passively used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential: low density single-family, duplex, mobile homes	50–55	55–70	70–75	75+
Residential: multifamily	50–60	60–70	70–75	75+
Transient lodging: motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces: playgrounds, neighborhood parks	50–67	—	67–73	73+

Table C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (L_{dn} or CNEL), dB			
	I	II	III	IV
Golf courses, riding stables, water recreation, cemeteries	50–70	—	70–80	80+
Office buildings, commercial business and professional	50–67	67–75	75+	—
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	—

Source: Office of Noise Control, California Department of Health, 1976.

Noise Range I─Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II─Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Noise Range III─Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV─Clearly Unacceptable: New construction or development should generally not be undertaken.

SETTING

Existing Sensitive Land Uses in the Project Area

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to noise. In general, the City's residential communities are spread throughout the entire City. These sensitive land uses, along with schools, hospitals, nursing homes, and churches, may be potentially affected by the noise associated with construction and operations of the potential future development sites on the 28 traffic impact analysis zones throughout the City.

Overview of the Existing Noise Environment

The primary existing noise sources in the City are transportation facilities. Traffic on major arterials such as Palos Verdes Drive, Hawthorne Boulevard, Crenshaw Boulevard, Crest Road, Crestridge Road, Western Avenue, Silver Spur Road, Highridge Road, Indian Peak Road, and Miraleste Drive is the source of ambient noise in the City.

The City has no railroad lines either in or abutting the City. Long Beach Municipal Airport is approximately 8 miles to the northeast and the runway orientation is from northwest to southeast. Aircraft operations at this airport would not affect the City. Torrance Municipal Airport is approximately 1.5 miles to the north and the runway orientation is also from the northwest to the southeast. Although there may be occasional flyovers by general aviation aircraft, there are no scheduled commercial flights flying directly over the City as part of the approach or departure routes. The City is well outside of the 60 dBA CNEL contours from both airports. As can be seen in the ambient noise survey discussed later, the majority of the monitoring locations did not register any distinguishable aircraft flyover noise. A detailed aircraft noise investigation is not warranted for the proposed project. Therefore, discussion of noise associated with trains and airplanes within the City is limited to qualitative analysis only. The impact of buses and trucks is reflected in the traffic noise discussion below.

Existing Traffic Noise. Exterior land uses along the major arterials within the City limits would be potentially exposed to high noise levels if outdoor active use areas such as backyards and/or patios/ balconies are directly adjacent to these roadways.

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 the 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 CNEL values. Table D provides the existing (2010) traffic noise levels adjacent to 29 segments of the roads with average daily traffic (ADT) volumes provided in the traffic study prepared for this General Plan Update (Willdan Engineering, July 19, 2010). These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A.

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 to beyond the roadway right-of-way. Previously referenced Table D shows that the existing traffic noise along the major arterials within the City range from moderate (Highridge Road, Indian Peak Road, Miraleste Drive, Palos Verdes Drive, Silver Spur Road, Crest Road, Crestridge Road, Western Avenue, and a portion of Crenshaw Boulevard and Hawthorne Boulevard) to high (Hawthorne Boulevard and majority of Crenshaw Boulevard).

Ambient Noise Monitoring Results. LSA conducted ambient noise monitoring within the City from October 20 through 23, 2009, and on August 18, 2010. Table E lists the noise measurement location and noise sources observed during the noise measurement periods. Table F shows that ambient noise within the City is moderate, with the L_{eq} ranging from 42.4 to 75.0 dBA. In general, vehicular traffic is the dominant noise source within the City, especially in areas adjacent to arterials and major collector streets. Other noise sources that contributed to the ambient noise included car alarms, engine startups, car doors shutting, reverse beeping, car brakes, honking, lawn mowers, weed whackers, dust blowers, people, music, shopping carts, dogs barking, construction activity, birds/crows chirping, whistle blowing, school bell ringing, airplane and helicopter overflight, ambulance siren, children playing at playground, air conditioning units, chain-link fence clanking, and trees rustling in the wind. Figure 2 depicts the noise monitoring locations.

Table D: Existing (2010) Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (Feet)	Centerline to 65 CNEL (Feet)	Centerline to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Crenshaw Boulevard from North City Limit to Indian Peak Road	23,500	65	133	283	69.1
Crenshaw Boulevard from Indian Peak Road to Crest Road	15,500	< 50	102	215	67.3
Crest Road from Hawthorne Boulevard to Crenshaw Boulevard	13,200	< 50	77	160	65.3
Crest Road from Palos Verdes Drive East to Ganado Drive	3,000	< 50	< 50	59	60.4
Crestridge Road from Highridge Road to Crenshaw Boulevard	9,200	< 50	59	125	64.7
Hawthorne Boulevard from North City Limit to Blackhorse Road	28,000	72	149	318	69.9
Hawthorne Boulevard from Blackhorse Road to Indian Peak Road	26,100	70	143	304	69.5
Hawthorne Boulevard from Indian Peak Road to Grayslake Road/Highridge Road	41,400	92	193	413	71.6
Hawthorne Boulevard from Grayslake Road/Highridge Road to Granvia Altamira/Ridgegate Drive	28,700	74	152	324	70.0
Hawthorne Boulevard from Granvia Altamira/Ridgegate Drive to Eddinghill Drive/Seamount Drive	21,900	63	127	271	68.8
Hawthorne Boulevard from Eddinghill Drive/Seamount Drive to Crest Road	17,400	< 50	110	232	67.8
Hawthorne Boulevard from Crest Road to Vallon Drive	19,200	58	117	248	68.2
Hawthorne Boulevard from Vallon Drive to Palos Verdes Drive West	16,900	< 50	108	228	67.7
Highridge Road from Hawthorne Boulevard to City Limit with Rolling Hills Estates	8,800	< 50	< 50	98	63.1
Indian Peak Road from Crenshaw Boulevard to City Limit with Rolling Hills Estates	9,100	< 50	< 50	100	63.2
Miraleste Drive from Palos Verdes Drive East to 1st Street	16,100	< 50	69	146	65.7
Miraleste Drive from 1st St. to East City Limit at 9th Street	6,100	< 50	< 50	76	62.0
Palos Verdes Drive East from North City Limit to Miraleste Drive	14,600	< 50	79	170	67.3
Palos Verdes Drive East from Miraleste Drive to north of Crest Drive	10,500	< 50	63	136	65.8
Palos Verdes Drive East from north of Crest Drive to Ganado Drive	7,900	< 50	< 50	92	62.1
Palos Verdes Drive East from Ganado Drive to Palos Verdes Drive South	5,100	< 50	< 50	68	61.3

Table D: Existing (2010) Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (Feet)	Centerline to 65 CNEL (Feet)	Centerline to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Palos Verdes Drive South from Palos Verdes Drive West and Crestmont Lane/Terranea Way	13,300	< 50	93	195	66.6
Palos Verdes Drive South from Crestmont Lane/Terranea Way to Forrestal Drive/Ocean Trails Drive	13,200	< 50	92	194	66.6
Palos Verdes Drive South from Forrestal Drive/Ocean Trails Drive to Palos Verdes Drive East	16,600	< 50	107	225	67.6
Palos Verdes Drive South from Palos Verdes Drive East to East City Limit	15,200	< 50	98	212	68.7
Palos Verdes Drive West from North City Limit to Hawthorne Boulevard	14,000	< 50	96	201	66.8
Palos Verdes Drive West from Hawthorne Boulevard to Palos Verdes Drive South	16,000	< 50	104	220	67.4
Silver Spur Road from North City Limit to North of Hawthorne Boulevard	9,200	< 50	71	152	65.9
Western Avenue from North City Limit to South City Limit	21,900	< 50	86	180	66.1

Source: LSA Associates, Inc., August 2010.
Note: ADT values rounded up to the nearest 100. Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel

Table E: Noise Measurement Location and Noise Sources

Site	Location Description	Noise Sources
M-1	Southeast corner of Palos Verdes Drive West and Hawthorne Boulevard	Traffic on Palos Verdes Drive and Hawthorne Boulevard; traffic in parking lot of 7-Eleven store; lawnmower/weed whacker/dust blower; cars at gas station; and buses at nearby bus stop
M-2	Northeast corner of Hawthorne Boulevard and Granvia Altamira/Ridgegate Drive	Traffic on Hawthorne Boulevard and Granvia Altamira/Ridgegate Drive; car brakes squeaking at intersection; engine starting and car doors shutting; reverse beeping; people talking at the 7-Eleven parking lot; workers spray-painting wall and listening to loud music

Table E: Noise Measurement Location and Noise Sources

Site	Location Description	Noise Sources
M-3	Northeast corner of Hawthorne Boulevard and Seamount Drive/Eddinghill Drive	Traffic on Hawthorne Boulevard and Seamount Drive/Eddinghill Drive; dog barking; construction hammering; car brakes squeaking when stopping; driver asking question; music from car radio; weed whacker to the west
M-4	Southwest corner of Hawthorne Boulevard and Crest Road, near Ralph's Supermarket	Traffic on Hawthorne Boulevard and Crest Road; shopping carts clanking from Ralph's Supermarket to the north; engine starting; car door shutting; car alarm; car brakes squeaking at intersection; people chattering
M-5	Southwest corner of Hawthorne Boulevard and Alta Vista Drive	Traffic on Hawthorne Boulevard and Alta Vista Drive; birds chirping; construction or landscaping activity in the distance; cars braking and screeching
M-6	Southeast corner of Hawthorne Boulevard and Vallon Drive	Birds chirping; traffic on Hawthorne Boulevard and Vallon Drive; truck honking; bikers riding by; conversation by pedestrians passing by; cars braking and squeaking at intersection
M-7	Northeast corner of Hawthorne Boulevard and Grayslake Road/Highridge Road	Traffic on Hawthorne Boulevard and Grayslake Road/ Highridge Road; carwash across street at Chevron Station; car brakes squeaking; car honking; people talking in car while stopping at intersection; construction activity in the distance
M-8	Southeast corner of Crest Road and Highridge Road	Traffic on Crest Road and Highridge Road; conversation by pedestrians walking by; truck dumping trash cans and beeping in distance; car radio from car stopped in front of sound level meter
M-9	Northwest corner of Silver Spur Road and Basswood Avenue	Traffic on Silver Spur Road and Basswood Avenue; students walking by and talking/ yelling; car alarms; car doors shutting; car brakes squeaking; honking; crow chirping; car playing music passing by; engine revving; whistle blowing at high school to the east
M-10	Southeast corner of Hawthorne Boulevard and Blackhorse Road	Traffic on Hawthorne Boulevard and Blackhorse Road; kids passing by; car doors shutting when kids are dropped off along Hawthorne Boulevard; bus brakes squeaking; kids talking while passing by
M-11	Southwest corner of Crenshaw Boulevard and Crestridge Road; Palos Verdes Art Center parking lot at 5504 Crenshaw Boulevard	Traffic on Crenshaw Boulevard and Crestridge Road; cars stopping at intersection with brakes squeaking; cars pulling into Art Center parking lot
M-12	Southwest corner of Palos Verdes Drive East and Crest Road, in parking lot of Marymount College	Traffic on Palos Verdes Drive and Crest Road; cars in and out of the parking lot; car doors shutting; car alarms; dog barking; car engine starting; car brakes squeaking; birds chirping; students talking while passing by; loud music; airplane overflight; weed whacker in the distance

Table E: Noise Measurement Location and Noise Sources

Site	Location Description	Noise Sources
M-13	Northwest corner of Western Avenue and Toscanini Drive, near 1803 Toscanini Drive	Traffic on Western Avenue and Toscanini Drive; car brakes squeaking; bikers passing by
M-14	Northwest corner of Hawthorne Boulevard and Locklenna Lane at Fred Hesse Community Park; 29301 Hawthorne Boulevard	Traffic on Hawthorne Boulevard and Locklenna Lane; people playing sports in park to the west; cars pulling in and out of park entrance; car alarm in Community Park parking lot
M-15	Northeast corner of Montemalaga Drive and Grayslake Road	Traffic on Montemalaga Drive and Grayslake Road; car passing playing loud music; birds chirping; airplane overflight; crow cawing
M-16	Southeast corner of Hawthorne Boulevard and Silver Spur Road	Traffic on Hawthorne Boulevard and Silver Spur Road; Arco station carwash; engine starting; doors shutting; car alarm; and cars pulling in and out of the gas station; car brakes squeaking; ambulance passing by on Hawthorne Boulevard with siren on; bus stopping at bus stop; honking
M-17	Southeast corner of Palos Verdes Drive East and Palos Verdes Drive South	Traffic on Palos Verdes Drive East and Palos Verdes Drive South; crow cawing; car tires peeling out on turn; brakes squeaking
M-18	Northeast corner of Palos Verdes Drive East and Rockinghorse Road, at 9 Rockinghorse Road residence	Traffic on Palos Verdes Drive East and Rockinghorse Road; residents talking while rolling trash can up driveway to street; car door shutting; engine starting; car pulling out of driveway; birds chirping; dogs barking
M-19	West end of Crest before turning into private property (Rancho Palos Verdes Estates), near 3867 Crest Road	Traffic on Crest Road coming in and out of private gated residential community; biker passing by; birds chirping; leaves falling from trees; aircraft overflight
M-20	Southwest corner on Crestwood Street and Western Avenue, at 29505 Western Avenue	Traffic on Crestwood Street and Western Avenue; people talking close by; truck beeping backing up; cars starting; cars pulling in and out of nearby lots; car brakes squeaking; horn honking; helicopter overflight
M-21	Southwest corner of Western Avenue and Peninsula Verde Drive, northeast corner of cemetery, 5 feet from Western Avenue near 1802 Peninsula Verdes Drive	Traffic passing on Western Avenue; cars pulling in and out of Peninsula Verdes Drive; helicopter overflight
A-1	Northwest corner of Crenshaw Boulevard and Crestridge Road, across from Palos Verdes Art Center	Traffic on Crenshaw Boulevard and Crestridge Road; cars pulling in and out of the Art Center
A-2	Belmont Village Assisted Living Facility entrance; 5701 Crestridge Road	Traffic on Crestridge Road; employee parking gate opening; cars entering and leaving the facility; landscaping activity; helicopter overflight
A-3	North side of Indian Peak Road	Traffic on Indian Peak Road; brakes squeaking; birds chirping; air conditioning units humming from nearby building; bikers passing by

Table E: Noise Measurement Location and Noise Sources

Site	Location Description	Noise Sources
B-1	Golden Cove Shopping Center, 31100 Hawthorne Boulevard	Traffic on Hawthorne Boulevard; cars and motorcycles entering parking lot; construction activity to the west; conversation by construction workers and pedestrians passing by; children playing at nearby Peninsula Montessori School
B-2	Villa Capri Condos, 50 feet from Hawthorne Boulevard	Traffic on Hawthorne Boulevard; car doors shutting; engine startup; conversation by pedestrians passing by on sidewalk
B-3	Villa Capri Condos, at cul-de-sac behind a large building at Golden Cove Shopping Center	Truck loading/unloading at Golden Cove Shopping Center; dog barking; crows cawing; store employees conversing; air conditioning units associated with commercial uses; cars passing by behind store building
C-1	Southeast corner of parking lot at St. John Fisher Church, 5448 Crest Road	Children yelling and screaming at church school playground to the west; car alarms; engine staring; car doors shutting at church parking lot; conversation by people nearby; school bell ringing; helicopter and aircraft overflight; crow chirping; construction or landscaping activity in the distance
C-2	Northwest corner of St. John Fisher Church/Fisher School parking lot	Traffic on Crenshaw Boulevard and Crest Road; children yelling and playing close by in parking lot near playground; cars stopping at intersection; barking and screeching; school instructor's whistle blowing; school bell ringing
C-3	Northwest corner of Crenshaw Boulevard and Crest Road; east of Villa Verde Condos	Traffic on Crenshaw Boulevard and Crest Road; car brakes squeaking at intersection; small airplane overflight
D-1	Northeast corner of Rolling Hills Seventh-Day Adventist Church parking lot; 28340 Highridge Road	Traffic on Highridge Road and Hawthorne Boulevard; birds chirping; reverse beeping from truck in the distance; car alarms; trees rustling from wind; airplane overflight; people talking in residential area to the east
D-2	West of Rolling Hills Seventh-Day Adventist Church parking lot entrance at 28340 Highridge Road	Traffic on Highridge Road; birds/crows chirping; landscaping activity to the west; trash can lids slamming; workers yelling; dog barking in distance; chain-link fence clanking; airplane overflight
D-3	Southwest corner of Hawthorne Boulevard and Indian Peak Road; inside auto service station parking lot at 27505 Hawthorne Boulevard	Traffic on Hawthorne Boulevard and Indian Peak Road; cars honking; car brakes squeaking; auto shop service noise; engine starting in auto garage

Source: LSA Associates, Inc., October 2009.

Table F: Short-Term Ambient Noise Monitoring Results

Site	Date	Start Time	Duration (minutes)	L_{eq}	L_{max}	L_{min}	L_2	L_8	L_{25}	L_{50}
M-1	10/20/09	10:15 a.m.	20	68.8	88.3	51.2	75.8	70.0	66.5	63.7
M-2	10/22/09	10:23 a.m.	20	68.7	79.5	59.1	75.1	72.7	69.5	66.1
M-3	10/22/09	9:45 a.m.	20	69.3	83.0	50.1	76.6	73.7	70.4	66.1
M-4	10/21/09	10:36 a.m.	20	61.6	73.5	49.5	68.8	65.6	62.0	59.3
M-5	10/21/09	9:58 a.m.	20	69.7	84.9	44.3	76.9	74.0	70.5	66.4
M-6	10/21/09	9:21 a.m.	20	70.0	88.4	42.0	76.9	73.8	70.3	65.4
M-7	10/22/09	11:21 a.m.	20	70.4	83.0	54.6	76.5	74.1	71.5	68.4
M-8	10/21/09	11:19 a.m.	20	62.6	82.2	41.8	70.6	67.3	62.3	56.9
M-9	10/22/09	3:06 p.m.	20	61.5	80.3	48.0	67.9	65.5	62.1	57.6
M-10	10/22/09	4:13 p.m.	20	68.5	85.1	45.8	74.5	72.2	69.6	65.5
M-11	10/21/09	2:28 p.m.	20	63.5	74.6	49.2	70.1	67.8	64.6	60.8
M-12	10/23/09	1:14 p.m.	20	57.7	71.2	38.7	67.1	62.4	57.0	52.1
M-13	10/23/09	12:16 p.m.	20	73.4	85.6	57.2	79.7	77.2	74.5	71.5
M-14	10/21/09	4:27 p.m.	20	64.6	72.9	40.5	70.8	69.0	66.4	62.9
M-15	10/22/09	3:42 p.m.	20	60.8	83.0	37.1	69.1	63.1	59.1	55.1
M-16	10/22/09	2:20 p.m.	20	73.7	93.0	55.9	81.1	73.2	68.6	64.9
M-17	10/23/09	1:45 p.m.	20	66.5	84.9	38.5	74.1	70.6	65.7	62.4
M-18	10/22/09	5:30 p.m.	20	60.6	78.1	42.0	66.6	63.9	61.5	58.6
M-19	8/18/10	1:05 p.m.	20	42.4	55.8	36.0	49.5	45.9	42.0	39.5
M-20	8/18/10	2:03 p.m.	20	64.6	81.8	50.9	72.4	68.2	64.0	60.8
M-21	8/18/10	2:43 p.m.	20	75.0	87.1	55.9	80.9	78.7	76.3	73.5
A-1	10/21/09	2:58 p.m.	20	65.9	79.1	53.8	71.4	69.4	66.9	64.3
A-2	10/21/09	3:33 p.m.	20	62.1	74.6	42.8	69.1	67.3	63.4	57.6
A-3	10/23/09	2:44 p.m.	20	66.6	76.3	49.9	72.6	71.1	68.9	63.9
B-1	10/20/29	11:35 a.m.	20	69.4	82.1	41.9	76.8	73.7	70.4	66.3

Table F: Short-Term Ambient Noise Monitoring Results

Site	Date	Start Time	Duration (minutes)	L_{eq}	L_{max}	L_{min}	L_2	L_8	L_{25}	L_{50}
B-2	10/20/09	12:18 p.m.	20	56.0	71.3	38.7	61.5	59.4	56.9	54.5
B-3	10/20/09	1:57 p.m.	20	49.6	58.8	41.9	55.5	52.4	50.8	50.0
C-1	10/21/09	12:31 p.m.	20	57.9	82.6	35.6	56.9	52.3	44.5	41.4
C-2	10/21/09	1:13 p.m.	20	58.5	70.9	48.1	65.8	61.5	58.5	56.4
C-3	10/21/09	1:52 p.m.	20	58.0	70.1	41.2	64.4	61.3	59.0	56.8
D-1	10/22/09	12:29 p.m.	20	45.4	57.4	42.0	50.1	47.6	45.4	44.4
D-2	10/22/09	12:55 p.m.	20	54.8	71.3	35.8	62.2	59.1	55.4	50.1
D-3	10/22/09	1:35 pm	20	68.9	79.3	57.2	75.0	72.9	70.2	67.2

Source: LSA Associates, Inc., October 2009.

L_2 = the noise level exceeded two percent of the time
L_8 = the noise level exceeded eight percent of the time
L_{25} = the noise level exceeded a quarter of the time
L_{50} = median noise level
L_{eq} = equivalent continuous noise level
L_{max} = maximum noise level
L_{min} = minimum noise level

Figure 2: Ambient Noise Monitoring Locations

Thresholds of Significance

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located.

City of Rancho Palos Verdes Noise Standards. The City's current General Plan Noise Element discusses the noise environment, noise effects on people, and noise sources within the City. It also discusses potential solutions to excessive noise. The City's policies include the following:

1. Mitigate impacts generated by steady state noise intrusion (e.g., land strip buffers, landscaping, and site design).
2. Develop an ordinance to control noise.
3. Regulate land use so that there is a minimal degree of noise impact on adjacent land uses.
4. Contain through traffic to existing arterials and collectors so that local roads are not used as by-passes or shortcuts so as to minimize noise.
5. Require 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.
6. Control traffic flows of heavy construction vehicles en route to and from construction sites to minimize noise.
7. Maintain current and up-to-date information on noise control measures, on fixed point and vehicular noise sources.
8. Require strict noise attenuation measures to be taken in all multifamily residential units.
9. Coordinate with all public agencies, especially our adjoining neighbors, who might wish to enter into a joint effort to study and/or control noise emissions.
10. 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.
11. Encourage the State and Federal governments to actively control and reduce vehicle noise emissions.
12. 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.

The City's Municipal Code, Title 17, Chapter 12, Section 030 (17.12.030), Development Standards, stated that within the commercial districts, certain restrictions on noise associated with deliveries and mechanical equipment have been identified. It states that "Unless otherwise specified in an approved conditional use permit or other discretionary approval, all deliveries of commercial goods and supplies; trash pick-up, including the use of parking lot trash sweepers; and the operation of machinery or mechanical equipment which emits noise levels in excess of sixty-five dBA, as measured from the closest property line to the mechanical equipment, shall only be allowed on commercial properties which abut a residential district, between the hours of seven a.m. and seven p.m., Monday through Sunday."

In addition, The City's Municipal Code, Title 17, Chapter 56, Section 020 (17.56.020), Conduct of construction and landscaping activities, states that "It is unlawful to carry on construction, grading or landscaping activities or to operate heavy equipment except between the hours of seven a.m. and seven p.m. Monday through Saturday. No such activity shall be permitted on Sunday or legal holidays, unless a special construction permit is obtained from the director" of the Community Development Department.

Title 8, Chapter 04, Section 010 (8.04.010) of the City's Municipal Code states that "Except as hereinafter provided, Title 11, entitled 'Health and Safety,' of the Los Angeles County Code, as amended and in effect on September 1, 1998, is adopted by reference as the health code of the City of Rancho Palos Verdes and may be cited as such."

However, because the City has not adopted any quantitative noise level criteria for the CEQA review process, the noise standards recommended in the State's guidelines, as shown in previously referenced Table C, are used in this Noise Impact Analysis. Typically, residential uses in areas exposed to traffic noise levels exceeding 65 dBA CNEL is not considered acceptable. Mitigation measures would need to be incorporated to ensure that the State's 45 dBA CNEL interior noise standard for residential uses is achieved.

PROJECT IMPACTS

Construction Noise

Short-term noise impacts would be associated with excavation, grading, and erecting of buildings during construction of any future development on the 28 traffic impact analysis zones within the City identified in the Traffic Impact Analysis (Wildan Engineering, July 19, 2010). Construction-related short-term noise levels would be higher than existing ambient noise levels in the vicinity of these 28 traffic impact analysis zones today but would no longer occur once construction of the individual project on any of the 28 traffic impact analysis zones is completed.

Two types of short-term noise impacts could occur during the construction of any individual project on these 28 traffic impact analysis zones. First, construction crew commutes and the transport of construction equipment and materials to the individual vacant parcel site would incrementally increase noise levels on access roads leading to that individual vacant parcel site. There will be a relatively high single-event noise exposure potential at a maximum level of 87 dBA L_{max} with trucks passing at 50 feet (ft). However, the projected construction traffic will be small when compared to the existing traffic volumes on affected streets in the vicinity of these 28 traffic impact analysis zones, 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 on the individual vacant parcel site. 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 individual vacant parcel site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table G lists maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 ft between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA at 50 ft during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the individual vacant parcel site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

Table G: Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Level Measured at 50 feet (dBA)	Suggested Maximum Sound Level for Analysis at 50 feet (dBA)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoes	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek, & Newman, 1987.
dBA = A-weighted decibel L_{max} = maximum noise level

Construction of any future development on these 28 traffic impact analysis zones is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. This equipment would be used on the individual vacant parcel site. Based on Table G, the maximum noise level generated by each scraper on the individual vacant parcel site is assumed to be 87 dBA L_{max} at 50 ft from the scraper. Each bulldozer would also generate 85 dBA L_{max} at 50 ft. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 ft from these vehicles. Each doubling of a sound source with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level at each receptor location during this phase of construction would be 91 dBA L_{max} at a distance of 50 ft from the active construction area.

Although the City's Municipal Code does not specify an upper noise limits for construction activity, a temporary construction barrier with a minimum height of 6 ft is recommended along the project boundaries when this type of equipment is used adjacent to the areas with the closest existing residences. 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. In addition, compliance with the construction hours specified in the City's Municipal Code noise control ordinance would be required.

Traffic Noise Impact

Exterior land uses proposed on the vacant parcels along Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (Analysis Zone [AZ] 19), Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South (AZ 26), Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), and Silver Spur Road between north City limit and north of Hawthorne Boulevard (AZ 4) would be potentially exposed to high traffic noise levels from these roads.

The other remaining 15 traffic analysis zones are not adjacent to any major arterials or collector street segments with relatively high traffic volumes and therefore would not be exposed to high traffic noise levels reaching the 65 dBA CNEL exterior noise standard. The future traffic volumes for roadway segments analyzed in the General Plan Build Out with and without project scenarios are provided in the traffic study for the General Plan Update (Willdan Engineering, July 19, 2010).

The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions along arterials and major collector roads within the City and in the vicinity of the 13 traffic analysis zones with potential future developments along the major arterials identified above (AZs 4, 10, 11, 12, 15, 16, 19, 21, 23, 24, 26, 27, and 28).

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 CNEL values. Table H provides the General Plan Build Out traffic noise levels adjacent to the same roadway segments evaluated in the existing environment. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A.

Table H shows that, after General Plan build out, future traffic noise levels along the major arterials and collector roads within the City, as identified in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010) would add 0.7 to 2.3 dBA to corresponding existing traffic noise levels along arterials and major collector roads within the City. This range of traffic noise level changes is not considered significant and no significant growth-related traffic noise impacts would occur on existing uses throughout the City.

Table H: General Plan Build Out Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Crenshaw Boulevard from North City Limit to Indian Peak Road	31,300	77	161	343	70.3	1.2
Crenshaw Boulevard from Indian Peak Road to Crest Road	23,600	66	134	284	69.1	1.8
Crest Road from Hawthorne Boulevard to Crenshaw Boulevard	19,500	< 50	98	207	67.0	1.7
Crest Road from Palos Verdes Drive East to Ganado Drive	3,500	< 50	< 50	66	61.1	0.7
Crestridge Road from Highridge Road to Crenshaw Boulevard	11,800	< 50	69	147	65.8	1.1
Hawthorne Boulevard from North City Limit to Blackhorse Road	36,900	86	179	382	71.1	1.2
Hawthorne Boulevard from Blackhorse Road to Indian Peak Road	34,800	83	172	368	70.8	1.3
Hawthorne Boulevard from Indian Peak Road to Grayslake Road/Highridge Road	53,000	107	227	486	72.6	1.0
Hawthorne Boulevard from Grayslake Road/Highridge Road to Granvia Altamira/Ridgegate Drive	37,500	87	181	386	71.1	1.1
Hawthorne Boulevard from Granvia Altamira/Ridgegate Drive to Eddinghill Drive/Seamount Drive	29,300	74	154	328	70.0	1.2
Hawthorne Boulevard from Eddinghill Drive/Seamount Drive to Crest Road	23,700	66	134	285	69.1	1.3
Hawthorne Boulevard from Crest Road to Vallon Drive	29,300	74	154	328	70.0	1.8

Table H: General Plan Build Out Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Hawthorne Boulevard from Vallon Drive to Palos Verdes Drive West	26,600	70	144	308	69.6	1.9
Highridge Road from Hawthorne Boulevard to City Limit with Rolling Hills Estates	10,600	< 50	52	111	63.9	0.8
Indian Peak Road from Crenshaw Boulevard to City Limit with Rolling Hills Estates	12,700	< 50	59	125	64.7	1.5
Miraleste Drive from Palos Verdes Drive East to 1st Street	19,100	< 50	77	163	66.4	0.7
Miraleste Drive from 1st Street to East City Limit at 9th Street	7,500	< 50	< 50	88	62.9	0.9
Palos Verdes Drive East from North City Limit to Miraleste Drive	19,100	< 50	94	203	68.4	1.1
Palos Verdes Drive East from Miraleste Drive to North of Crest Drive	14,500	< 50	79	169	67.2	1.4
Palos Verdes Drive East from North of Crest Drive to Ganado Drive	11,400	< 50	57	117	63.7	1.6
Palos Verdes Drive East from Ganado Drive to Palos Verdes Drive South	7,100	< 50	< 50	85	62.7	1.4
Palos Verdes Drive South from Palos Verdes Drive West and Crestmont Lane/Terranea Way	22,700	64	130	277	68.9	2.3
Palos Verdes Drive South from Crestmont Lane/Terranea Way to Forrestal Drive/Ocean Trails Drive	21,700	63	127	269	68.7	2.1

Table H: General Plan Build Out Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Palos Verdes Drive South from Forrestal Drive/Ocean Trails Drive to Palos Verdes Drive East	25,100	68	139	296	69.4	1.8
Palos Verdes Drive South from Palos Verdes Drive East to East City Limit	23,100	61	130	280	70.5	1.8
Palos Verdes Drive West from North City Limit to Hawthorne Boulevard	18,900	58	116	245	68.1	1.3
Palos Verdes Drive West from Hawthorne Boulevard to Palos Verdes Drive South	25,900	69	142	302	69.5	2.1
Silver Spur Road from North City Limit to north of Hawthorne Boulevard	11,200	< 50	81	173	66.8	0.9
Western Avenue from North City Limit to South City Limit	30,500	< 50	106	224	67.5	1.4

Source: LSA Associates, Inc., August 2010.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Based on the Land Use Element and the traffic study for the General Plan Update (Willdan Engineering, July 19, 2010), it is anticipated that development would occur on the 28 traffic impact analysis zones identified in the Traffic Impact Analysis before the General Plan Build Out. One of the City's 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. Previously referenced Table H shows that the 65 dBA CNEL noise contour along arterials and major collector roads in the vicinity of the 13 vacant analysis zones identified previously (AZs 4, 10, 11, 12, 15, 16, 19, 21, 23, 24, 26, 27, and 28) would potentially affect the outdoor active use areas such as backyards, patios, or balconies along these roads. All 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. The remaining 15 traffic analysis zones of the 28 traffic impact zones are not adjacent to any arterials or collector streets with relative high traffic volumes and will not be experience potential high traffic noise levels and are therefore not evaluated for traffic noise impacts as discussed earlier.

As shown in Table H, the following roadway segments adjacent to the 13 vacant developable parcels/analysis zones (AZs 4, 10, 11, 12, 15, 16, 19, 21, 23, 24, 26, 27, and 28) would have the 65 dBA CNEL noise contour extending beyond the roadway right-of-way. Therefore, outdoor active use areas, such as backyards, patios, or balconies proposed on these vacant parcels that are within the following distances from the roadway centerline 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:

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (AZ 19), 98 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), 154 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), 94 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), 79 ft;
- Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South (AZ 26), 39 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), 116 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), 142 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 81 ft.

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. For example, if the road is higher than the residential property, sound barrier built along the right-of-way or edge of shoulder is more effective than sound barrier built along the property line.

Interior Noise Levels. Based on the data provided in the EPA's Protective Noise Levels (EPA 550/9-79-100, November 1979), standard homes in Southern California provide at least 12 dBA of exterior to interior noise attenuation with windows open and 24 dBA with windows closed. Therefore, homes exposed to exterior traffic noise levels lower than 69 dBA CNEL (45 + 24 = 69 dBA) would not have their interior noise level exceeding the 45 dBA CNEL standard with windows closed. With windows open, homes exposed to exterior traffic noise levels exceeding 57 dBA CNEL (45 + 12 = 57 dBA) would exceed the 45 dBA CNEL interior noise standard. Residential homes proposed within the following distance from the roadway centerline that have no natural or manmade barriers providing shielding effect would be potentially exposed to traffic noise levels exceeding 69 dBA CNEL and would require mitigation measures such as building façade upgrades (double-paned windows, solid-core wood doors, etc):

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (AZ 19), 53 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), 83 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), 51 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), 43 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), 63 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), 77 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 44 ft.

In addition, mechanical ventilation, such as an air-conditioning system, would be required for dwelling units proposed within the following distances from the roadway centerline on the vacant parcels and without shielding from natural or manmade barriers to ensure that windows can remain closed for prolonged periods of time.

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (AZ 19), 328 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), 520 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), 322 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), 268 ft;
- Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South (AZ 26), 135 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), 388 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), 479 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 274 ft.

Stationary Noise Impacts

The majority of the vacant developable parcels/analysis zones identified in the Land Use Element and evaluated in the Traffic Impact Analysis (Willdan Engineering, July 19, 2010) are not adjacent to any major stationary noise sources such as industrial or commercial uses. Therefore, no mitigation measures are required for stationary source noise impacts. However, should there be any residential uses proposed on these vacant parcels that are near commercial uses with potential loading/unloading activity noise, such noise impacts would need to be mitigated. As stated in the City's Municipal Code, Title 17, Chapter 12, Section 030, unless otherwise specified in an approved conditional use permit or other discretionary approval, all deliveries of commercial goods and supplies; trash pick-up, including the use of parking lot trash sweepers; and the operation of machinery or mechanical equipment that emits noise levels in excess of 65 dBA, as measured from the closest property line to the mechanical equipment, shall only be allowed on commercial properties that abut a residential district between the hours of 7:00 a.m. and 7:00 p.m., Monday through Sunday. Any residual noise impacts from off-site stationary noise sources can be mitigated with stand-alone noise barriers with sufficient height to block the line-of-sight between the stationary sources of concern and the receptor locations.

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. This is true of aircraft taking off or landing at Los Angeles International Airport, and Long Beach and Torrance airfields. Therefore, other than occasional aircraft overflight that may result in temporary annoyance, no significant aircraft or train noise impacts would occur. No mitigation measures are required.

MITIGATION MEASURES

Construction Impacts

Construction will be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday in accordance with the City's Municipal Code requirements. No construction activities are permitted outside of these hours or on Sundays and legal holidays unless a special construction permit is obtained from the director of the Community Development Department.

The following measures can be implemented to reduce potential construction noise impacts on sensitive receptors adjacent to the individual project development area:

1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

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 require a sound wall with a minimum wall height of 5 ft to reduce the exterior noise level to 65 dBA CNEL or lower for residential or other noise-sensitive land uses:

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (AZ 19), 98 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), 154 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), 94 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), 79 ft;
- Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South (AZ 26), 39 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), 116 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), 142 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 81 ft.

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 will require mechanical ventilation to ensure that windows can remain closed for a prolonged period of time.

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (AZ 19), 328 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), 520 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), 322 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), 268 ft;
- Palos Verdes Drive between Ganado Drive and Palos Verdes Drive South (AZ 26), 135 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), 388 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), 479 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 274 ft.

In addition, residential homes proposed within the following distances from the roadway centerline that have no natural or manmade barriers providing shielding effect would require mitigation measures such as building façade upgrades (double-paned windows, solid-core wood doors, etc):

- Crest Road between Hawthorne Boulevard and Crenshaw Boulevard (AZ 19), 53 ft;
- Hawthorne Boulevard between Crest Road and Vallon Drive (AZ 15 and AZ 16), 83 ft;
- Palos Verdes Drive East between north City limit and Miraleste Drive (AZ 23), 51 ft;
- Palos Verdes Drive East between Miraleste Drive and north of Crest Drive (AZ 24), 43 ft;
- Palos Verdes Drive West between north City limit and Hawthorne Boulevard (AZ 10, AZ 11, and AZ 12), 63 ft;
- Palos Verdes Drive West between Hawthorne Boulevard and Palos Verdes Drive South (AZ 21, AZ 27, and AZ 28), 77 ft; and
- Silver Spur Road between north City limit and north of Hawthorne Boulevard, 44 ft.

Stationary Sources Noise Impacts

Any residual noise impacts from off-site stationary noise sources can be mitigated with stand-alone noise barriers with sufficient height to block the line-of-sight between the stationary sources of concern and the receptor locations.

Aircraft and Train Noise Impacts

No mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the identified mitigation measures, potential short-term and long-term noise impacts would be reduced to below the level of significance.

REFERENCES

Bolt, Beranek & Newman, Noise Control for Buildings and Manufacturing Plants, 1987.

City of Rancho Palos Verdes, Municipal Code, Title 17, Chapter 12, Section 030 (17.12.030), Development Standards, Title 17, Chapter 56, Section 020 (17.56.020), Conduct of construction and landscaping activities, and Title 8, Chapter 04, Section 010 (8.04.010).

City of Rancho Palos Verdes, Noise Element of the General Plan.

Federal Highway Administration, Highway Traffic Noise Prediction Model, FHWA RD-77-108, 1977.

Willdan Engineering, Traffic Impact Analysis, City of Rancho Palos Verdes General Plan Circulation Element Update, July 19, 2010.

APPENDIX A

FHWA TRAFFIC NOISE MODEL PRINTOUTS

RANCHO PALOS VERDES GENERAL PLAN UPDATE

FHWA ROADWAY NOISE LEVEL ANALYSIS

CONTOUR6 MODEL PRINTOUTS

EXISTING BASELINE CONDITIONS

TABLE Existing-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crenshaw Boulevard Between Sea Crest Drive and Crest Road
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1900 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.24

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	64.2	136.5

TABLE Existing-02

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Crenshaw Boulevard Between Crest Road and City Limit with Rolling Hills Estate
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14700   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.3	116.9	247.6	531.4

TABLE Existing-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crest Road Between Hawthorne Boulevard and Crenshaw Boulevard
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 8900   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	85.3	178.1	380.8

TABLE Existing-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crest Road Between Palos Verdes Drive East and Ganado Drive
NOTES: Rancho Palos Verdes - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3100   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.44

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	90.6	189.7

TABLE Existing-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Crest Road Between Ganado Drive and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 600   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.4

TABLE Existing-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Palos Verdes Drive West and Vallon Drive
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15400   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.8	120.4	255.4	548.1

TABLE Existing-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Hawthorne Boulevard Between Vallon Drive and Crest Road
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15400   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.8	120.4	255.4	548.1

TABLE Existing-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Crest Road and Eddinghill Drive/Seamount Drive
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19900   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
69.3	142.1	302.6	650.1

TABLE Existing-09

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Eddinghill Dr./Seamount Dr. and Highridge Rd.
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19900   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
69.3	142.1	302.6	650.1

TABLE Existing-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Highridge Road/Grayslake Road and Indian Peak Road
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18300   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
66.0	134.6	286.2	614.8

TABLE Existing-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Silver Spur Road and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18300   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
66.0	134.6	286.2	614.8

TABLE Existing-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Highridge Road Between Hawthorne Blvd. and City Limit with Rolling Hills Estates

NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9100   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	70.1	150.5	323.9

TABLE Existing-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Indian Peak Road Between Crenshaw Blvd. and City Limit with Rolling Hills Estate
s
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	73.2	150.9	321.8

TABLE Existing-14

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Miraleste Drive Between Palos Verdes Drive East and Via Colinita
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13300   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	90.1	193.7	417.1

TABLE Existing-15

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Miraleste Drive Between Via Colinita and City Limit with Los Angeles
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.43

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	69.5	149.4	321.5

TABLE Existing-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Palos Verdes Drive East North of Palos Verdes Drive South
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3000   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	86.4	184.7

TABLE Existing-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Palos Verdes Drive East Between Crest Road and Miraleste Drive

NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 7800   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	76.1	162.2	348.7

TABLE Existing-18
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive East Between Miraleste Drive and City Limit with Rolling Hill
s Estates
NOTES: Rancho Palos Verdes - Existing

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10700   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	93.5	200.1	430.4

TABLE Existing-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive East Between north of Palos Verdes Drive South and Crest Road

NOTES: Rancho Palos Verdes - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3000   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	86.4	184.7

TABLE Existing-20

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between west of Schooner Drive and City Limit with Los Angeles
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13000   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.2	227.7	490.0

TABLE Existing-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between east of Seacove Drive and west of Schooner Driv
e
NOTES: Rancho Palos Verdes - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12100   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	101.4	217.1	467.1

TABLE Existing-22
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between Hawthorne Boulevard and east of Seacove Drive
NOTES: Rancho Palos Verdes - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13100 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	108.7	229.5	492.3

TABLE Existing-23
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Silver Spur Road Between north of Elkmont Dr. and City Limit of Rolling Hills Estates
NOTES: Rancho Palos Verdes - Existing

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9100   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	70.1	150.5	323.9

RANCHO PALOS VERDES GENERAL PLAN UPDATE

FHWA ROADWAY NOISE LEVEL ANALYSIS

CONTOUR6 MODEL PRINTOUTS

GENERAL PLAN BUILDOUT WITHOUT PROJECT

TABLE General Plan Buildout w/o Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crenshaw Boulevard Between Sea Crest Drive and Crest Road
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2200   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	70.6	150.4

TABLE General Plan Buildout w/o Project-02

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Crenshaw Boulevard Between Crest Road and City Limit with Rolling Hills Estate
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17200   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.7	129.3	274.7	590.0

TABLE General Plan Buildout w/o Project-03

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crest Road Between Hawthorne Boulevard and Crenshaw Boulevard
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	94.5	198.4	425.0

TABLE General Plan Buildout w/o Project-04

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crest Road Between Palos Verdes Drive East and Ganado Drive
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3600   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	99.5	209.3

TABLE General Plan Buildout w/o Project-05

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Crest Road Between Ganado Drive and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 700   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.8

TABLE General Plan Buildout w/o Project-06

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT:

Hawthorne Boulevard Between Palos Verdes Drive West and Vallon Drive

NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18100   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.6	133.6	284.2	610.3

TABLE General Plan Buildout w/o Project-07

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Hawthorne Boulevard Between Vallon Drive and Crest Road
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18100   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
65.6	133.6	284.2	610.3

TABLE General Plan Buildout w/o Project-08

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Crest Road and Eddinghill Drive/Seamount Drive
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23300   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.1	157.4	335.9	722.1

TABLE General Plan Buildout w/o Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Eddinghill Dr./Seamount Dr. and Highridge Rd.
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23300   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.1	157.4	335.9	722.1

TABLE General Plan Buildout w/o Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Highridge Road/Grayslake Road and Indian Peak Road
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
72.5	149.4	318.5	684.5

TABLE General Plan Buildout w/o Project-11

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Silver Spur Road and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
72.5	149.4	318.5	684.5

TABLE General Plan Buildout w/o Project-12

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT:

Highridge Road Between Hawthorne Blvd. and City Limit with Rolling Hills Estates

NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10600   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	77.5	166.6	358.6

TABLE General Plan Buildout w/o Project-13

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Indian Peak Road Between Crenshaw Blvd. and City Limit with Rolling Hills Estate
s
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10500   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	80.3	166.8	356.4

TABLE General Plan Buildout w/o Project-14

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Miraleste Drive Between Palos Verdes Drive East and Via Colinita
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15600   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	100.2	215.4	463.9

TABLE General Plan Buildout w/o Project-15

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Miraleste Drive Between Via Colinita and City Limit with Los Angeles
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10600   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	77.5	166.6	358.6

TABLE General Plan Buildout w/o Project-16

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Palos Verdes Drive East North of Palos Verdes Drive South
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	95.6	204.6

TABLE General Plan Buildout w/o Project-17

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT: Palos Verdes Drive East Between Crest Road and Miraleste Drive

NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9200   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	84.7	181.0	389.2

TABLE General Plan Buildout w/o Project-18

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive East Between Miraleste Drive and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	103.5	221.9	477.3

TABLE General Plan Buildout w/o Project-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive East Between north of Palos Verdes Drive South and Crest Road

NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	95.6	204.6

TABLE General Plan Buildout w/o Project-20

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between west of Schooner Drive and City Limit with Los Angeles
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15300   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.9	118.3	253.7	546.0

TABLE General Plan Buildout w/o Project-21

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between east of Seacove Drive and west of Schooner Driv
e
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14200   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
53.3	112.6	241.4	519.5

TABLE General Plan Buildout w/o Project-22

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between Hawthorne Boulevard and east of Seacove Drive
NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15400   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.8	120.4	255.4	548.1

TABLE General Plan Buildout w/o Project-23

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT:

Silver Spur Road Between north of Elkmont Dr. and City Limit of Rolling Hills Estates

NOTES: Rancho Palos Verdes - General Plan Buildout w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	78.0	167.6	360.8

RANCHO PALOS VERDES GENERAL PLAN UPDATE

FHWA ROADWAY NOISE LEVEL ANALYSIS

CONTOUR6 MODEL PRINTOUTS

GENERAL PLAN BUILDOUT WITH PROJECT

TABLE General Plan Buildout with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crenshaw Boulevard Between Sea Crest Drive and Crest Road
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2400   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	74.7	159.3

TABLE General Plan Buildout with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Crenshaw Boulevard Between Crest Road and City Limit with Rolling Hills Estate
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17800   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
64.9	132.2	281.0	603.6

TABLE General Plan Buildout with Project-03

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Crest Road Between Hawthorne Boulevard and Crenshaw Boulevard
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10800   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	96.2	202.1	433.0

TABLE General Plan Buildout with Project-04

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT: Crest Road Between Palos Verdes Drive East and Ganado Drive

NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3600 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	99.5	209.3

TABLE General Plan Buildout with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Crest Road Between Ganado Drive and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 700   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.8

TABLE General Plan Buildout with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Palos Verdes Drive West and Vallon Drive
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
66.4	135.5	288.3	619.3

TABLE General Plan Buildout with Project-07

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Hawthorne Boulevard Between Vallon Drive and Crest Road
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18600   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
66.6	136.0	289.3	621.5

TABLE General Plan Buildout with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Crest Road and Eddinghill Drive/Seamount Drive
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23400   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.3	157.8	336.9	724.2

TABLE General Plan Buildout with Project-09

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT:

Hawthorne Boulevard Between Eddinghill Dr./Seamount Dr. and Highridge Rd.

NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23400   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.3	157.8	336.9	724.2

TABLE General Plan Buildout with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Highridge Road/Grayslake Road and Indian Peak Road
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21900   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
73.3	151.2	322.4	692.9

TABLE General Plan Buildout with Project-11

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Hawthorne Boulevard Between Silver Spur Road and City Limit with Rolling Hills Estates
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
73.5	151.6	323.4	695.0

TABLE General Plan Buildout with Project-12

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009

ROADWAY SEGMENT:

Highridge Road Between Hawthorne Blvd. and City Limit with Rolling Hills Estates

NOTES: Rancho Palos Verdes - General Plan Buildout with Project

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11100   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.34

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	79.9	171.8	369.8

TABLE General Plan Buildout with Project-13

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Indian Peak Road Between Crenshaw Blvd. and City Limit with Rolling Hills Estate
s
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10500   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	80.3	166.8	356.4

TABLE General Plan Buildout with Project-14

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Miraleste Drive Between Palos Verdes Drive East and Via Colinita
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15600   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	100.2	215.4	463.9

TABLE General Plan Buildout with Project-15
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Miraleste Drive Between Via Colinita and City Limit with Los Angeles
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10600   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	77.5	166.6	358.6

TABLE General Plan Buildout with Project-16
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Palos Verdes Drive East North of Palos Verdes Drive South
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	95.6	204.6

TABLE General Plan Buildout with Project-17
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT: Palos Verdes Drive East Between Crest Road and Miraleste Drive

NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9200   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	84.7	181.0	389.2

TABLE General Plan Buildout with Project-18

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive East Between Miraleste Drive and City Limit with Rolling Hill
s Estates
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12500   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	103.5	221.9	477.3

TABLE General Plan Buildout with Project-19
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive East Between north of Palos Verdes Drive South and Crest Road

NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3500 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	95.6	204.6

TABLE General Plan Buildout with Project-20

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between west of Schooner Drive and City Limit with Los Angeles
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15300   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.9	118.3	253.7	546.0

TABLE General Plan Buildout with Project-21
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between east of Seacove Drive and west of Schooner Drive
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14200   SPEED (MPH): 50   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 12   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
53.3	112.6	241.4	519.5

TABLE General Plan Buildout with Project-22

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Palos Verdes Drive South Between Hawthorne Boulevard and east of Seacove Drive
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15800 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
60.7	122.4	259.7	557.6

TABLE General Plan Buildout with Project-23
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/05/2009
ROADWAY SEGMENT:
Silver Spur Road Between north of Elkmont Dr. and City Limit of Rolling Hills Es
tates
NOTES: Rancho Palos Verdes - General Plan Buildout with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10700   SPEED (MPH): 45   GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6   SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.18

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	78.0	167.6	360.8

Appendix E

CITY OF RANCHO PALOS VERDES

GENERAL PLAN CIRCULATION ELEMENT UPDATE

TRAFFIC IMPACT ANALYSIS

Prepared for:

City of Rancho Palos Verdes

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July 19, 2010 ***DRAFT***

Ruth Smith, TE, PTP
Project Manager

Date

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CITY OF RANCHO PALOS VERDES
GENERAL PLAN CIRCULATION ELEMENT UPDATE
TRAFFIC IMPACT ANALYSIS

I. INTRODUCTION

Project Description

This report, prepared by Willdan Engineering, provides a summary of the traffic impact analysis (TIA) for the update of the City of Rancho Palos Verdes General Plan Circulation Element. ***Exhibit 1*** is a vicinity map of the Palos Verdes Peninsula. The study area is shown on ***Exhibit 2***. The traffic analysis provides a nexus between the Land Use and Circulation elements of the General Plan since by determining the required roadways and intersection geometries that will be needed at General Plan Buildout in 2035 to meet the needs of the planned land uses.

Study Area Roadway Segments and Intersections

The traffic impact analysis includes the review of the 28 study roadway segments and 22 study intersections listed below and illustrated on ***Exhibits 3*** and ***4****, respectively*.

Study Roadway Segments

Crenshaw Boulevard

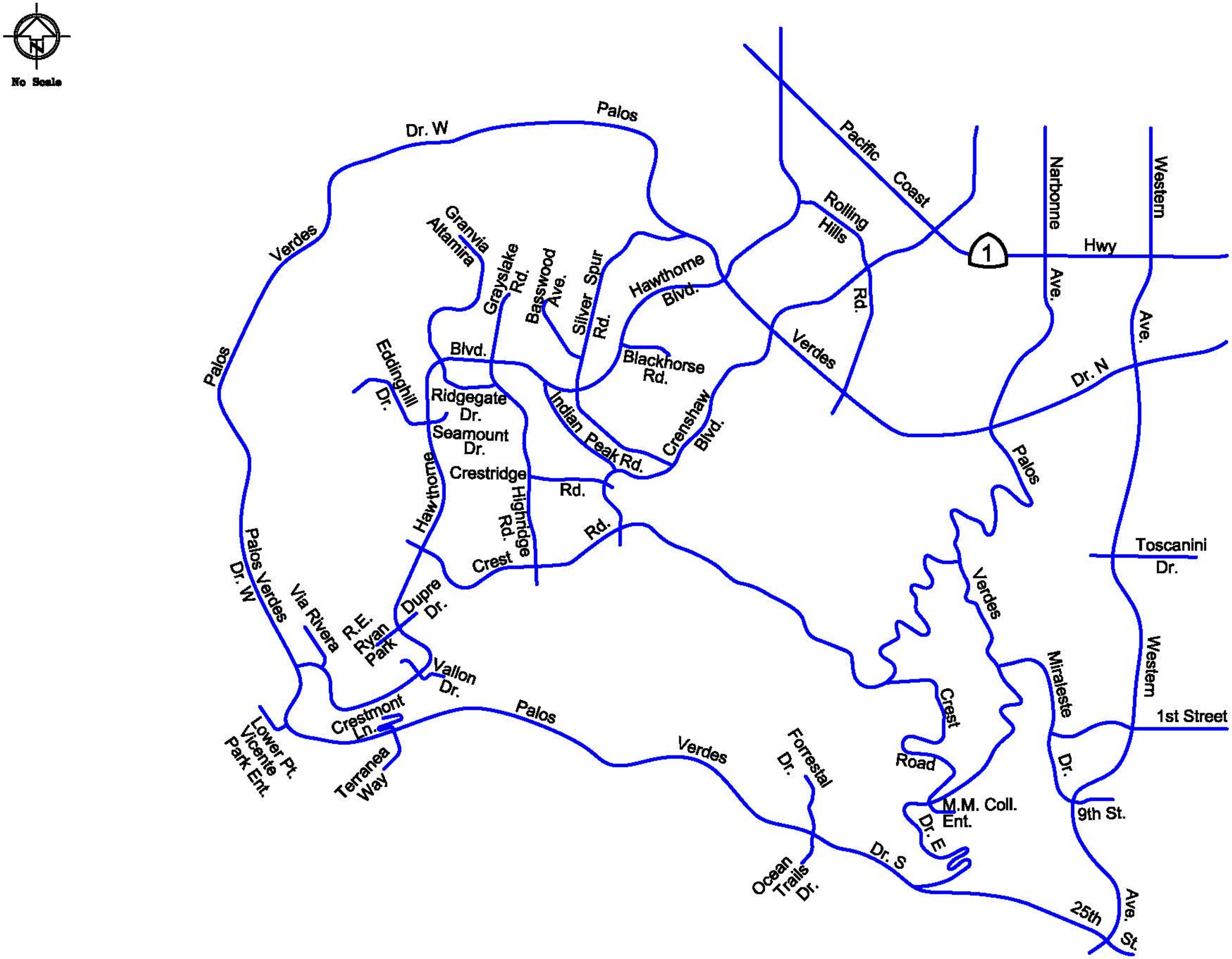
- Between the North City Limit and Indian Peak Road
- Between Indian Peak Road and Crest Road

Crest Road

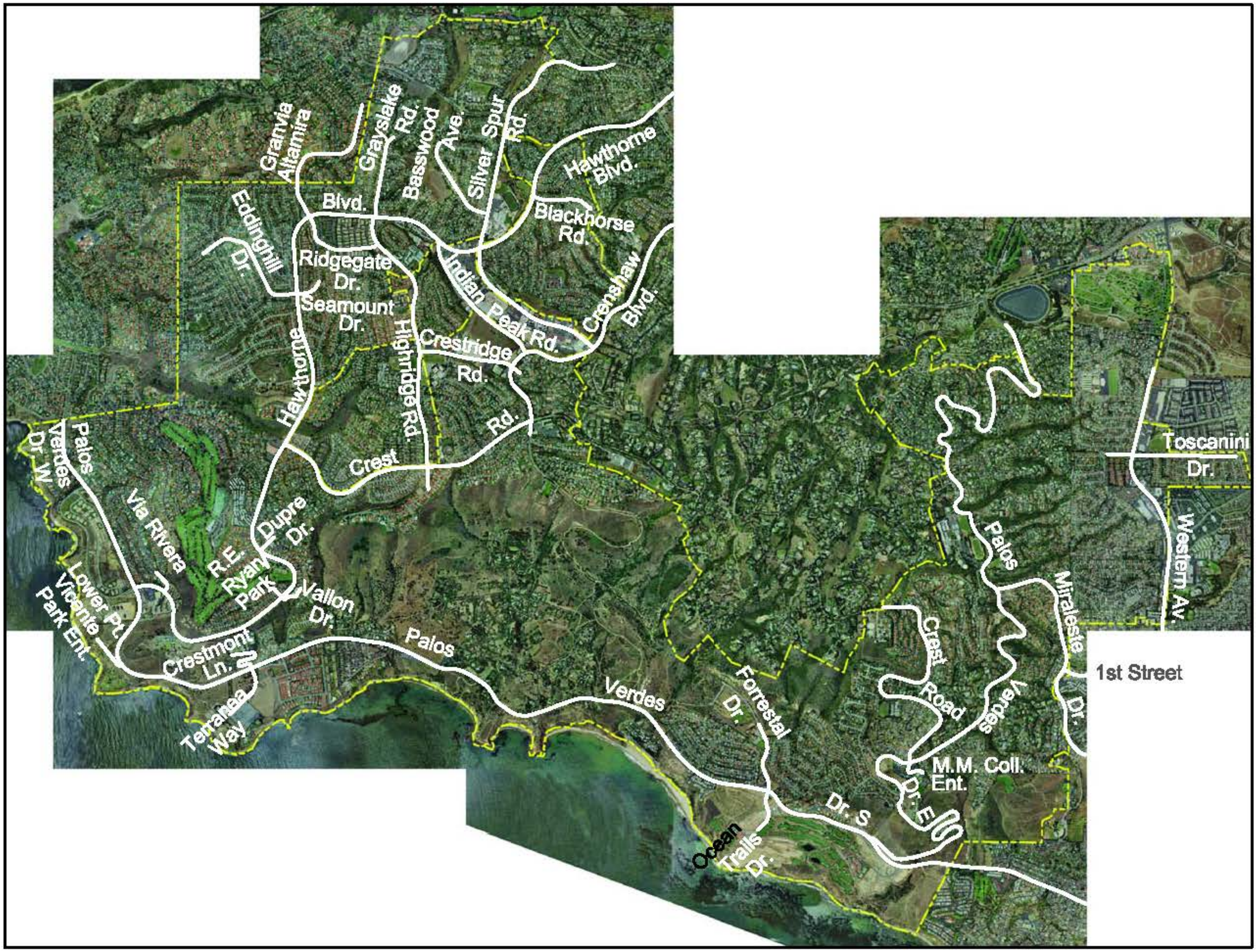
- Between Hawthorne Boulevard and Crenshaw Boulevard
- Between Palos Verdes Drive East and Ganado Drive

Crestridge Road

- Between Highridge Road and Crenshaw Boulevard



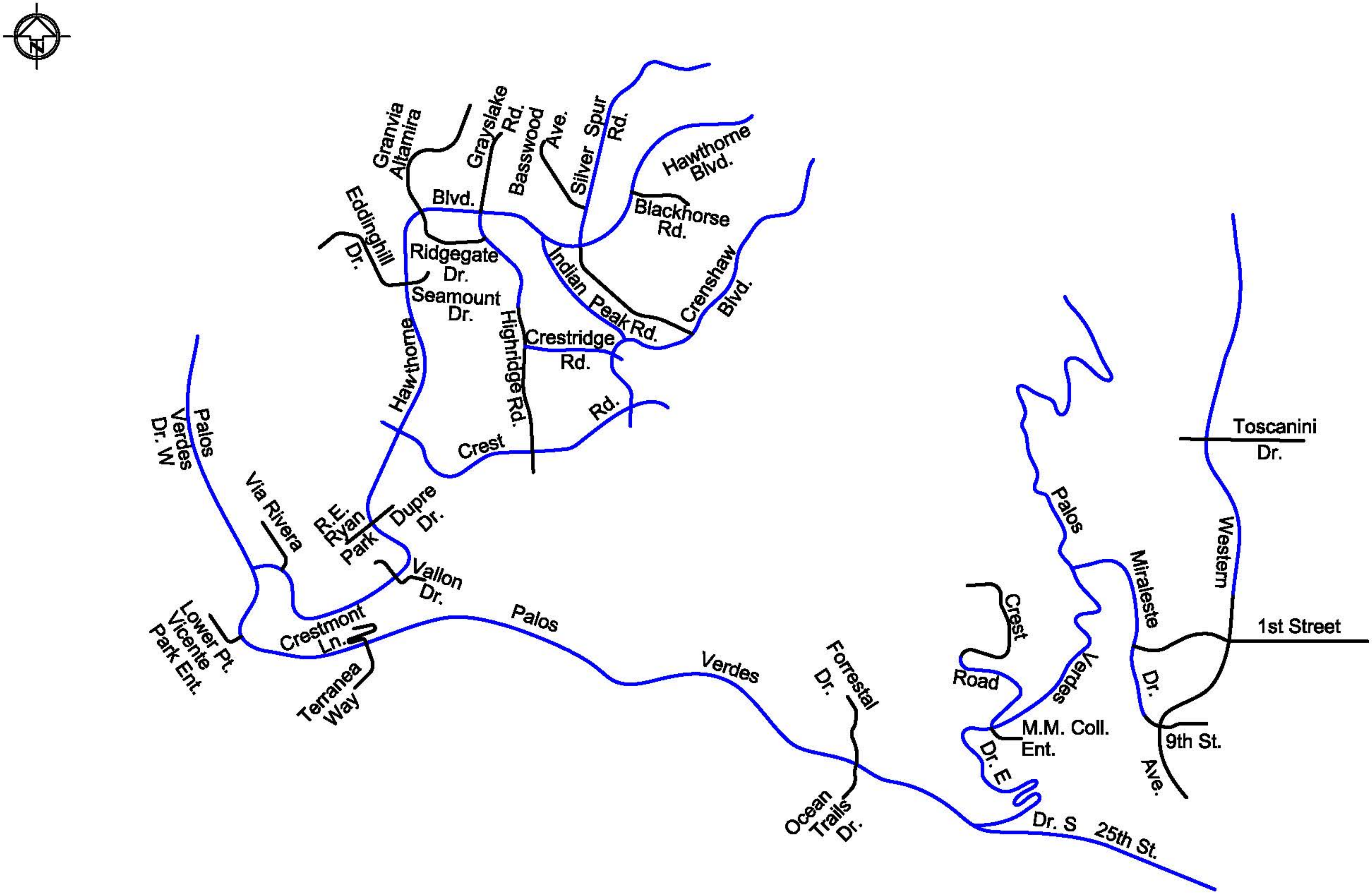
Vicinity Map
EXHIBIT 1



LEGEND

= RANCHO PALOS VERDES CITY BOUNDARY

Study Area Map
EXHIBIT 2

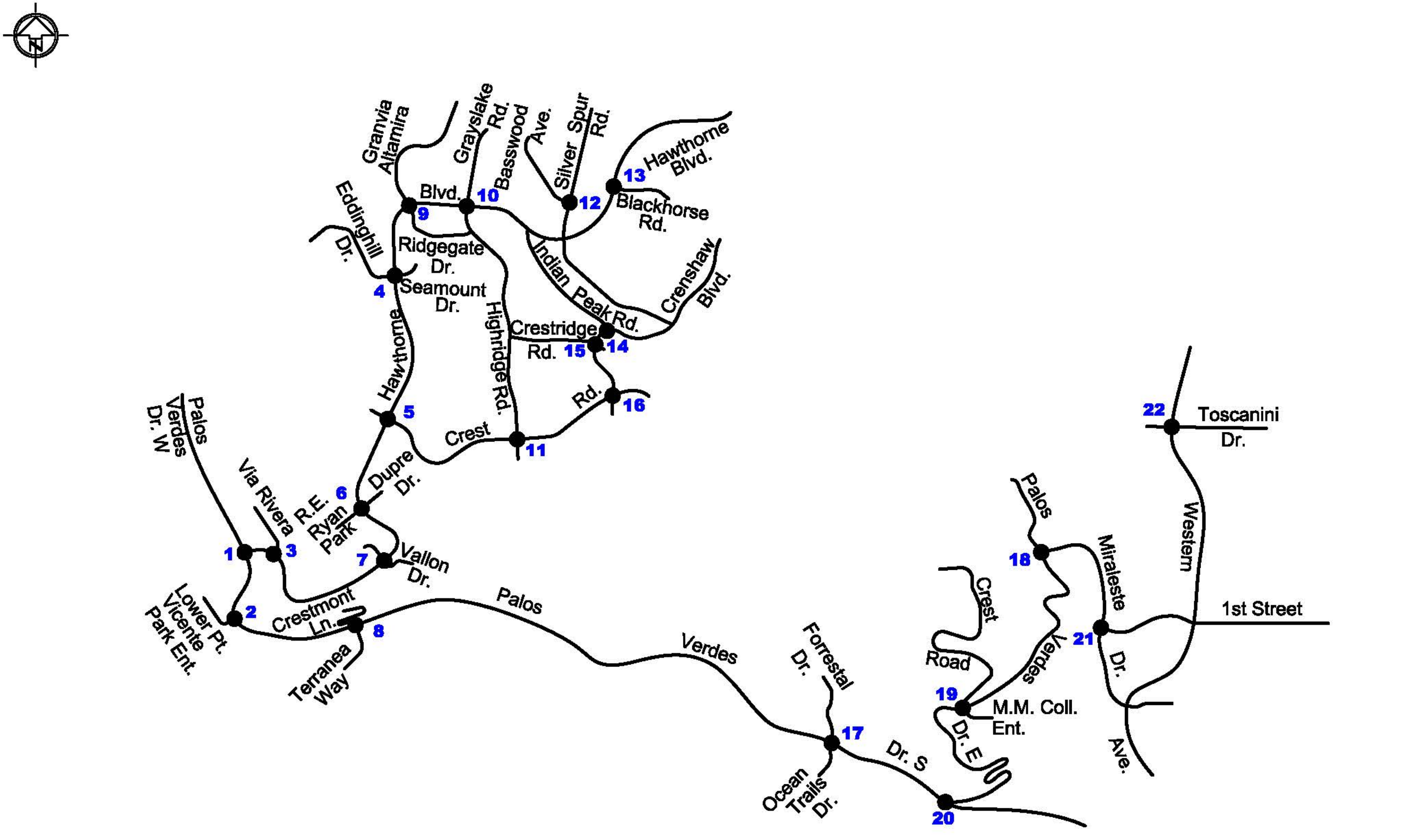


LEGEND

= STUDY AREA ROADWAY SEGEMENT

Study Area Roadway Segments
EXHIBIT 3

WILLDAN Engineering



LEGEND

● = STUDY INTERSECTION

23 = INTERSECTION NUMBER

Study Area Intersections

EXHIBIT 4

Hawthorne Boulevard

- Between the North City Limit and Blackhorse Road
- Between Blackhorse Road and Indian Peak Road
- Between Indian Peak Road and Grayslake Road/Highridge Road
- Between Grayslake Road/Highridge Road and Granvia Atlamira/Ridgegate Drive
- Between Granvia Atlamira/Ridgegate Drive and Eddinghill Drive/Seamount Drive
- Between Eddinghill Drive/Seamount Drive and Crest Road
- Between Crest Road and Vallon Drive
- Between Vallon Drive and Palos Verdes Drive West

Highridge Road

- Between Hawthorne Boulevard and the City Limit with Rolling Hills Estates

Indian Peak Road

- Between Crenshaw Boulevard and the City Limit with Rolling Hills Estates

Miraleste Drive

- Between Palos Verdes Drive East and1st Street
- Between 1st Street and the East City Limit at 9th Street

Palos Verdes Drive East

- Between the North City Limit and Miraleste Drive
- Between Miraleste Drive and North of Crest Road
- Between North of Crest Road and Ganado Drive
- Between Ganado Drive and Palos Verdes Drive South

Palos Verdes Drive South

- Between Palos Verdes Drive West and Crestmont Lane/Terranea Way
- Between Crestmont Lane/Terranea Way and Forrestal Drive/Ocean Trails Drive
- Between Forrestal Drive/Ocean Trails Drive and Palos Verdes Drive East
- Between Palos Verdes Drive East and the East City Limit

Palos Verdes Drive West

- Between the North City Limit and Hawthorne Boulevard

Silver Spur Road

- Between the North City Limit and just north of Hawthorne Boulevard
- Between Hawthorne Boulevard and Palos Verdes Drive South

Western Avenue

- Between the North City Limit and the South City Limit

Study Intersections

1. Palos Verdes Drive West (NS)/Hawthorne Boulevard (EW)
2. Palos Verdes Drive West (NS)/Lower Point Vicente Park Entrance (EW)
3. Via Rivera (NS)/Hawthorne Boulevard (EW)
4. Hawthorne Boulevard (NS)/Eddinghill Drive – Seamount Drive
5. Hawthorne Boulevard (NS)/ Crest Road
6. Hawthorne Boulevard (NS)/Dupre Drive – R. E. Ryan Park Driveway (EW)
7. Hawthorne Boulevard (NS)/Vallon Drive (EW)
8. Crestmont Lane – Terranea Way (NS)/Palos Verdes Drive South
9. Gravania Altamira – Ridgegate Drive (NS)/Hawthorne Boulevard (EW)
10. Grayslake Road – Highridge Road (NS)/Hawthorne Boulevard
11. Highridge Road (NS)/Crest Road
12. Silver Spur Road (NS)/Hawthorne Boulevard (EW)
13. Hawthorne Boulevard (NS)/Blackhorse Road (EW)
14. Crenshaw Boulevard (NS)/Indian Peak Road (EW)
15. Crenshaw Boulevard (NS)/Crestridge Road (EW)
16. Crenshaw Boulevard (NS)/Crest Road (EW)
17. Forrestal Drive – Ocean Trails Drive (NS)/Palos Verdes Drive South (EW)
18. Palos Verdes Drive East (NS)/Miraleste Drive (EW)
19. Palos Verdes Drive East (NS)/Crest Road – Marymount College Driveway (EW)
20. Palos Verdes Drive East (NS)/Palos Verdes Drive South (EW)
21. Miraleste Drive (NS)/1st Street (EW)
22. Western Avenue (NS)/Toscanini Drive (EW)

Related Projects

Due to the close proximity of the cities of Rolling Hills Estates and Los Angeles to the City of Rancho Palos Verdes, proposed and approved development projects within these cities that would be likely to contribute traffic to the study intersections were included in the analysis. These projects, in addition to similar projects in the City of Rancho Palos Verdes, form the basis for the related projects list shown in Section III.

Vacant Parcels

The build-out of the General Plan also includes all developable vacant parcels. To account for these parcels, the City generated a map of vacant, developable parcels, and the trips that each parcel would generate were estimated based on its land use. A more detailed discussion of the vacant parcels is included in Section III.

Analysis Scenarios

The traffic analysis evaluated the traffic operating conditions for the following scenarios:

- Existing Conditions
- 2035 General Plan Buildout Conditions With Planned Improvements
- 2035 General Plan Buildout Conditions With Additional Improvements

The 2035 General Plan Buildout conditions were estimated using build-up methodology where an ambient growth factor was applied to existing traffic volumes and trips from related projects and vacant parcels were added to the total.

Traffic Analysis Methodologies

<u>Intersection Analysis Methodologies</u>

The Intersection Capacity Utilization (ICU) method was used to analyze the Level of Service (LOS) for signalized intersections and the 2000 *Highway Capacity Manual* (HCM) methodology was used for unsignalized intersections.

For signalized intersections, an ICU value is calculated based upon a comparison of peak hour intersection volumes to available roadway capacity for the critical intersection movements. The ICU values are then related to Levels of Service (LOS), which are qualitative descriptions of intersection operations and can range from "A" (the best level) to "F" (the worst). The City of Rancho Palos Verdes generally considers LOS A through D to represent acceptable intersection operations, while LOS E and F indicate a congested (unacceptable) situation. A more detailed explanation of ICU and its relationship to LOS is contained in ***Appendix A***.

The 2000 *Highway Capacity Manual* (HCM) methodology was utilized to analyze the unsignalized intersections. For both of these intersection analysis methods, the operating conditions are defined in terms of Levels of Service (LOS). The Levels of Service are described using letter "grades", which are associated with vehicle delay times, where "A" is considered the best and "F" is over capacity. As with the ICU methodology, the City of Rancho Palos Verdes generally considers LOS A through D to represent acceptable intersection operations, while LOS E and F indicate a congested (unacceptable) situation. An explanation of Level of Service as it relates to vehicle delay for the 2000 HCM analysis is provided in ***Appendix B***.

The 2035 General Plan Buildout analysis assumed that certain planned improvements by the City (identified in Section IV) would be implemented by 2035. Any study intersections that were anticipated to operate LOS E or F in 2035 were considered to be deficient and additional improvements to improve the intersection LOS to D or better were determined.

Daily Traffic Analysis Methodology

The Orange County Transportation Authority's (OCTA) Road Capacity Values shown in Table A-4-2: Arterial Highways, from their Roadway Design Standards (***Appendix C***), were used to determine the roadway levels of service based on daily traffic volumes. The maximum average daily traffic Roadway Capacity Values are given for each type of roadway at each level of service. The standards note that the average daily traffic roadway capacities are approximate values only and are used at the General Plan level to assist in determining the arterial highway classification (number of through lanes) needed to meet traffic demand. They also note that the capacities are affected by such factors as intersections, degree of access control, roadway grades, design geometrics, sight distance, levels of truck and bus traffic and levels of pedestrian and bicycle traffic.

Roadway capacities for 2 Lane Divided roads were derived from 4 Lane Divided roads, since the OCTA table does not include the 2 Lane Divided classification. A comparison of the table's capacities indicated that those for 2 Lane Divided are half of the 4 Lane Divided. Accordingly, the 2 Lane Divided capacities shown are half of the 4 Lane Divided capacities. OCTA's modified Road Capacity Table A-4-2 is shown below.

Modified Table A-4-2: Arterial Highways

	LEVEL OF SERVICE					
TYPE OF ARTERIAL	**A**	**B**	**C**	**D**	**E**	**F**
8 Lanes Divided (8D)	45,000	52,500	60,000	67,500	75,000	--
6 Lanes Divided (6D)	33,900	39,400	45,000	50,600	56,300	--
4 Lanes Divided (4D)	22,500	26,300	30,000	33,800	37,500	--
4 Lanes Undivided (UD)	15,000	17,500	20,000	22,500	25,000	--
2 Lanes Divided (2D)	11,300	13,200	15,000	16,900	18,800	--
2 Lanes Undivided (2U)	7,500	8,800	10,000	11,300	12,500	--

Congestion Management Program (CMP) Intersection

One intersection, at Western Avenue and Toscanini, is included in the County of Los Angeles' Congestion Management Program. Since the intersection is projected to operate at acceptable levels of service in 2035, no further analysis is needed.

Planned Improvements

A number of roadway and intersection improvements are planned by the City and by others, that would be implemented by General Plan Buildout in 2035. ***Table 1*** lists these planned improvements.

TABLE 1

PLANNED INTERSECTION AND ROADWAY IMPROVEMENTS

IMPROVE-MENT NO.	IMPROVEMENT LOCATION	IMPROVEMENT DESCRIPTION	RESPONSIBLE ENTITY
1	PVDS/PVDE	Modify the intersection to provide a 2-stage gap acceptance design for southbound left-turning vehicles,including median refuge area and acceleration lane.	City of Rancho Palos Verdes with contributions from Marymount College & The Annenberg Project at Lower Point Vicente
2	PVDE/Miraleste Dr.	Install new traffic signal with westbound right turn overlap phasing	Marymount College (mitigation measures) & City of Rancho Palos Verdes
3	PVDW/PVDS at Lower Point Vicente Park entrance	Modify the existing access by removing the skewed approach & creating a 90-degree approach, signalize the intersection with turn pockets, bus-stops, and pedestrian crosswalks and trails.	The Annenberg Project at Lower Point Vicente & City of Rancho Palos Verdes
4	Hawthorne/Via Rivera	Install new traffic signal	The Annenberg Project at Lower Point Vicente mitigation measure
5	PVDS/Forrestal Dr. - Ocean Trails Dr.	Install new traffic signal	The Annenberg Project at Lower Point Vicente mitigation measure
6	Crenshaw Blvd./Crest Dr.	Operational improvement such as traffic signal, roundabout or channelization.	City of Rancho Palos Verdes
7	10 locations, including Hawthorne/Via Rivera, PVDS/PVDE, Miraleste/1st St. and PVDE/Forrestal	Upgrade traffic signals, including replacement of the existing pedestrian heads with pedestrian count-down heads.	City of Rancho Palos Verdes

TABLE 1 (Cont)

PLANNED INTERSECTION AND ROADWAY IMPROVEMENTS

IMPROVE-MENT NO.	IMPROVEMENT LOCATION	IMPROVEMENT DESCRIPTION	RESPONSIBLE ENTITY
8	PVDW & PVDS from the North City Limit to the East City Limit	Class II Bikeway	City of Rancho Palos Verdes
9	PVDW from Oceanfront Estates to PVIC Entrance, PVDW from Coast Guard lighthouse entrance to Fishing Access, PVDS form Seahill Dr to Abalone Cove Park entrance, PVDW from PVE border to Hawthorne Blvd., PVDS from Crestmont Ln to Seahill Dr.	Sidewalk improvements	City of Rancho Palos Verdes
10	PVDE @ Bronco Drive	Improve portions of PVDE to provide wider travel lanes in each direction and improve pedestrian/equestrian path by trimming shrubbery and thinning over-grown brush and installing high-visibility crossing.	City of Rancho Palos Verdes
11	PVDE from Ganado Dr. to Marymount College	Reduce travel lanes from 2 lanes in each direction to 1 lane in each direction	City of Rancho Palos Verdes
12	PVDE from Miraleste Dr. to Miraleste Library	Improve sidewalks for pedestrian safety and circulation improvements. Add high visibility crossings at Miraleste Intermediate School and Via Canada	City of Rancho Palos Verdes
13	PVDE @ Switchbacks	Re-stripe and/or widen to provide maximum shoulder area for cycling safety and narrower roadway lanes for traffic calming; provide Type II bikeway	City of Rancho Palos Verdes

One intersection, at Western Avenue and Toscanini, is included in the County of Los Angeles' Congestion Management Program. Since the intersection is projected to operate at acceptable levels of service in 2035, no further analysis is needed.

II. *EXISTING CONDITIONS*

Existing General Plan Transportation Systems

The current General Plan for the City of Rancho Palos Verdes notes that there are three major elements of the transportation infrastructure, as follows:

- Vehicular Networks
- Public Transportation
- Path and Trail Networks

Vehicular Network

The vehicular network is currently divided into four basic classifications: freeways, arterials, collectors and locals.

Freeway There are no freeways on the Palos Verdes Peninsula, however the Peninsula and City of Rancho Palos Verdes are served by several freeways in the area including the Harbor Freeway (I-110), the San Diego Freeway (I-405), and the Terminal Island Freeway (SR-103).

Arterial An arterial street is the primary street on the Peninsula and provides connections with other arterials and may link up with major highways. Arterial streets typically range from major 4- or 6-lane divided roadways to secondary/minor 2-lane undivided roadways, each one serving a particular function. Arterial streets usually have limited access to adjacent properties, and their major intersections frequently require signalization. The roadways identified in the current General Plan as arterial streets include Crenshaw Boulevard (north of Crest Road), Crest Road (Hawthorne Boulevard to Crenshaw Boulevard), Hawthorne Boulevard (north of Palos Verdes Drive West), Highridge Road (Hawthorne Boulevard to Crest Road), Miraleste Drive/9th Street, Palos Verdes Drive East, Palos Verdes Drive South, Palos Verdes Drive West, Silver Spur (Hawthorne to Crenshaw).

Collector Collector streets serve to connect local streets to arterial streets, and are typically two-lane undivided roadways. There may be direct access to adjacent properties and on-street parking is usually allowed. The current General Plan identifies the following streets as Collectors: Crest Road from Crenshaw to Palos Verdes Drive East (not including the privately owned segment within the City of Rolling Hills), Ridgegate Drive/Granvia Altamira, Indian Peak Road, Monternalaga Drive, Silver Spur Road.

Local Although not specifically identified in the current General Plan, the local streets are the remaining streets not noted in the other categories. Local streets are typically narrower 2-lane undivided roadways that provide direct access to adjacent properties and usually have on-street parking.

Existing Roadway Conditions

The City of Rancho Palos Verdes is served by the major street system described in the following paragraphs:

Crenshaw Boulevard is an Arterial traversing the City in a north-south direction from Crest Road to the North City Limit. This roadway provides two lanes of travel in each direction, with opposing lanes of traffic separated by a raised median. Crenshaw Boulevard has a posted speed limit of 45 mph.

Crest Road is an east-west Arterial from Hawthorne Boulevard to Crenshaw Boulevard with two lanes of traffic in each direction. The opposing lanes of traffic are separated by a raised median. Crest Road is a two-lane undivided Collector from Crenshaw Boulevard to Palos Verdes Drive East. The posted speed limit is 40 mph on the Arterial section. The prima facie speed limit on the Collector section is 25 mph.

Crestridge Road is an east-west Local from Highridge Road to east of Crenshaw Boulevard, with one lane of traffic in each direction. The opposing lanes of traffic are separated by a raised median. The posted speed limit is 40 mph.

Hawthorne Boulevard is an Arterial traversing the entire City in a north-south direction. This roadway provides two lanes of traffic in each direction separated by a raised center median. The posted speed limit on Hawthorne Boulevard is 45 mph.

Highridge Road is a north-south Arterial from Crest Road to Hawthorne Boulevard, with one lane of traffic in each direction. The opposing lanes of traffic are separated by a raised median. The posted speed limit is 35 mph.

Indian Peak Road is a north-south Collector from Crenshaw Boulevard to Hawthorne Boulevard, with one lane of traffic in each direction. The opposing lanes of traffic are separated by a raised median. The posted speed limit is 35 mph.

Miraleste Drive is a north-south Arterial from Palos Verdes Drive East to Western Avenue, with one lane of traffic in each direction. The opposing lanes of traffic are separated by a wide landscaped median from Palos Verdes Drive East to just north of Via Colinita and a two-way left turn lane south of Via Colinita. The posted speed limit on Miraleste Drive is 35 mph.

Palos Verdes Drive East (PVDE) is currently identified as an Arterial. This north-south roadway provides one lane of traffic in each direction, except for the section from Calle Aventura to Ganado Drive, which is four lanes of traffic. Opposing lanes of traffic are generally separated by a double yellow centerline, except on either side of Crest Road, where it is separated by a raised median. The posted speed limit is 40 mph on Palos Verdes Drive East, except in the vicinity of Ganado Dr where it is 35 mph.

Palos Verdes Drive South (PVDS) is an Arterial street within the City. This east-west roadway traverses the entire City. The roadway provides two lanes of traffic in each direction, separated by a raised center median. East of Palos Verdes Drive East, Palos Verdes Drive South generally provides one lane of traffic in each direction with opposing lanes of traffic separated by a double-yellow line. The posted speed limit on Palos Verdes Drive South is 45 mph.

Palos Verdes Drive West (PVDW) is identified as an Arterial. This north-south roadway provides two lanes of traffic in each direction. Opposing lanes of traffic are separated by a raised median. The posted speed limit is 45 mph on Palos Verdes Drive West.

Silver Spur Road is a north-south Collector north of Hawthorne Boulevard, with one lane of traffic in each direction generally separated by a raised median. The posted speed limit is 35 or 45 mph, depending on the section of Silver Spur Road.

Western Avenue is a major north-south arterial street. Western Avenue provides two lanes of traffic in each direction. Opposing lanes of traffic are separated by a raised center median. The posted speed limit on Western Avenue is 35 mph.
Since intersection operations typically define roadway conditions, operating conditions at the 22 study area intersections (listed previously in Section 1) were analyzed during the AM and PM peak hours.

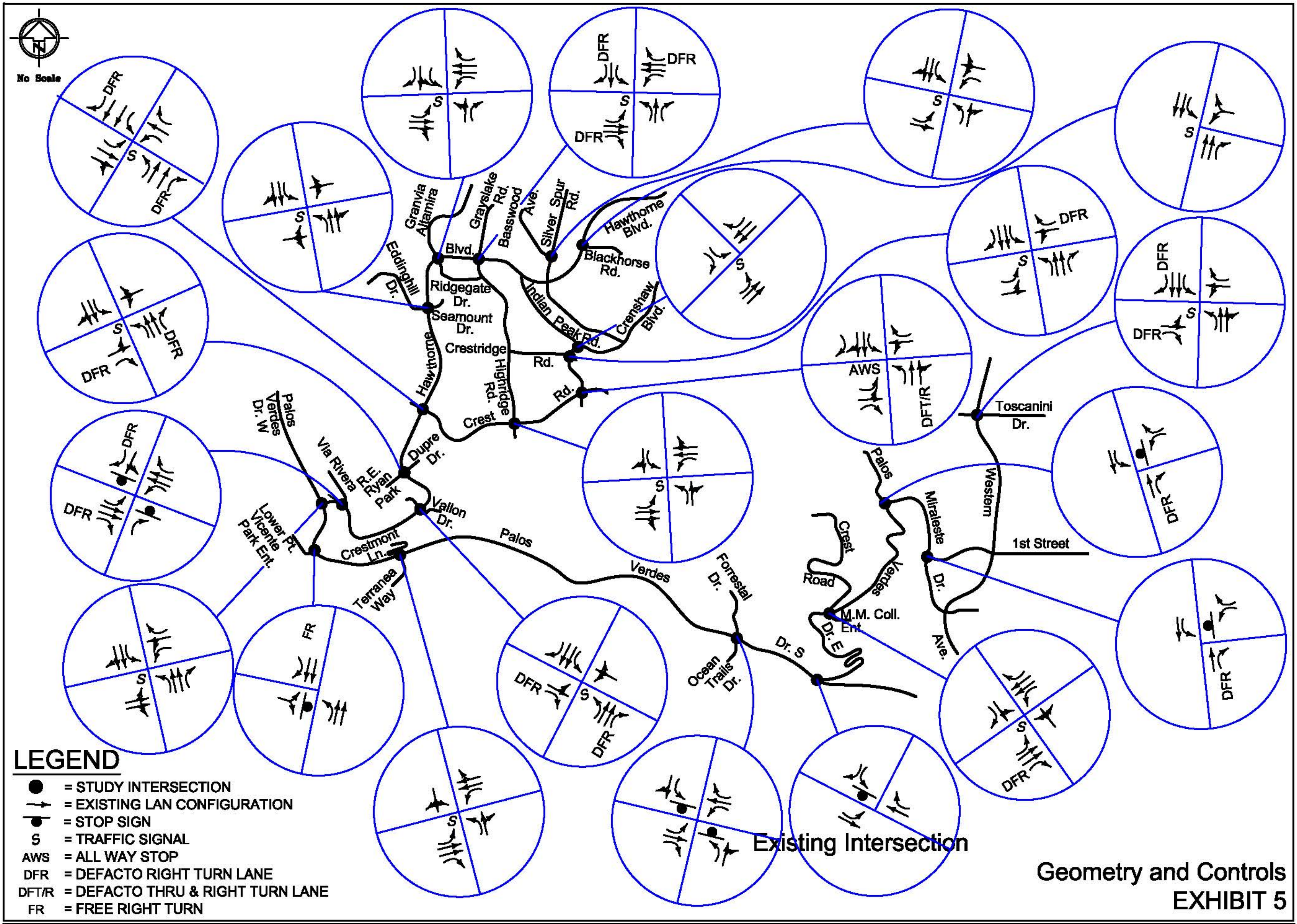
In order to evaluate current operations in the study area, a field review of the study area intersections was performed and traffic counts were collected. ***Exhibit 5*** presents the existing roadway configurations, intersection geometrics, and intersection controls in the project study area, which were observed in the field review.

Existing Traffic Volumes

AM and PM peak period traffic counts were collected from various sources (see **Table D1** in **Appendix D**) and balanced between intersections to provide flow conservation (see **Exhibit D-1** in **Appendix D**). The most recent counts were conducted in 2009. Since traffic at the intersections were balanced, 2009 was assumed to be the base traffic count year. To simulate 2010 existing conditions, a growth rate of 0.646 percent was applied. The growth rate is the same rate used to represent ambient growth and is discussed in more detail in Section III.

The Existing AM and PM peak hour traffic volumes are illustrated on ***Exhibit 6***. The AM and PM peak hour count data is included in ***Appendix D***.

Existing daily traffic volumes on the study area roadways were also collected from various available sources, all counted in 2008. Where the counts were not available, the existing daily traffic volumes were estimated by applying a Daily–to–PM peak hour ratio of 13:1 to the existing PM peak hour traffic volumes. The ratio was derived from the existing traffic counts. To represent 2010 conditions, a growth rate of 0.646 percent per year was applied



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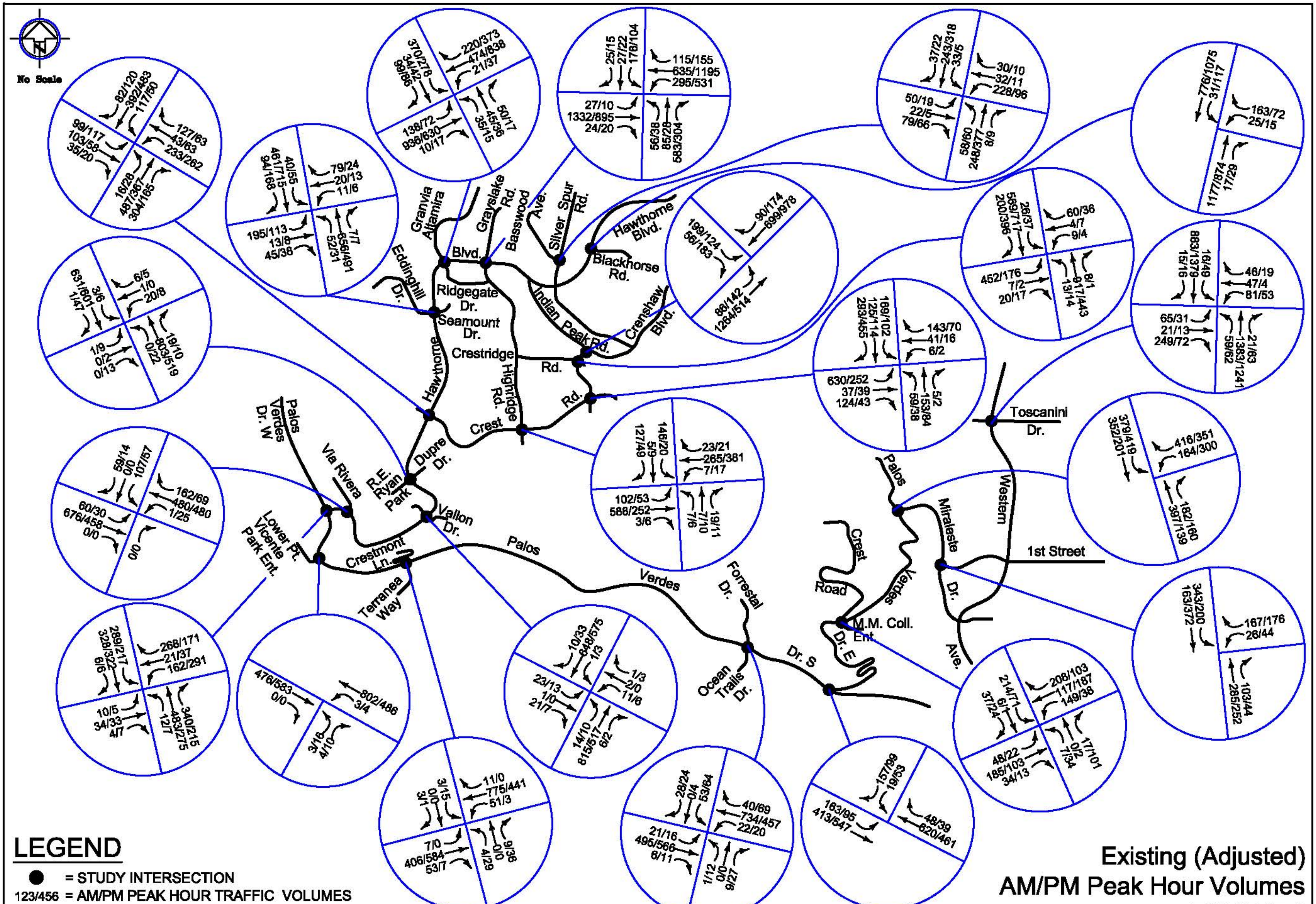

Existing (Adjusted)
AM/PM Peak Hour Volumes
EXHIBIT 6

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General Plan Circulation Element Update
Traffic Impact Analysis (#100114)
City of Rancho Palos Verdes

to the existing traffic volumes. Two years of growth were applied to the traffic count volumes and one-year of growth was applied to the estimated traffic volumes. The resulting Existing daily traffic volumes are shown on ***Table 2.***

Existing Conditions Intersection Analysis

The operating conditions at the study intersections were evaluated utilizing the Intersection Capacity Utilization (ICU) and 2000 Highway Capacity Manual (HCM) methodologies described in Section I. ***Table 3*** summarizes the results of the intersection analysis for Existing conditions.

The following four study intersections are currently operating at unacceptable levels of service during the AM peak hour and/or the PM peak hour:

10. Grayslake Road-Highridge Road/Hawthorne Boulevard
17. Forrestal Drive – Ocean Trails Drive/Palos Verdes Drive South
18. Palos Verdes Drive East/Miraleste Drive
20. Palos Verdes Drive East/Palos Verdes Drive South

The supporting ICU and HCM intersection analyses worksheets can be referenced in ***Appendix E***.

Existing Conditions Roadway Segment Analysis

Daily traffic volumes are not typically used to determine roadway capacity for existing or near-term conditions since intersection capacity/operations more realistically represent roadway operating conditions. For this study, they have been provided for comparison to the General Plan Buildout (2035) conditions.

The Orange County Transportation Authority's (OCTA) Roadway Design Standards Road Capacity Values were used to determine the roadway segment levels of service for existing conditions based on the existing daily traffic volumes for the roadway segments. The results of the analysis are shown in ***Table 4***. ***Table 4*** indicates that 20 of the 28 roadway

TABLE 2

INTERSECTION LEVEL OF SERVICE SUMMARY - EXISTING CONDITIONS

	INTERSECTION	AM PEAK HOUR ICU or Delay (sec)	AM PEAK HOUR LOS	PM PEAK HOUR ICU or Delay (sec)	PM PEAK HOUR LOS
1	Palos Verdes Dr. W/Hawthorne Bl.	0.698	B	0.559	A
2	Palos Verdes Dr. W/Lower Pt. Vicente Park Ent.	14.9	B	17.9	C
3	Via Rivera/Hawthorne Bl.	24.0	C	25.1	D
4	Hawthorne Bl./Eddinghill Dr. - Seamount Dr.	0.605	B	0.507	A
5	Hawthorne Bl./Crest Rd.	0.623	B	0.563	A
6	Hawthorne Bl./Dupre Dr. - R. E. Ryan Park Dwy.	0.401	A	0.407	A
7	Hawthorne Bl./Vallon Dr.	0.410	A	0.368	A
8	Crestmont Ln. - Terranea Wy./Palos Verdes Dr. S	0.387	A	0.380	A
9	Gravania Altamira - Ridgegate Dr./Hawthorne Bl.	0.631	B	0.584	A
10	Grayslake Rd. - Highridge Rd./Hawthorne Bl.	1.176	F	0.948	E
11	Highridge Rd./Crest Rd.	0.355	A	0.367	A
12	Silver Spur Rd./Hawthorne Bl.	0.466	A	0.456	A
13	Hawthorne Bl./Blackhorse Rd.	0.552	A	0.438	A
14	Crenshaw Bl./Indian Peak Rd.	0.693	B	0.657	B
15	Crenshaw Bl./Crestridge Rd.	0.637	B	0.519	A
16	Crenshaw Bl./Crest Rd.	31.4	D	13.8	B
17	Forrestal Dr. - Ocean Trails Dr./Palos Verdes Dr. S	79.3	F	62.2	F
18	Palos Verdes Dr. E/Miraleste Dr.	967.8	F	913.6	F
19	Palos Verdes Dr. E/Crest Rd. - Marymount Col. Dwy.	0.442	A	0.328	A
20	Palos Verdes Dr. E/Palos Verdes Dr. S	43.6	E	44.9	E
21	Miraleste Dr./1st St.	17.4	C	17.2	C
22	Western Ave./Toscanini Dr.	0.668	B	0.620	B

ICU = Intersection Capacity Utilization; LOS = Level of Service

TABLE 3

ROADWAY SEGMENT DAILY TRAFFIC VOLUMES

STREET	SEGMENT	DAILY TRAFFIC VOLUMES EXISTING[1] (2010)	AMBIENT GROWTH[3]	RELATED PROJECTS	VACANT PARCELS	GEN PLAN BUILDOUT TOTAL
Crenshaw Blvd.	North City Limit - Indian Peak Rd.	23,413	3,781	3,248	782	31,224
	Indian Peak Rd. - Crest Rd.[2]	15,304	2,663	4,550	800	23,317
Crest Rd.	Hawthorne Blvd - Crenshaw Blvd.	11,178	1,945	3,267	756	17,146
	Palos Verdes Dr. E - Ganado Dr.	2,917	471	96	0	3,484
Crestridge Rd.	Highridge Rd. - Crenshaw Blvd.	8,083	1,305	1,131	16	10,535
Hawthorne Blvd.	North City Limit - Blackhorse Rd.	27,965	4,516	3,992	424	36,897
	Blackhorse Rd. - Indian Peak Rd.	26,068	4,210	4,016	418	34,712
	Indian Peak Rd. - Grayslake Rd./Highridge Rd.	41,160	6,647	4,369	572	52,748
	Grayslake Rd./Highridge Rd. - Granvia Altamira/Ridgegate Dr.	28,436	4,592	3,747	520	37,295
	Granvia Altamira/Ridgegate Dr. - Eddinghill Dr./Seamount Dr.	21,701	3,505	3,340	518	29,064
	Eddinghill Dr./Seamount Dr. - Crest Rd.	16,884	2,727	2,922	518	23,051
	Crest Rd. - Vallon Dr.	17,437	2,816	5,780	1,234	27,267
	Vallon Dr. - Palos Verdes Dr. W	14,769	2,385	5,796	1,214	24,164
Highridge Rd.	Hawthorne Blvd. - City Limit with Rolling Hills Estates[2]	8,634	1,502	262	50	10,448
Indian Peak Rd.	Crenshaw Blvd. - City Limit with Rolling Hills Estates[2]	8,931	1,554	1,994	18	12,497
Miraleste Dr.	Palos Verdes Dr. E - 1st St.	16,088	2,598	194	170	19,050
	1st St. - East City Limit at 9th St.	6,069	980	194	166	7,409
Palos Verdes Dr. E	North City Limit - Miraleste Dr.	14,519	2,345	1,682	494	19,040
	Miraleste Dr. - North of Crest Dr.	10,464	1,690	1,876	448	14,478
	North of Crest Dr. - Ganado Dr.	7,887	1,274	1,874	318	11,353
	Ganado Dr. - Palos Verdes Dr. S	5,010	809	966	318	7,103
Palos Verdes Dr. S	Palos Verdes Dr. W and Crestmont Ln./Terranea Wy.[2]	13,082	2,276	5,330	1,804	22,492
	Crestmont Ln./Terranea Wy. - Forrestal Dr./Ocean Trails Dr.[2]	12,950	2,253	4,494	1,804	21,501
	Forrestal Dr./Ocean Trails Dr. - Palos Verdes Dr. E	15,783	2,549	4,396	1,370	24,098
	Palos Verdes Dr. E - East City Limit	14,440	2,332	4,202	1,258	22,232
Palos Verdes Dr. W	North City Limit - Hawthorne Blvd.	13,096	2,279	1,886	589	17,850
	Hawthorne Blvd. - Palos Verdes Dr. S	14,703	2,558	5,390	1,804	24,455
Silver Spur Rd.	North City Limit - North of Hawthorne Blvd.[2]	9,079	1,525	370	18	10,992
Western Ave.	North City Limit - South City Limit	21,844	3,670	3,786	1,196	30,496

[1] Existing traffic volumes were calculated from 2009 PM peak hour turning movement counts using a daily-to-peak ratio of 13. Volumes include one year of growth at 0.646%/year.

[2] Existing traffic volume derived from traffic count data collected in 2008 for the initial *Traffic Impact Analysis of the City of Rancho Palos Verdes General Plan Update*, prepared by LSA Associates, Inc. in October 2009. Volume reflects 0.646% growth for two years (1.292%) to represent 2010 conditions.

[3] The ambient growth for 25 years at 0.646%/year is 16.15%.

TABLE 4

ROADWAY SEGMENTS LEVEL OF SERVICE SUMMARY - EXISTING CONDITIONS

STREET	SEGMENT	EXISTING LANE CONFIG	EXISTING DAILY VOLS (2010)	LEVEL OF SERVICE (LOS)[1]
Crenshaw Blvd.	North City Limit - Indian Peak Rd.	4D	23,413	B
	Indian Peak Rd. - Crest Rd.	4D	15,502	A
Crest Rd.	Hawthorne Blvd - Crenshaw Blvd.	4D	13,167	A
	Palos Verdes Dr. E - Ganado Dr.	2U	2,917	A
Crestridge Rd.	Highridge Rd. - Crenshaw Blvd.	2D	9,104	A
Hawthorne Blvd.	North City Limit - Blackhorse Rd.	4D	27,965	C
	Blackhorse Rd. - Indian Peak Rd.	4D	26,068	B
	Indian Peak Rd. - Grayslake Rd./Highridge Rd.	4D	41,330	F
	Grayslake Rd./Highridge Rd. - Granvia Altamira/Ridgegate Dr.	4D	28,606	C
	Granvia Altamira/Ridgegate Dr. - Eddinghill Dr./Seamount Dr.	4D	21,884	A
	Eddinghill Dr./Seamount Dr. - Crest Rd.	4D	17,368	A
	Crest Rd. - Vallon Dr.	4D	19,164	A
	Vallon Dr. - Palos Verdes Dr. W	4D	16,849	A
Highridge Rd.	Hawthorne Blvd. - City Limit with Rolling Hills Estates	2D	8,746	A
Indian Peak Rd.	Crenshaw Blvd. - City Limit with Rolling Hills Estates	2D	9,046	A
Miraleste Dr.	Palos Verdes Dr. E - 1st St.	2D	16,088	D
	1st St. - East City Limit at 9th St.	2U	6,069	A
Palos Verdes Dr. E	North City Limit - Miraleste Dr.	2U	14,519	F
	Miraleste Dr. - North of Crest Dr.	2U	10,464	D
	North of Crest Dr. - Ganado Dr.	4U	7,887	A
	Ganado Dr. - Palos Verdes Dr. S	2U	5,010	A
Palos Verdes Dr. S	Palos Verdes Dr. W and Crestmont Ln./Terranea Wy.	4D	13,251	A
	Crestmont Ln./Terranea Wy. - Forrestal Dr./Ocean Trails Dr.	4D	13,117	A
	Forrestal Dr./Ocean Trails Dr. - Palos Verdes Dr. E	4D	16,581	A
	Palos Verdes Dr. E - East City Limit	2U	15,120	F
Palos Verdes Dr. W	North City Limit - Hawthorne Blvd.	4D	13,986	A
	Hawthorne Blvd. - Palos Verdes Dr. S	4D	15,920	A
Silver Spur Rd.	North City Limit - North of Hawthorne Blvd.	2D	9,196	A
Western Ave.	North City Limit - South City Limit	4D	21,844	A

[1] Level of Service based on the Road Capacity Values listed below, from the Orange County Transportation Authority, except for 2 Lanes Divided, which was not included in the table. Values for 2 Lanes Divided were calculated as one-half of the values for 4 Lanes Divided, based on the relationship of the values of 2 Lanes Undivided to 4 Lanes Undivided.

	LEVEL OF SERVICE					
TYPE OF ARTERIAL	A	B	C	D	E	F
8 Lanes Divided (8D)	45000	52500	60000	67500	75000	--
6 Lanes Divided (6D)	33900	39400	45000	50600	56300	--
4 Lanes Divided (4D)	22500	26300	30000	33800	37500	--
4 Lanes Undivided (UD)	15000	17500	20000	22500	25000	--
2 Lanes Divided (2D)	11300	13200	15000	16900	18800	--
2 Lanes Undivided (2U)	7500	8800	10000	11300	12500	--

Note: The Road Capacity Values are the maximum Average Daily Traffic for the given Level of Service.

segments are currently operating at level of service (LOS) A, two are operating at LOS B, one is operating at LOS C and two are operating at LOS D. The remaining three roadway segments, listed below, are currently operating at an unacceptable level of service, LOS F.

- Hawthorne Boulevard – Indian Peak Road to Grayslake Road/Highridge Road
- Palos Verdes Drive East – North City Limit to Miraleste Drive
- Palos Verdes Drive West – Palos Verdes Drive East to East City Limit

Existing Conditions Traffic Signal Warrant Analysis

A traffic signal warrant analysis was performed to determine if any of the seven unsignalized study intersections currently meet warrants for a traffic signal. The *California Manual of Uniform Traffic Control Devices* (CA MUTCD*)* Warrant 3, Peak Hour, was used for existing conditions. The analysis showed that the following two intersections currently meet both Part A and Part B for Warrant 3:

- Crenshaw Boulevard (NS) and Crest Road (EW)
- Palos Verdes Drive East and Miraleste Drive (EW)

The traffic signal warrant worksheets are included in ***Appendix H*** The remaining intersections do not currently meet the minimum traffic signal warrants.

III. FUTURE GROWTH

Regional Growth

Since the Palos Verdes Peninsula is isolated from other areas and mostly built-out, it is expected that there would be little regional or ambient growth. To be conservative, however, an ambient growth factor was applied to the existing traffic volumes. A growth rate of 0.646 percent per year was based on regional growth rates for the South Bay area contained in the 2004 *Los Angeles County Congestion Management Program (CMP)*. When expanded out to the analysis year of 2035, a regional growth factor of 1.17 was applied to the existing 2010 traffic counts.

Related Projects

To ensure that all anticipated development by General Plan Buildout in 2035 was included in the study, a list was obtained of related projects from the City of Rancho Palos Verdes, the City of Rolling Hills Estates and the City of Los Angeles. The list was compiled by Linscott, Law and Greenspan Engineers for the 2010 traffic impact analysis for The Annenberg Project at Lower Point Vicente and was updated by the City of Rancho Palos Verdes Planning Department staff. The list includes projects that are pending or approved and that are expected to be in place by 2035. ***Exhibit 7*** lists the related projects used in the analysis and shows their locations. Related project trip generation and available trip distributions from this source were used in the analysis.

Table 5 includes a description of each related project and the trips anticipated to be generated by each of the related projects. The trip distribution for each related project is illustrated on exhibits in ***Appendix F***. The AM and PM peak hour trips generated by the related projects are illustrated on ***Exhibit G-1 in Appendix G***. The related projects' daily trips are shown in previous ***Table 5***.

Vacant Parcels

Since the build-up methodology was used to estimate 2035 traffic volumes, the trips that

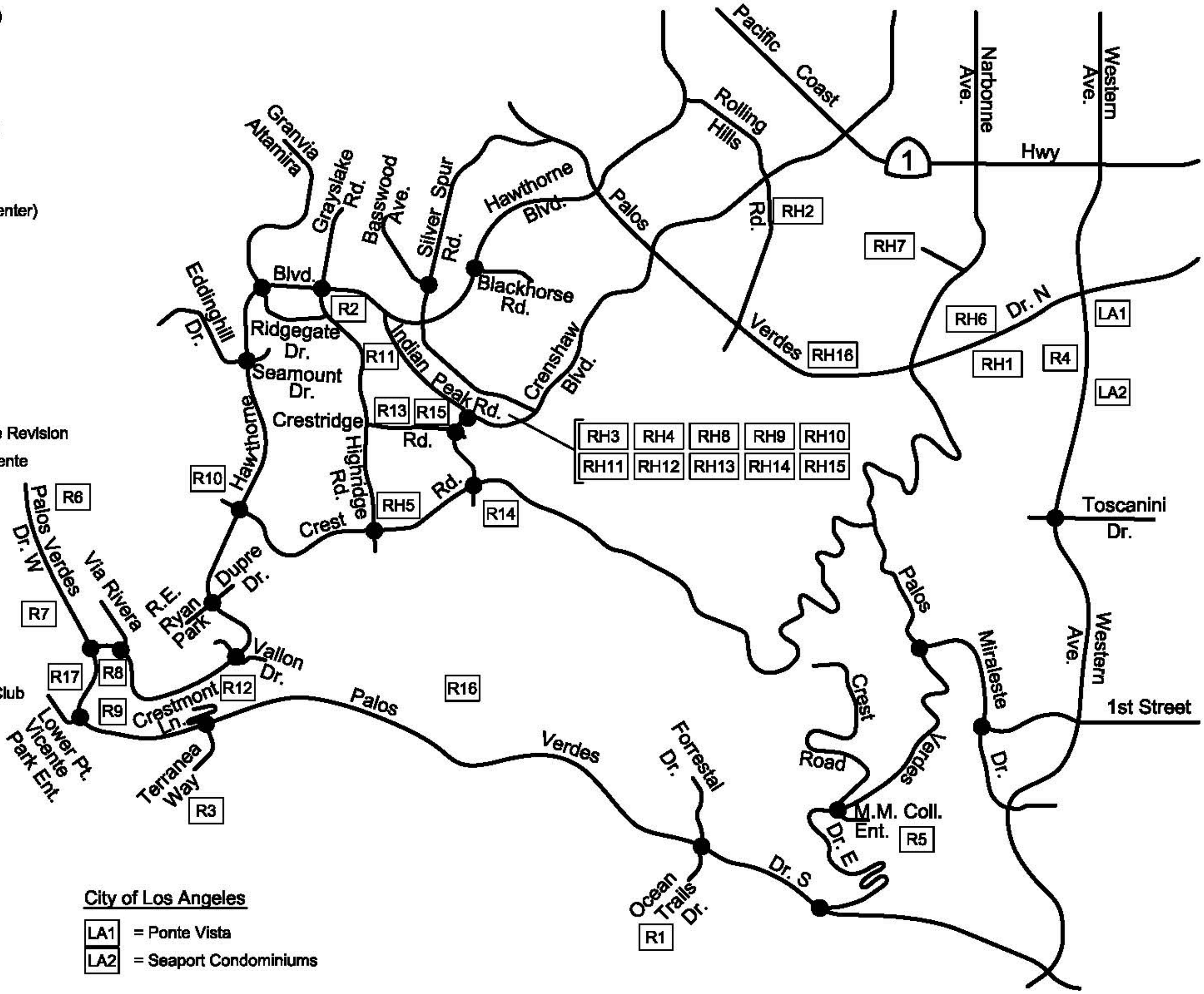
No Scale

City of Rancho Palos Verdes

- R1 = Trump National Golf Club (Ocean Trails)
- R2 = Chevron with Car Wash
- R3 = Terranea Resort and Spa
- R4 = Green Hills Memorial Park
- R5 = Marymount College Facilities Expansion
- R6 = TTM No. 52666
- R7 = Ocean Front Estates
- R8 = Trader Joe's (Golden Cove Shopping Center)
- R9 = Pointe Vicente Animal Hospital
- R10 = Hawthorne/Crest Office Building
- R11 = Highridge Condominiums
- R12 = Salvation Army Crestridge College
- R13 = Crestridge Estate LLC
- R14 = St. John Fisher Church Expansion
- R15 = Mirandella
- R16 = Zone 2 Landslide Moratorium Ordinance Revision
- R17 = The Annenburg Project at Lower Pt. Vicente

City of Rancho Palos Verdes

- RH1 = Rolling Hills Covenant Church
- RH2 = Tanglewood Subdivision
- RH3 = Silver Spur Court
- RH4 = Rolling Hills Villas
- RH5 = Crest Road Building
- RH6 = Butcher Ranch
- RH7 = Chandler Ranch/Rolling Hills Country Club
- RH8 = 627 Deep Valley Drive
- RH9 = Brickwalk LLC Residential
- RH10 = 827 Deep Valley Drive
- RH11 = Mediterranean Village
- RH12 = Silverdes Medical Office
- RH13 = Continental Development
- RH14 = Silver Center
- RH15 = Promenade Peninsula
- RH16 = 2901 Palos Verdes Drive North



City of Los Angeles

- LA1 = Ponte Vista
- LA2 = Seaport Condominiums

LEGEND

● = STUDY INTERSECTION

R1 = RELATED PROJECT LOCATION

Related Projects Location Map

EXHIBIT 7

WILLDAN Engineering

General Plan Circulation Element Update
Traffic Impact Analysis (#100114)
City of Rancho Palos Verdes

TABLE 5

RELATED PROJECTS LIST AND TRIP GENERATION

NO.	DESCRIPTION	*STATUS* / SIZE	DAILY VOLS	AM PK HR VOLS In	AM PK HR VOLS Out	AM PK HR VOLS Total	PM PK HR VOLS In	PM PK HR VOLS Out	PM PK HR VOLS Total
	City of Rancho Palos Verdes								
R 1	**Trump National Golf Club** (Ocean Trails) Palos Verdes Drive South, west of Shoreline Park	*Partially Built (5 homes built)*	**555**	**11**	**33**	**44**	**38**	**21**	**59**
	- Single Family Detached Housing	59 DU	517	10	31	41	35	20	55
	- Affordable Housing	4 DU	38	1	2	3	3	1	4
R 2	**Chevron with Car Wash** 27774 Hawthorne Boulevard (at Grayslake Road/Highridge Road)	*Proposed*	**917**	**37**	**35**	**72**	**43**	**41**	**84**
	- Gas Station with Convenience Market and Car Wash	6 VFP							
R 3	**Terranea Resort and Spa** 6610 Palos Verdes Drive South	*Built*	**6,263**	**195**	**118**	**313**	**247**	**252**	**499**
	- Resort Hotel	550 Rooms							
	- Condominiums	32 DU							
	- Retail	20,000 GLSF							
	- Restaurant	22,500 GLSF							
	- Fitness Center	22,000 GLSF							
	- Golf Course	9 Holes							
R 4	**Green Hills Memorial Park Master Plan** 27501 S. Western Avenue	*Approved*	**129**	**4**	**1**	**5**	**8**	**15**	**23**
	- Mausoleum (over 50 years)	27.3 Acres (94,525 SF)							
R 5	**Marymount College Facilities Expansion** 30800 Palos Verdes Drive East	*Approved*	**1,931**	**149**	**51**	**200**	**83**	**92**	**175**
	- Junior College Building Expansion	77,504 SF							
	- Demolish Existing Building	-18,022 SF							
	- BA Degree Program (University)	250 STU							
	- Junior College	-250 STU							
	- Jr. College Wkend Enrollment Incr.	67 STU							
R 6	**TTM No. 52666** 3200 Palos Verdes Drive West	*Partially Built (10 homes built)*	**29**	**1**	**1**	**2**	**2**	**1**	**3**
	- Single Family Residential	3 DU							

TABLE 3
(Page 2 of 5)

RELATED PROJECTS LIST AND TRIP GENERATION (Cont)

NO.	DESCRIPTION	*STATUS* / SIZE	DAILY VOLS	AM PK HR VOLS In	AM PK HR VOLS Out	AM PK HR VOLS Total	PM PK HR VOLS In	PM PK HR VOLS Out	PM PK HR VOLS Total
	City of Rancho Palos Verdes (cont)								
R 7	**Ocean Front Estates** Seaward side of Palos Verdes Dr. W. at terminus of Hawthorne Boulevard	*Partially Built (74 homes built)*	**48**	**1**	**3**	**4**	**3**	**2**	**5**
	- Single Family Detached Housing	5 DU							
R 8	**Trader Joe's** Golden Cove Shopping Center 31176 Hawthorne Boulevard	*Built (Opened 4/10)*	**1,125**	**24**	**15**	**39**	**59**	**57**	**116**
	- Supermarket	11,000 GLSF							
R 9	**Point Vicente Animal Hospital** 31270 Palos Verdes Drive West	*Approved*	**270**	**17**	**6**	**23**	**11**	**16**	**27**
	- Animal Hospital	5,759 GSF							
R 10	**Hawthorne/Crest Office Building** 29941 Hawthorne Boulevard	*Permit Expired (10/09)*	**80**	**10**	**1**	**11**	**2**	**9**	**11**
	- Office	7,232 GSF							
R 11	**Highridge Condominiums** 28220 Highridge Road	*Approved*	**163**	**2**	**10**	**12**	**10**	**5**	**15**
	- Condominiums	27 DU							
R 12	**Salvation Army Crestridge College** 30840 Hawthorne Boulevard	*Built (Opened 4/04)*	**133**	**2**	**8**	**10**	**8**	**4**	**12**
	- Apartment (Campus Housing)	20 DU							
R13	**Crestridge Estate LLC** 5601 Crestridge Road	*Proposed*	**542**	**14**	**14**	**28**	**14**	**15**	**29**
	- Senior Condominiums	90 DU	313	4	8	12	8	6	14
	- Senior Center	10,000 GSF	229	10	6	16	6	9	15
R 14	**St. John Fisher Church Expansion** 5448 Crest Road	*Approved*	**380**	**24**	**20**	**44**	**22**	**23**	**45**
	- Day Care Center	40 STU	179	17	15	32	16	17	33
	- Proposed new building area	32,426 GSF	295	11	7	18	9	9	18
	- Existing to be demolished	-10,329 GSF	-94	-4	-2	-6	-3	-3	-6
R 15	**Mirandella** Northwest corner of Crenshaw Blvd./Crestridge Rd.	*Under Construction*	**272**	**2**	**16**	**18**	**16**	**9**	**25**
	- Senior Apartments	34 DU							

RELATED PROJECTS LIST AND TRIP GENERATION (Cont)

NO.	DESCRIPTION	STATUS / SIZE		DAILY VOLS	AM PK HR VOLS In	AM PK HR VOLS Out	AM PK HR VOLS Total	PM PK HR VOLS In	PM PK HR VOLS Out	PM PK HR VOLS Total
	City of Rancho Palos Verdes (cont)									
R 16	**Zone 2 Landslide Moratorium Ordinance Revision** North of Palos Verdes Drive South btwn Narcissa Dr. and Peppertree Dr.	*Approved*		**450**	**9**	**20**	**29**	**30**	**17**	**47**
	- Single-Family Detached Housing	47	DU							
R 17	**The Annenberg Project at Lower Point Vicente** 31501 Palos Verdes Drive West	*Proposed*		**596**	**81**	**30**	**111**	**51**	**59**	**110**
	- Educational Interpretive Center	35,200	GSF							
	City of Rolling Hills Estates									
RH-1	**Rolling Hills Covenant Church** 2221-2222 Palos Verdes Drive North	*Proposed*		**1,000**	**68**	**28**	**96**	**41**	**59**	**100**
	- Church	1,650	Seats							
RH-2	**Tanglewood Subdivision** Rolling Hills Rd. & Tanglewood Ln.	*Proposed*		**29**	**1**	**1**	**2**	**2**	**1**	**3**
	- Single Family Detached Housing	3	DU							
RH-3	**Silver Spur Court** 981 Silver Spur Rd.	*Built/Partially Occupied*		**105**	**1**	**7**	**8**	**6**	**3**	**9**
	- Condominiums	18	DU							
RH-4	**Rolling Hills Villas** 901 Deep Valley Drive	*Built/Partially Occupied*		**209**	**3**	**4**	**7**	**7**	**6**	**13**
	- Senior Housing - Detached	41	DU	*143*	*2*	*3*	*5*	*4*	*3*	*7*
	- Retail	1.215	GLSF	*66*	*1*	*1*	*2*	*3*	*3*	*6*
RH-5	**Crest Road Building** 5883 Crest Road	*Approved*		**102**	**7**	**1**	**8**	**3**	**9**	**12**
	- Office	4,545	GSF	50	6	1	7	1	6	7
	- Retail	1,215	GLSF	52	1	0	1	2	3	5
RH-6	**Butcher Ranch** Palos Verdes Dr. N & Montecillo Dr.	*Proposed*		**105**	**2**	**6**	**8**	**7**	**4**	**11**
	- Single Family Detached Housing	11	DU							

TABLE 3

(Page 4 of 5)

RELATED PROJECTS LIST AND TRIP GENERATION (Cont)

NO.	DESCRIPTION	*STATUS* / SIZE	DAILY VOLS	AM PK HR VOLS In	AM PK HR VOLS Out	AM PK HR VOLS Total	PM PK HR VOLS In	PM PK HR VOLS Out	PM PK HR VOLS Total
City of Rolling Hills Estates (cont)									
RH 7	**Chandler Ranch/Rolling Hills Country Club**								
	26311 & 27000 Palos Verdes Dr. E.	*Proposed*	**1,486**	**24**	**42**	**66**	**152**	**70**	**222**
	- Single Family Detached Housing	114 DU							
	- Quality Restaurant	338 Seats							
	- Health/Fitness Club	7,150 GSF							
	- Tennis Courts	5 Courts							
	- New Social Club Members	100 Members							
	- (Existing Quarry Removed)								
RH 8	**627 Deep Valley Drive**	*Approved*	**636**	**-2**	**15**	**13**	**30**	**21**	**51**
	- Condominiums	58 DU							
	- Retail	5.810 GLSF							
	- 10% Pass-By								
	- 10% Internal Capture								
RH 9	**Brickwalk LLC Residential**								
	655-693 Deep Valley Drive &								
	924-950 Indian Peak Road	*Proposed*	**1,470**	**20**	**59**	**79**	**78**	**52**	**130**
	- Condominiums	148 DU	860	11	54	65	52	25	77
	- Retail	14,200 GLSF	610	9	5	14	26	27	53
RH 10	**827 Deep Valley Drive**	*Approved*	**93**	**1**	**6**	**7**	**5**	**3**	**8**
	- Senior Condominiums	16 DU							
RH 11	**Mediteranean Village**								
	927 Deep Valley Drive	*Approved*	**522**	**7**	**28**	**35**	**29**	**17**	**46**
	- Condominiums	75 DU	436	6	27	33	26	13	39
	- Retail	2,000 GLSF	86	1	1	2	3	4	7
RH 12	**Silverdes Medical Office**								
	828 Silver Spur Road	*Approved*	**942**	**55**	**14**	**69**	**26**	**73**	**99**
	- Medical Office	24,518 GSF	886	48	13	61	25	66	91
	- General Office	5,124 GSF	56	7	1	8	1	7	8
RH 13	**Continental Development**								
	627 Silver Spur Road	*Proposed*	**737**	**46**	**32**	**78**	**32**	**49**	**81**
	- Condominiums	70 DU	407	5	26	31	24	12	36
	- Commercial	30,000 GLSF	330	41	6	47	8	37	45

TABLE 3
(Page 5 of 5)

RELATED PROJECTS LIST AND TRIP GENERATION (Cont)

NO.	DESCRIPTION	STATUS / SIZE	DAILY VOLS	AM PK HR VOLS In	AM Out	AM Total	PM PK HR VOLS In	PM Out	PM Total
	City of Rolling Hills Estates (cont)								
RH 14	**Silver Center** 449 Silver Spur Road	*Approved*	**204**	**3**	**2**	**5**	**9**	**9**	**18**
	- Commercial	4,745 GLSF							
RH 15	**Promenade Peninsula** 550 Deep Valley Drive	*Proposed*	**1,097**	**15**	**31**	**46**	**53**	**43**	**96**
	- Condominiums	66 DU	383	5	24	29	23	11	34
	- Retail	16,620 GLSF	714	10	7	17	30	32	62
RH 16	**2901 Palos Verdes Drive North**	*Proposed*	**29**	**1**	**1**	**2**	**2**	**1**	**3**
	- Single Family Detached Housing	3 DU							
	City of Los Angeles								
LA 1	**Ponte Vista** 26900 S. Western Avenue	*Proposed*	**7,270**	**90**	**386**	**476**	**380**	**190**	**570**
	- Multi-Family	385 DU	2,256	29	140	169	134	66	200
	- Condominiums	630 DU	3,692	47	230	277	220	108	328
	- Senior Housing	300 DU	1,322	14	16	30	26	16	42
LA 2	**Seaport Condominiums** Western Avenue at Avenida Aprenda	*Built/Partially Occupied*	**813**	**11**	**51**	**62**	**49**	**24**	**73**
	- Condominiums	230 DU							

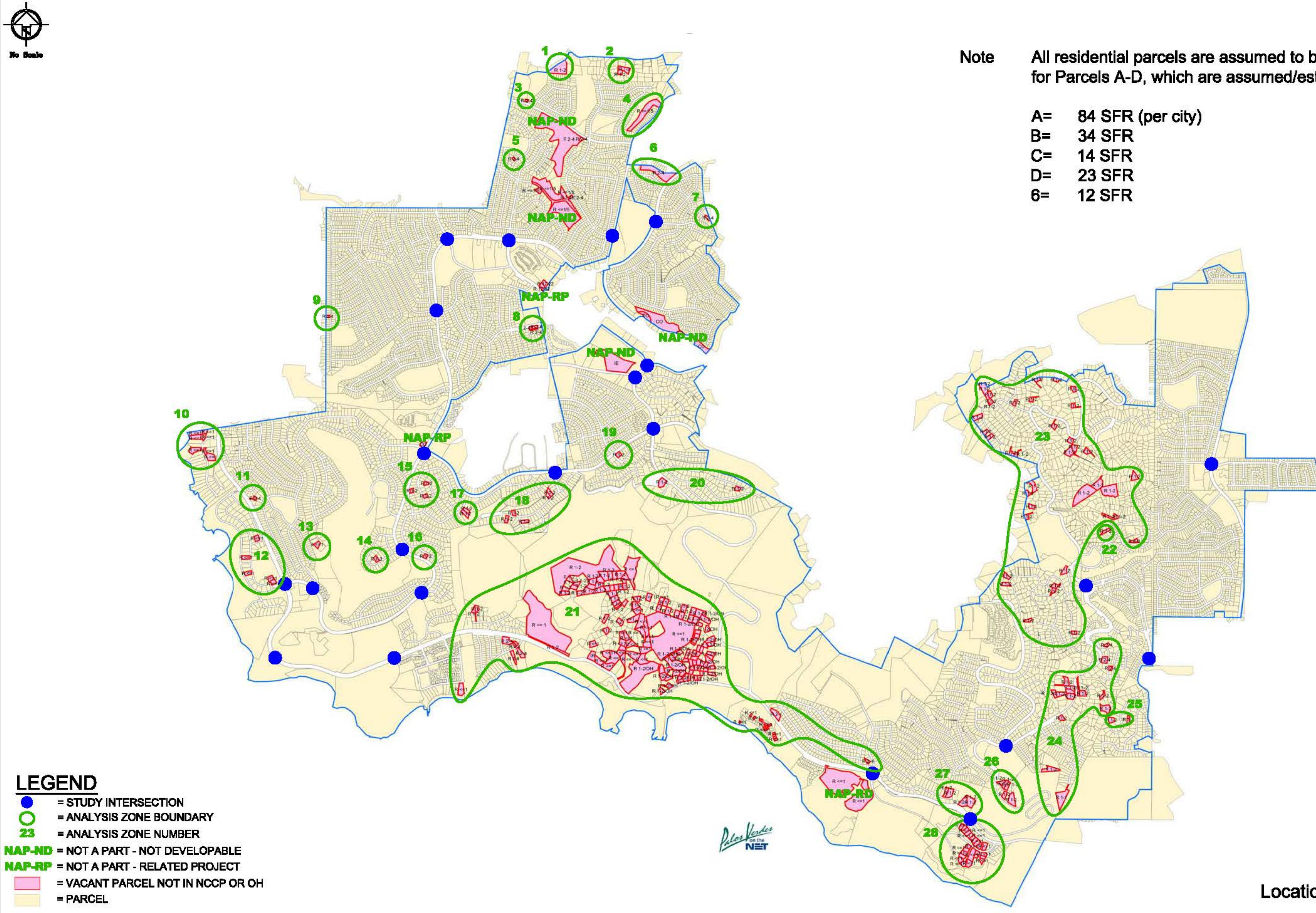
DU = Dwelling Units, VFP = Vehicle Fueling Positions, SF = Square Feet, GSF = Gross Square Feet, GLSF = Gross Leasable Square Feet, STU = Students

Source: City of Rancho Palos Verdes and the *Revised Draft Traffic Impact Study, The Annenberg Project at Lower Point Vicente*, prepared by Linscott, Law & Greenspan, Engineers, May 4, 2010 could be generated by the vacant parcels were also included in the analysis. Using the City's GIS system to identify the vacant parcels, City Planning staff developed a map of the vacant parcels with their land uses, and noted any parcels that are undevelopable due to the severe terrain or that are already included on the related projects list (see ***Exhibit 8***). Most parcels would be developed as individual single family residences. For the larger parcels, estimates were made of the number of homes that could reasonably be developed given the terrain and permitted housing density. The parcels were grouped into analysis zones and summarized in ***Table 6***. Over half of the parcels are in the Portuguese Bend area, which is currently of steep terrain and subject to landslides. Although these parcels cannot currently be developed, they were included in the analysis with the assumption that by 2035 a way of stabilizing the slopes to allow development would be discovered.

The trip generation rates for the vacant parcel land uses are from the Institute of Transportation Engineers (ITE) *Trip Generation*, 8th Edition and are listed in ***Table 7***. The trips anticipated to be generated by the vacant parcels are summarized in ***Table 8.*** The exhibits illustrating the trip distribution for each vacant parcel are included in ***Appendix F***. The AM and PM peak hour trips generated by the vacant parcels are illustrated on ***Exhibit G-2 in Appendix G***. The vacant parcels' daily trips are shown in previous ***Table 2.***

Note All residential parcels are assumed to be one dwelling unit, except for Parcels A-D, which are assumed/estimated to be as follows:

A= 84 SFR (per city)
B= 34 SFR
C= 14 SFR
D= 23 SFR
6= 12 SFR



Vacant Parcels
Location Map and Analysis Zones
EXHIBIT 8

TABLE 6

SUMMARY OF VACANT DEVELOPABLE PARCELS[1]

ANALYSIS ZONE	NUMBER OF VACANT PARCELS, BY LAND USE								TOTAL RESID	TOTAL PARCELS
	R <= 1/5	R <= 1	R 1-2	R 1-2/OH	R 2-4	R 4-6	IE	IR		
1			1						1	1
2			2						2	2
3					1				1	1
4	1								1	1
5					1				1	1
6					12				12	12
7					1				1	1
8					3				3	3
9					1				1	1
10		7							7	7
11					1				1	1
12		5							5	5
13		1							1	1
14			1						1	1
15			3						3	3
16			1						1	1
17			2						2	2
18			5						5	5
19			1						1	1
20			2						2	2
21		127	79	78	7			1	291	292
22			1						1	1
23			38			1			39	39
24			15		3				18	18
25			2						2	2
26			5				2		5	7
27			5						5	5
28		23							23	23
TOTAL	***1***	***163***	***163***	***78***	***30***	***1***	***2***	***1***	***436***	***439***

R <= 1/5 is Residential <= 1 DU/5Acres; R <= 1 is Residential <= 1 DU/Acre; R 1-2 is Residential 1-2 DU/Acre;
R 1-2/OH is Residential 1-2/ Open Space; R 2-4 is Residential 2-4 DU/Acre; R 4-6 is Residential 4-6 DU/Acre;
IE = Institutional - Educational; IR = Institutional - Religious; DU = Dwelling Unit

[1] Based on information provided by the City of Rancho Palos Verdes.

TABLE 7

VACANT PARCELS TRIP GENERATION RATES[1]

LAND USE	ITE CODE	UNITS[2]	DAILY	AM PEAK HOUR RATES			PM PEAK HOUR RATES		
				In	Out	Total	In	Out	Total
Single Family Residential	210	DU	9.57	0.19	0.56	0.75	0.64	0.37	1.01
Church	560	TSF	9.11	0.35	0.21	0.56	0.26	0.29	0.55
Day Care Center	565	STU	4.48	0.42	0.38	0.80	0.39	0.43	0.82

[1] Source: Institute of Transportation Engineers (ITE) *Trip Generation* , 8th Edition, 2008

[2] DU = Dwelling Unit; TSF = Thousand Square Feet; STU = Student

TABLE 8

VACANT PARCELS TRIP GENERATION[1]

ZONE	LAND USE	QUAN-TITY	UNITS	DAILY VOLS	AM PK HR VOLS In	AM PK HR VOLS Out	AM PK HR VOLS Total	PM PK HR VOLS In	PM PK HR VOLS Out	PM PK HR VOLS Total
1	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
2	Single Family Detached Housing	2	DU	19	0	1	1	1	1	2
3	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
4	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
5	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
6	Single Family Detached Housing	12	DU	115	2	7	9	8	4	12
7	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
8	Single Family Detached Housing	3	DU	29	1	2	3	2	1	3
9	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
10	Single Family Detached Housing	7	DU	67	1	4	5	4	3	7
11	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
12	Single Family Detached Housing	5	DU	48	1	3	4	3	2	5
13	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
14	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
15	Single Family Detached Housing	3	DU	29	1	2	3	2	1	3
16	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
17	Single Family Detached Housing	2	DU	19	0	1	1	1	1	2
18	Single Family Detached Housing	5	DU	48	1	3	4	3	2	5
19	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
20	Single Family Detached Housing	2	DU	19	0	1	1	1	1	2
21	Single Family Detached Housing	291	DU	2,785	55	163	218	186	108	294
	Institutional - Religious	30	TSF	273	11	6	17	8	9	17
	Subtotal			3,058	66	169	235	194	117	311
22	Single Family Detached Housing	1	DU	10	0	1	1	1	0	1
23	Single Family Detached Housing	39	DU	373	7	22	29	25	14	39
24	Single Family Detached Housing	18	DU	172	3	10	13	12	7	19
25	Single Family Detached Housing	2	DU	19	0	1	1	1	1	2
26	Single Family Detached Housing	5	DU	48	1	3	4	3	2	5
	Institutional - Education (2-Day Care)	10	STU	45	4	4	8	4	4	8
	Subtotal			93	5	7	12	7	6	13
27	Single Family Detached Housing	5	DU	48	1	3	4	3	2	5
28	Single Family Detached Housing	23	DU	220	4	13	17	15	9	24
TOTAL				***4,486***	***93***	***260***	***353***	***293***	***172***	***465***

DU = Dwelling Units, TSF = Thousand Square Feet, STU = Student

[1] Based on information regarding vacant developable parcels provided by the City of Rancho Palos Verdes.

IV. GENERAL PLAN BUILDOUT (2035) CONDITIONS

General Plan Buildout (2035) Conditions Intersection Analysis

General Plan Buildout (2035) conditions consist of the sum of the existing traffic volumes plus regional growth plus related project traffic volumes plus vacant parcels traffic volumes. The General Plan Buildout (2035) conditions AM and PM peak hour traffic volumes are shown on ***Exhibit 9***, and were used to estimate the intersection level of service for the study intersections.

It was assumed that planned intersection improvements, along with traffic signals at intersections where existing and projected 2035 warrants were met, would be constructed by 2035. These improvements, listed below and illustrated on ***Exhibit 10***, were included in the analysis.

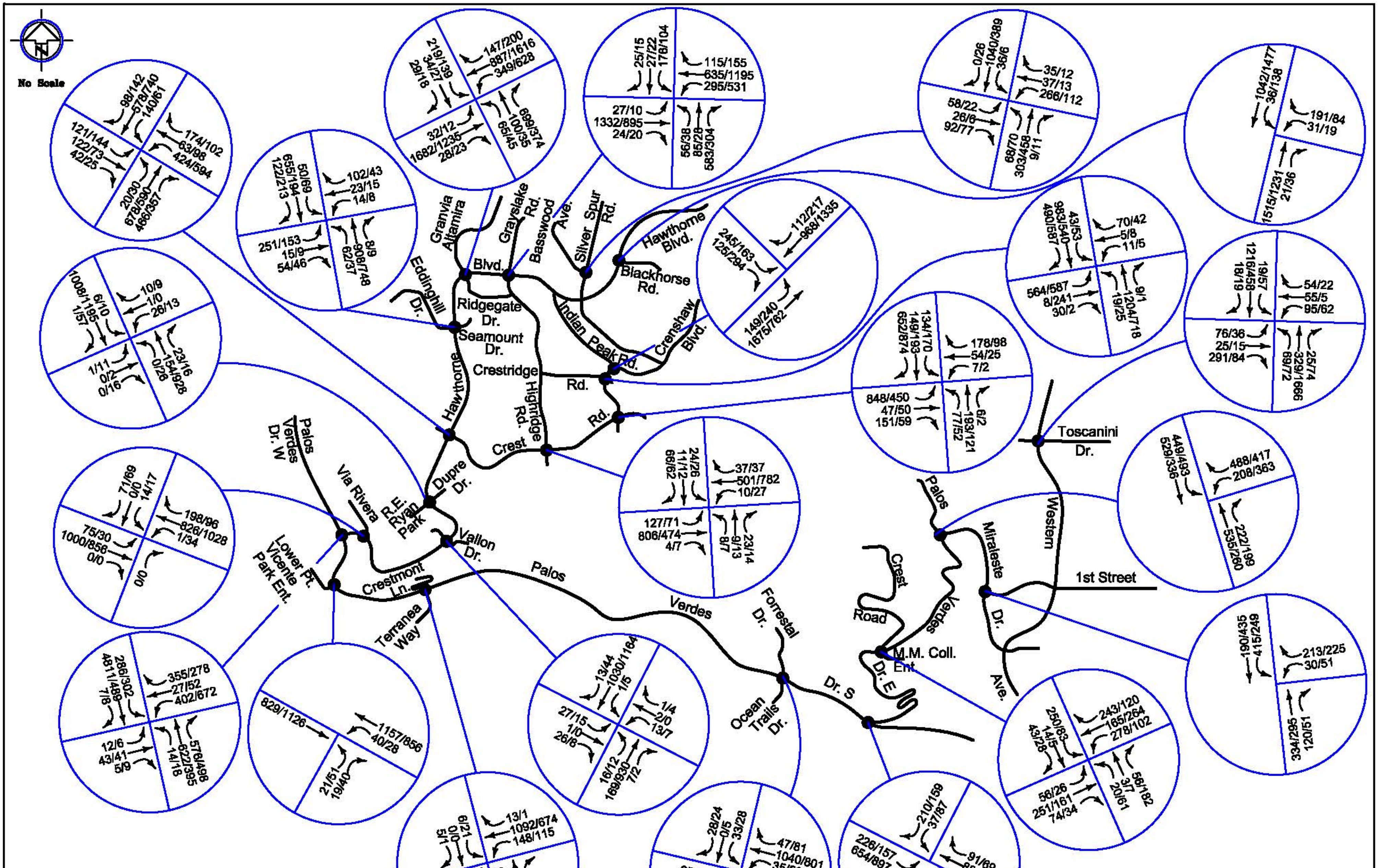
<u>Planned Intersection Improvements (by intersection number)</u>

2. Modifications to the intersection of Palos Verdes Drive West/Lower Point Vicente Park Entrance to realign the driveway to be more perpendicular to Palos Verdes Drive West and a traffic signal, to be funded by the City.

3. A traffic signal at the intersection of Hawthorne Boulevard/Via Rivera, a mitigation measure for The Annenberg Project at Lower Point Vicente. It was assumed that with the traffic signal, full turning movements would be allowed for vehicles exiting the parking lot on the south leg of the intersection.

16. An anticipated traffic signal or equivalent improvment at the intersection of Crenshaw Boulevard/Crest Road as the result of a traffic study of the intersection operations, to be funded by the City.

17. A traffic signal at the intersection of Forrestal Drive-Ocean Trails Drive/Palos Verdes Drive South, a mitigation measure for The Annenberg Project at Lower Point Vicente.



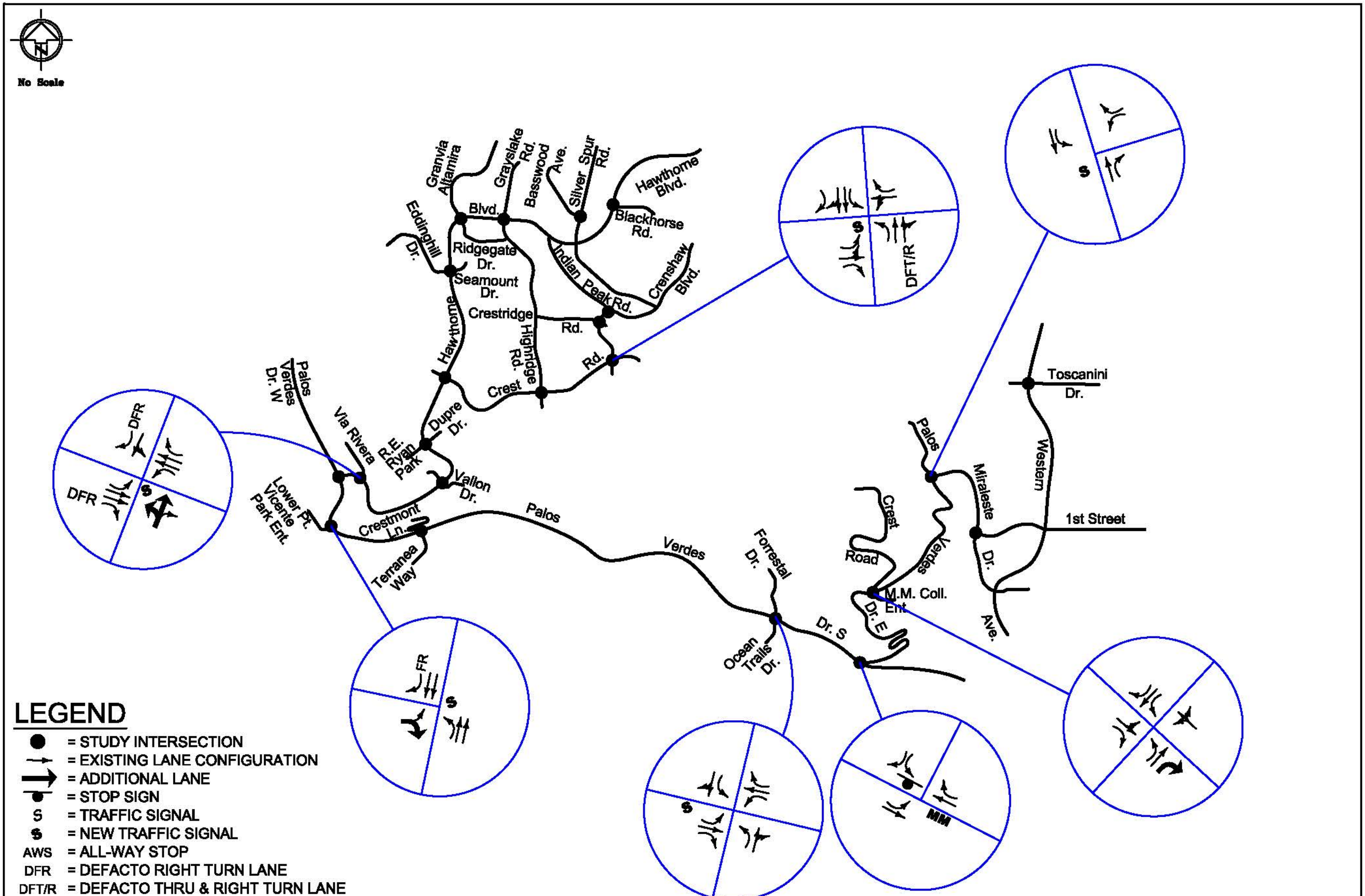
LEGEND

● = STUDY INTERSECTION

123/456 = AM/PM PEAK HOUR TRAFFIC VOLUMES

General Plan Buildout (2035)
AM/PM Peak Hour Volumes
EXHIBIT 9

WILLDAN Engineering



LEGEND

- ● = STUDY INTERSECTION
- = EXISTING LANE CONFIGURATION
- = ADDITIONAL LANE
- = STOP SIGN
- S = TRAFFIC SIGNAL
- **S** = NEW TRAFFIC SIGNAL
- AWS = ALL-WAY STOP
- DFR = DEFACTO RIGHT TURN LANE
- DFT/R = DEFACTO THRU & RIGHT TURN LANE
- FR = FREE RIGHT TURN
- **MM** = MODIFICATION OF RAISED MEDIAN ON PVDS FOR REFUGE AREA AND ACCELERATION LANES FOR SB LEFT TURNING VEHICLES
- **RTO** = ADDED RIGHT TURN OVERLAP

Planned Intersection Improvements
EXHIBIT 10

WILLDAN Engineering

18 A traffic signal at the intersection of Palos Verdes Drive East/Miraleste Drive, with right turn overlap phasing for westbound, mitigation measures for the Marymount College Expansion project.

20 A modification to the raised median at the intersection of Palos Verdes Drive East/Palos Verdes Drive South to provide a median refuge area for vehicles making left turns onto Palos Verdes Drive South from Palos Verdes Drive East, plus an acceleration lane for the same vehicles to more easily enter eastbound traffic on Palos Verdes Drive East, a mitigation measure for the Marymount College Expansion project.

The results of the intersection analysis are summarized in ***Table 9***. As shown in ***Table 9***, the five intersections listed below would operate at LOS E or F. The CMP intersection would operate at LOS D/C.

1. Palos Verdes Drive West/Hawthorne Boulevard
10. Grayslake Road-Highridge Road/Hawthorne Boulevard
14. Crenshaw Boulevard/Indian Peak Road
18. Palos Verdes Drive East/Miraleste Drive
20. Palos Verdes Drive East/Palos Verdes Drive South

Additional improvements were developed to bring the five intersections to acceptable levels of service, as listed below and shown on ***Exhibit 11***.

1. Add right turn overlap phasing for the northbound right turn at the intersection of Palos Verdes Drive West/Hawthorne Boulevard.

10. Construct a third through lane for eastbound and westbound Hawthorne Boulevard at Grayslake Road-Highridge Road. Also add right turn overlap phasing for the northbound right turn.

TABLE 9

INTERSECTION LEVEL OF SERVICE SUMMARY - GENERAL PLAN BUILDOUT (2035) CONDITIONS

	INTERSECTION	2035 GP BUILDOUT WITH PLANNED IMPROVEMENTS				2035 GP BUILDOUT WITH PLANNED IMPROVEMENTS			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS	ICU or Delay (sec)	LOS
1	Palos Verdes Dr. W/Hawthorne Bl.	0.947	**E**	0.909	**E**	0.706	C	0.705	C
2	Palos Verdes Dr. W/Lower Pt. Vicente Park Ent.	0.507	A	0.536	A				
3	Via Rivera/Hawthorne Bl.	0.488	A	0.519	A				
4	Hawthorne Bl./Eddinghill Dr. - Seamount Dr.	0.729	C	0.641	B				
5	Hawthorne Bl./Crest Rd.	0.855	D	0.821	D				
6	Hawthorne Bl./Dupre Dr. - R. E. Ryan Park Dwy.	0.522	A	0.569	A				
7	Hawthorne Bl./Vallon Dr.	0.528	A	0.521	A				
8	Crestmont Ln. - Terranea Wy./Palos Verdes Dr. S	0.535	A	0.652	B				
9	Gravania Altamira - Ridgegate Dr./Hawthorne Bl.	0.760	C	0.731	C				
10	Grayslake Rd. - Highridge Rd./Hawthorne Bl.	1.531	**F**	1.295	**F**	0.867	D	0.711	C
11	Highridge Rd./Crest Rd.	0.439	A	0.482	A				
12	Silver Spur Rd./Hawthorne Bl.	0.533	A	0.525	A				
13	Hawthorne Bl./Blackhorse Rd.	0.790	C	0.681	B				
14	Crenshaw Bl./Indian Peak Rd.	0.836	D	0.916	**E**	0.836	D	0.827	D
15	Crenshaw Bl./Crestridge Rd.	0.780	C	0.927	B				
16	Crenshaw Bl./Crest Rd.	0.680	B	0.578	A				
17	Forrestal Dr. - Ocean Trails Dr./Palos Verdes Dr. S	0.900	D	0.864	D				
18	Palos Verdes Dr. E/Miraleste Dr.	0.909	**E**	0.859	D	0.795	C	0.691	B
19	Palos Verdes Dr. E/Crest Rd. - Marymount Col. Dwy.	0.692	B	0.527	A				
20	Palos Verdes Dr. E/Palos Verdes Dr. E	341.9	**F**	771.6	**F**	0.883	D	0.805	D
21	Miraleste Dr./1st St.	27.1	D	26.0	D				
22	Western Ave./Toscanini Dr.	0.822	D	0.771	C				

ICU = Intersection Capacity Utilization; LOS = Level of Service;

Related Intersection Improvements

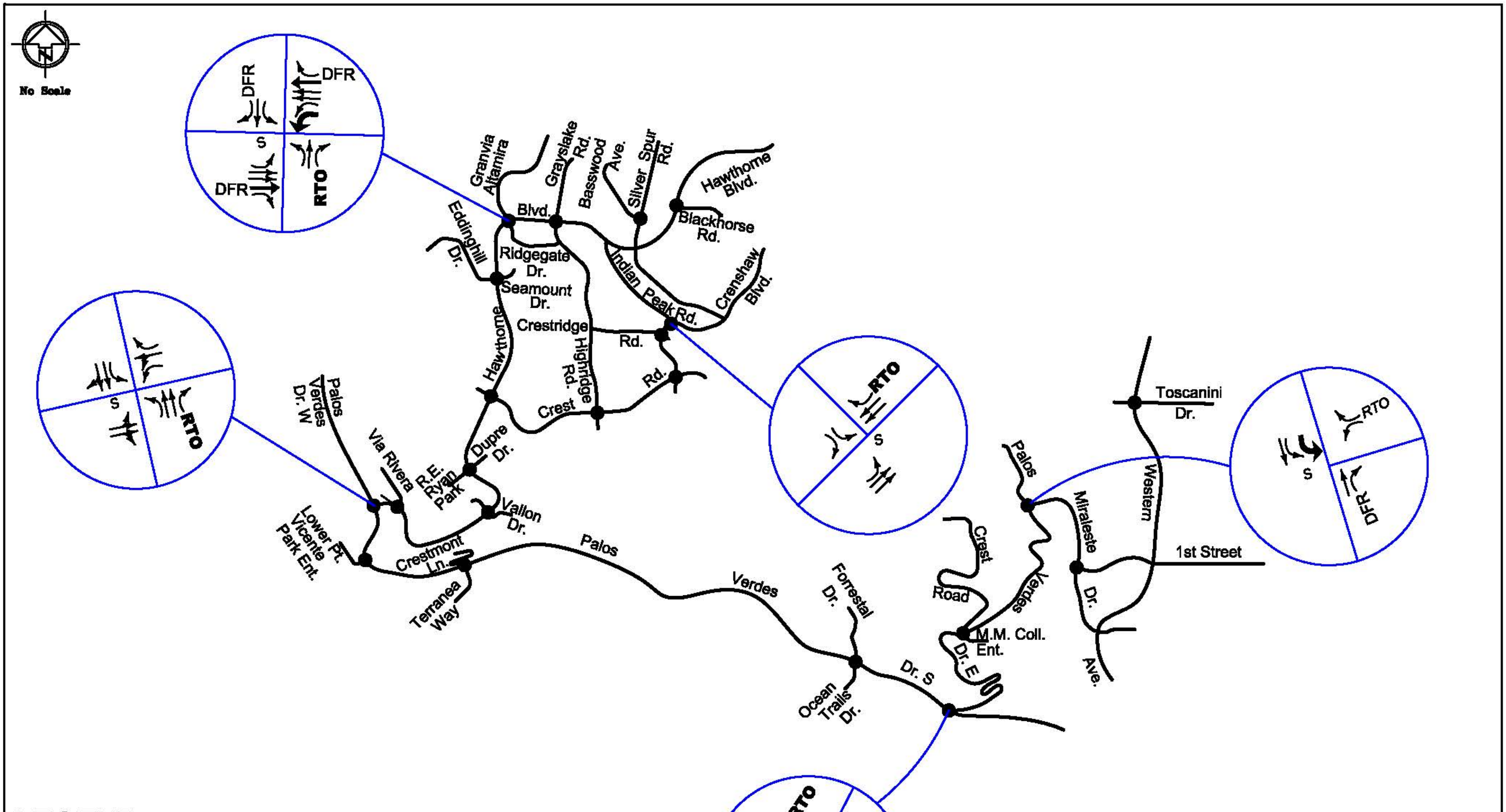
1 Add Right Turn Overlap Phasing to NB right turn lane on Palos Verdes Drive West

10 Add Right Turn Overlap Phasing to NB right turn lane on Highridge Road.

14 Add Right Turn Overlap Phasing to EB right turn lane on Indian Peak Road

18 Construct a second southbound left turn lane on Palos Verdes Drive East and add Right Turn Overlap Phasing to WB right turn lane on Miraleste Drive

20 Install a traffic signal at the intersection with Right Turn Overlap Phasing for the SB right turn lane



LEGEND

- = STUDY INTERSECTION
- = EXISTING LANE CONFIGURATION
- = ADDITIONAL LANE
- = STOP SIGN
- S = EXISTING/PLANNED TRAFFIC SIGNAL
- AWS = ALL WAY STOP
- DFR = DEFACTO RIGHT TURN LANE
- DFT/R = DEFACTO THRU & RIGHT TURN LANE
- *RTO* = PLANNED RIGHT TURN OVERLAP PHASING
- **RTO** = ADDED RIGHT TURN OVERLAP PHASING
- **S** = NEW TRAFFIC SIGNAL

General Plan Buildout (2035)
Additional Required Intersection Improvements
EXHIBIT 11

14. Add right turn overlap phasing for the southbound right turn at the intersection of Crenshaw Boulevard/Indian Peak Road.

18. Construct a second southbound left turn lane at the intersection of Palos Verdes Drive East/Miraleste Drive.

20. Signalize the intersection of Palos Verdes Drive East/Palos Verdes Drive South and add right turn overlap phasing for the southbound right turn.

The levels of service as a result of the additional improvements are shown in ***Table 9***. The supporting ICU and HCM intersection analyses worksheets can be referenced in ***Appendix G.***

General Plan Buildout (2035) Conditions Roadway Segment Analysis

For General Plan Buildout conditions, daily traffic volumes are used to help determine the number of through lanes that will be needed for major circulation system roadways to meet the forecast traffic demand. The estimated daily traffic volumes for General Plan Buildout (2035) conditions are shown in previous ***Table 2***.

Planned Roadway Improvements

The City is planning several roadway improvements before 2035, particularly concerning Palos Verdes Drive East. The one that would affect the capacity of a study intersection is the reduction of through lanes on Palos Verdes Drive East from four lanes to two lanes with a median barrier, in the vicinity of Crest Road. It results in the new roadway classification of 2 Lane Divided, which was used in the General Plan Buildout analysis.

Roadway Segment Level of Service Analysis

The results of the roadway segment level of service analysis for General Plan Buildout (2035) conditions are summarized in ***Table 10***. ***Table 10*** shows that 10 of the segments are expected to continue to operate at LOS A, seven would operate at LOS B, two at LOS

TABLE 10

ROADWAY SEGMENTS LEVEL OF SERVICE SUMMARY
GENERAL PLAN BUILDOUT (2035) CONDITIONS WITH POSSIBLE IMPROVEMENTS[1]

STREET	SEGMENT	POSSIBLE LANE CONFIG	EXISTING DAILY VOLS (2010)	LEVEL OF SERVICE (LOS)[2]
Hawthorne Blvd.	North City Limit - Blackhorse Rd.	6D	36,897	B
	Blackhorse Rd. - Indian Peak Rd.	6D	34,712	B
	Indian Peak Rd. - Grayslake Rd./Highridge Rd.	8D	52,748	C
	Grayslake Rd./Highridge Rd. - Granvia Altamira/Ridgegate Dr.	6D	37,295	B
Miraleste Dr.	Palos Verdes Dr. E - 1st St.	4D	19,050	A
Palos Verdes Dr. E	North City Limit - Miraleste Dr.	4U	19,040	C
	Miraleste Dr. - North of Crest Dr.	2D	14,478	C

[1] Configuration required to achieve acceptable LOS of D or better.

[2] Level of Service based on the Road Capacity Values listed below, from the Orange County Transportation Authority, except for 2 Lanes Divided, which was not included in the table. Values for 2 Lanes Divided were calculated as one-half of the values for 4 Lanes Divided, based on the relationship of the values of 2 Lanes Undivided to 4 Lanes Undivided.

	LEVEL OF SERVICE					
TYPE OF ARTERIAL	A	B	C	D	E	F
8 Lanes Divided (8D)	45000	52500	60000	67500	75000	--
6 Lanes Divided (6D)	33900	39400	45000	50600	56300	--
4 Lanes Divided (4D)	22500	26300	30000	33800	37500	--
4 Lanes Undivided (UD)	15000	17500	20000	22500	25000	--
2 Lanes Divided (2D)	11300	13200	15000	16900	18800	--
2 Lanes Undivided (2U)	7500	8800	10000	11300	12500	--

Note: The Road Capacity Values are the maximum Average Daily Traffic for the given Level of Service.

C, three at LOS D, three at LOS E and four at LOS F. The segments that would operate at unacceptable LOS E are as follows:

- Hawthorne Boulevard – North City Limit to Blackhorse Road (Existing = LOS C)
- Hawthorne Boulevard – Blackhorse Road to Indian Peak Road (Existing = LOS B)
- Hawthorne Boulevard – Grayslake Road/Highridge Road to Granvia Altamira/ Ridgegate Drive (Existing = LOS C)

The segments that would operate at unacceptable LOS F are as follows:

- Hawthorne Boulevard – Indian Peak Road to Grayslake Road/Highridge Road (Existing = LOS F)
- Miraleste Drive – Palos Verdes Drive East to 1st Street (Existing = LOS D)
- Palos Verdes Drive East – North City Limit to Miraleste Drive (Existing = LOS F)
- Palos Verdes Drive East – Miraleste Drive to North of Crest Drive (Existing = LOS D)

Table 10 shows the lane improvements that would be needed for the levels of service of all roadway segments to meet the acceptable standard.

Daily traffic volumes have traditionally been used to determine levels of service for long-range or General Plan level conditions since transportation modeling of long-range conditions can only be approximated. In more recent years, however, transportation modeling has advanced, and intersection modeling of future conditions is typically used to determine future intersection improvements. Since, intersection capacity, rather than roadway segment capacity, usually determines the level of service of the roadways, the current practice in southern California is to primarily use the lane requirements established by the intersection analysis to determine future roadway needs.

Since one of the intersection improvements would require the possible roadway segment lane improvements shown in ***Table 10***, the third through lane in each direction at the intersection of Grayslake Road-Highridge Road/Hawthorne Boulevard, it is recommended that the adjacent segments of Indian Peak Road to Grayslake Road/Highridge Road and Grayslake Road/Highridge Road to Granvia Altamira be upgraded to the 6 Lane Divided designation. Although the segment of Indian Peak Road to Grayslake Road/Highridge Road would be projected to operate at unacceptable LOS E with the upgrade, the intersection analysis indicates that the six lanes should be sufficient. It is recommended that none of the other possible improvements in ***Table 10*** be implemented. The roadway segments should operate at acceptable levels of service without additional roadway segment improvements.

General Plan Buildout (2035) Conditions Traffic Signal Warrant Analysis

A traffic signal warrant analysis was conducted for five unsignalized study intersections under General Plan Buildout (2035) conditions. The five intersections did not meet the traffic signal warrants for existing conditions.

The *California Manual of Uniform Traffic Control Devices* (CA MUTCD) Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form), to be used for new intersections or locations where it is not reasonable to count (such as future conditions), was used for General Plan Buildout (2035) conditions. The signal warrant analysis was based on the estimated daily traffic volumes for 2035 General Plan Buildout conditions. The analysis showed that the following four intersections meet this warrant:

- Hawthorne Boulevard (EW) and Via Rivera (NS)
- Palos Verdes Drive South (EW) and Forrestal Dr./Ocean Trails Dr. (NS)
- Palos Verdes Drive South (EW) and Palos Verdes Drive East (NS)
- Miraleste Drive (NS) and 1st Street (EW)

The traffic signal warrant worksheets are included in ***Appendix H***. The remaining intersection of Palos Verdes Drive South and Lower Point Vicente Park Entrance did not meet the traffic signal warrant.

V. ALTERNATE TRANSPORTATION MODES

Public Transit

Public bus transit services that currently operate in the City of Rancho Palos Verdes and serve the Palos Verdes Peninsula include Palos Verdes Transit, Los Angeles County Metro, City of Los Angeles Department of Transportation's Commuter Express and Beach Cities Transit. The bus routes, which service every major street in Rancho Palos Verdes, are illustrated on ***Exhibit 12***.

Trails (Bikeways, Pedestrian and Equestrian)

Conceptual Trails Plan and Conceptual Bikeways Plan

In 1993, the City Council approved the revised *Conceptual Trails Plan* for the City of Rancho Palos Verdes, which primarily focuses on equestrian and pedestrian trails. The *Conceptual Trails Plan* divides the City into five geographical sections although many trails traverse more than one section. The section maps, which illustrate the trails, are included in ***Appendix I***. The *Conceptual Bikeways Plan*, which was adopted in 1990 and revised in1996, complements the *Conceptual Trails Plan*. ***Exhibit 13*** illustrates the bikeway network developed in the *Conceptual Bikeways Plan*.

Preserve Trails Plan

In April 2008, the City Council adopted the *Preserve Trails Plan* (PTP) for the Palos Verdes Nature Preserve, which consists of 10 reserves. The *Preserve Trails Plan*, which was the initial and largest component of the *Public Use Master Plan* (PUMP), identifies the trail routes and trail uses in the Nature Preserve. The map of the Palos Verdes Nature Preserve, showing each reserve, and maps of the reserves are included in ***Appendix I***.

Rancho Palos Verdes Coast Vision Plan

The City's latest effort to enhance access to the City's natural areas is the Coast Vision Plan, which provides a vision, goals, concept designs and design guidance to be used to "cohesively link the key open space properties and public lands along the coast, including

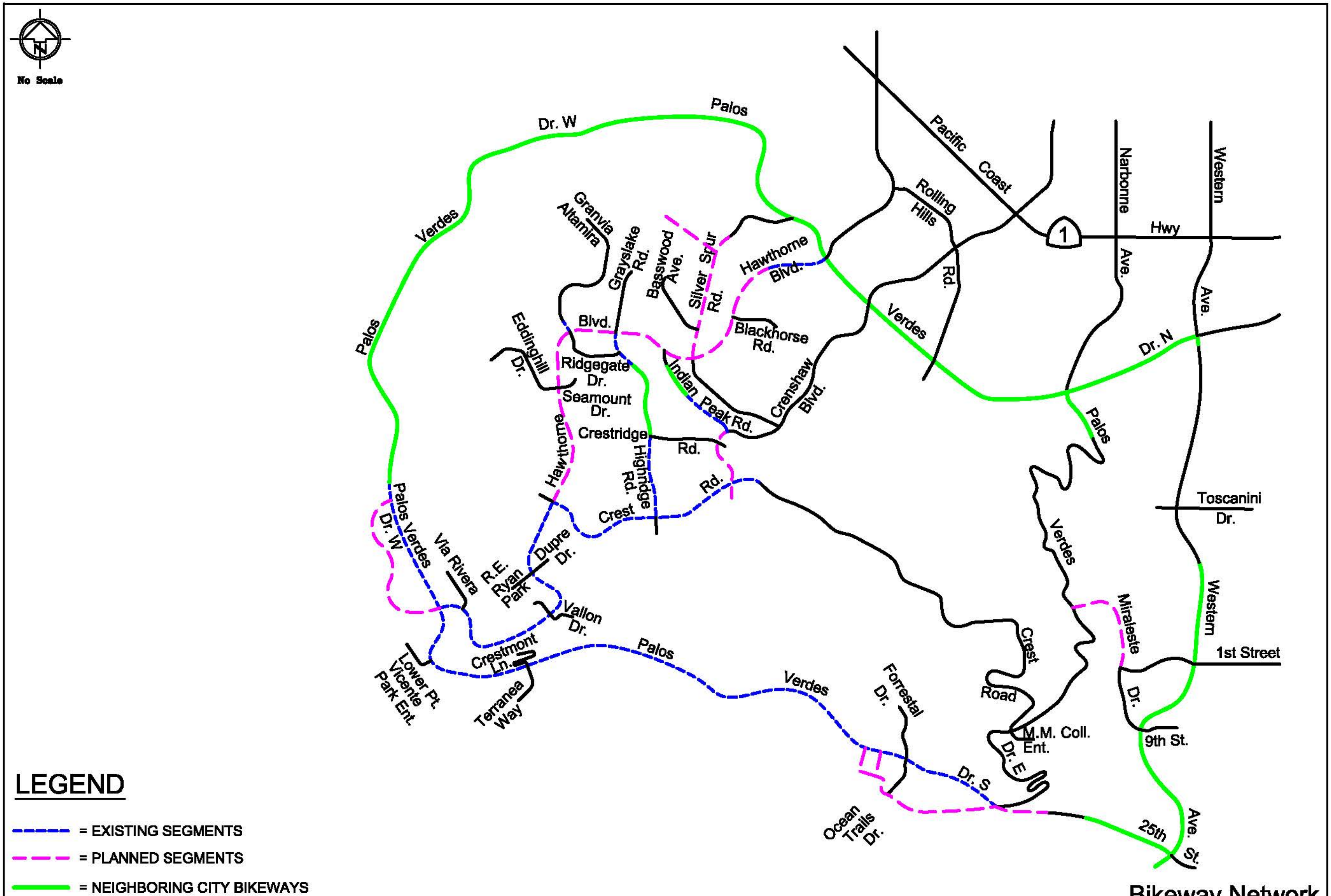
No Scale

Existing Public Transit Routes

EXHIBIT 12

Source: Metropolitan Transit Authority (Metro)

WILLDAN Engineering



Bikeway Network
EXHIBIT 13

Source: City of Rancho Palos Verdes Conceptual Bikeway Plan, 1996 the NCCP properties located within the Palos Verdes Nature Preserve. The public trails that have been incorporated into the Coast Vision Plan are shown on ***Exhibit 14***, from the Plan.

SOURCE: THE RANCHO PALOS VERDES *COAST VISION PLAN*, AUGUST 2008 DRAFT

Public Trails
EXHIBIT 14

PUBLIC CORRESPONDENCE

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

July 29, 2015

So Kim, Senior Planner
City of Rancho Palos Verdes
Community Development Department
30940 Hawthorne Boulevard
Rancho Palos Verdes, CA 90275

Dear Ms. Kim:

INITIAL STUDY AND NEGATIVE DECLARATION, "RANCHO PALOS VERDES GENERAL PLAN UPDATE", UPDATES OF THE EXISITING 1975 GENERAL PLAN THAT REFLECTS THE CURRENT STATUS OF DEVELOPMENT IN THE CITY, CURRENT ECONOMIC AND DEMOGRAPHIC DATA, AND INCORPORATES PREVIOUS CITY COUNCIL LAND USE DECISIONS, RANCHO PALOS VERDES (FFER 201500141)

The Initial Study and Negative Declaration has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. We have no comments at this time.

LAND DEVELOPMENT UNIT:

1. This project does not propose construction of structures or any other improvements at this time. Therefore, until actual construction is proposed the project will not have a significant impact to the Fire Department's Land Development Unit.

2. Should any questions arise regarding subdivision, water systems, or access, please contact the County of Los Angeles Fire Department's Land Development Unit's Inspector Nancy Rodeheffer at (323) 890-4243.

3. The County of Los Angeles Fire Department's Land Development Unit appreciates the opportunity to comment on this project.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

1. The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance.

2. The County of Los Angeles Fire Department's Forestry Division has no further comments regarding the General Plan updates.

HEALTH HAZARDOUS MATERIALS DIVISION:

1. The Health Hazardous Materials Division (HHMD) of the Los Angeles County Fire Department has no comment or objection to the project at this time.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

KEVIN T. JOHNSON, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

KTJ:ad

So Kim

From: Joel Rojas
Sent: Thursday, June 25, 2015 10:08 AM
To: So Kim
Subject: FW: FW: 6/23/15 Agenda: Update of General Plan and Land Use Map

Follow Up Flag: Follow up
Flag Status: Flagged

From: SunshineRPV@aol.com [mailto:SunshineRPV@aol.com]
Sent: Thursday, June 25, 2015 9:39 AM
To: leneebilski@hotmail.com
Cc: PC; dlfriedson@gmail.com
Subject: Re: FW: 6/23/15 Agenda: Update of General Plan and Land Use Map

Hi Lenee,

I spoke with Gordon Leon instead of So Kim to find out what happened last night. He said there were no public speakers so all that time was taken up by Staff talking about each of the proposed changes. His opinion... This is a bloated, bureaucratic nightmare. The Planning Commission did not "approve" anything. Staff is to tidy their work and bring it back to the Commission in August. I am going to keep pushing the City Council to stop the train wreck as in change the Planning Commission's "marching orders".

I see more than three errors in So Kim's revised texts. More important is that I see a lack of consistency in the level of detail which is appropriate for a General Plan. First off is references to subsequent and more detailed Plans. The General Plan "update" process is so onerous that Staff has rarely done it. A log of City Council approved Amendments does not inform anyone who actually turns to the General Plan for current information. Even though revising the text and figures is now a simple matter of word-processing and posting to the City's web site, **I'm recommending that only data which is not likely to change be included in the General Plan**. The City's GOALS and their corresponding POLICIES should be sufficient for our local directives.

Are you aware that the State of California has a Staff person who periodically issues an advisory about updating General Plans? These advisories are not only not reviewed by the State Legislature, they are based on "boilerplate" as provided to all States by the International Council on Local Environmental Issues (ICLEI). Although the young City of Rancho Palos Verdes was very environmentally sensitive, do notice the draft General Plan "update" adds a lot of subtle changes to the text which are slanted in favor of the United Nation's Agenda for the 21st Century (Agenda 21). When implemented, they cause a reduction in private property rights. This is another reason to take the "bloat" out of the document.

Did So Kim ever explain to you why the history of the Peninsula prior to the RPV incorporation needed to be reworded? History is history. Do you see a "tilt" in the proposed text?

Keep reading and sharing comments. I'm going to focus on the Transportation Element.

...S

In a message dated 6/24/2015 1:39:30 P.M. Pacific Daylight Time, leneebilski@hotmail.com writes:

Wow! I was pleasantly surprised to read that the city staff agreed to make most changes I suggested! This is momentous! However, there are 3 errors in the red text below. Too bad. See if you can find them.
When I alerted So Kim to these mistakes, she said she would have to announce the 3 corrections at the PC meeting since the email had already been sent to the Commissioners.
I did not attend the meeting last night. Looking forward to watching the tape on TV. Video should also be available on the RPV website.
Ever vigilant,
Lenée

From: SoK@rpvca.gov
To: leneebilski@hotmail.com
CC: PC@rpvca.gov; JoelR@rpvca.gov; AraM@rpvca.gov
Subject: RE: 6/23/15 Agenda: Update of General Plan and Land Use Map
Date: Tue, 23 Jun 2015 21:09:33 +0000

Dear Lenée,

Thank you for your email. In reviewing your comments, we decided to move forward with most of your suggestions, with exception to a few. These will be presented to the Commissioners as proposed changes.

Explanations are detailed below in red text. This email will be copied to the Commissioners and will be distributed as late correspondence at tonight's hearing.

Sincerely,

So Kim

Senior Planner

City of Rancho Palos Verdes

www.rpvca.gov

(310) 544-5222

WE ARE IN PROCESS OF SWITCHING TO A NEW WEB AND EMAIL DOMAIN. IF YOU HAVE ME IN YOUR CONTACTS, PLEASE CHANGE MY EMAIL FROM SOK@RPV.COM TO SOK@RPVCA.GOV.

From: Lenée Bilski [mailto:leneebilski@hotmail.com]
Sent: Tuesday, June 23, 2015 8:47 AM
To: PC; Carla Morreale

Cc: ldb910@juno.com; jim_knight@juno.com
Subject: 6/23/15 Agenda: Update of General Plan and Land Use Map

June 22, 2015

To the Rancho Palos Verdes Planning Commission

Re: RPV General Plan and Land Use Map Update

The original award-winning RPV General Plan was well written and care should be taken not to tamper with it without good cause.

The City Council directive was to <u>update</u> the General Plan and Land Use Map. This draft is more than an update as parts of the original text were deleted unnecessarily and some parts were added without including any new information. Just rewritten in places.

I know that over many years city staff and different Planning Commissioners have labored long and hard over this document. I appreciate their efforts.

I am grateful to Planner So Kim as well as former Director Greg Pfost for meeting with me and other residents to answer questions about this Draft and to explain things. I understand that most things in the Draft can only be changed by you, the Planning Commissioners, before it is presented to the City Council.

"Update" = to change (something) by including the most recent information; to give (someone) the most recent information about something; to bring up to date ref. Merriam-Webster

In this case, that means what is obsolete should be removed, new items approved by the CC should be added.

Since August 27, 2013, "the status of projects identified in the Commission approved General Plan text have been changed, economic and demographic data have changed, and the City Council has made decisions that require additional updates to some of the previously approved text. Accordingly, Staff has made minor changes to the text." And some major.

In reading just partway through the Draft text, certain things jumped out at me. On the Land Use map and illustrations I found the colors confusing, but was told by Staff that they will be improved. I made some minor changes, including the color scheme, which will be presented in detail at tonight's meeting. The revised land use map will also be distributed to the Commissioners as late correspondence.

Here are some corrections, suggestions and comments on some of the Draft text which I offer for your consideration and approval to improve the Draft:

Introduction

pg. I-1 Palos Verdes Peninsula

The first sentence of the second paragraph is an incomplete sentence as there is no comparison at the end - there is a "from" followed by a list of past history, but no "to" something at the end. I would suggest ending with the words "to the present developed (or incorporated) cities." or similar words.

In the next sentence I would suggest adding "with" after "residential use,"

with the Palos Verdes Project . . . .

Staff agrees and propose that "to" be added to the first sentence. See below.

The Peninsula's history is equally interesting, from the Native American Tongva people who migrated to the area, the Spanish explorers and missionaries, cattle ranchers of the Rancho de los Palos Verdes land grant and ***to*** *the whalers of the late 19th century.*

pg. I-3 In the sentence starting "Today, as a result" ... I would suggest changing the would "offer" to "preserve" the magnificent views; also correct the tense from " has remains" to " has remained". Staff proposes that the word "offer" stay and the "has remains" be replaced with "remains as". The point of this sentence was not to function as a policy or a goal, rather just a statement that the City has nice views. Referenced sentence is in italics below.

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

The current G.P. starting with "An additional step" in section I-3 has strike-out for two sentences of the city's history . I would ask to keep them unless incorrect, then continue with the next "Not unlike . . .These sentences were intentionally removed because they are in reference to the drafting of the original 1975 General Plan. Thus, Staff proposes no change.

I would suggest revising the second sentence in the second paragraph to read

"Conserving open space provides opportunities for public outdoor recreation" view-shed protection" etc, Staff agrees and proposes this change. Referenced sentence is in italics below.

*Conserving open space provides opportunities ~~to the public~~ for **public** outdoor recreation…*

pg. CO-26

Ocean Resources refers to the shoreline being utilized for sport and commercial fishing. Is that still possible? Where? I thought the State Dept. of Fish and Wildlife now prohibits fishing.

Beginning in January 2012, the ocean waters along several miles of RPV coastline became State Marine Conservation Areas (SMCA). While NO fishing activity is permitted in Point Vicente SMCA, recreational and commercial fishing of certain species are allowed within the Abalone Cove SMCA. More specifically, recreational fishing of pelagic finfish, Pacific bonito, and white sea bass (spearfishing) and market squid (hand-held dip net) and commercial fishing of coastal pelagic species and Pacific bonito (by round haul net) and swordfish (by harpoon). Thus, Staff proposes no changes to this text.

pg. CO-30 (page CO-31) Second paragraph second sentence: change "may" to "could" to match the first sentence: "in this manner the City could regulate. . . " Staff agrees and proposes this change. Referenced sentence is in italics below.

*In this manner the City ~~may~~ **could** regulate and control uses within this area.*

Also, for clarification, since the rest of the paragraph is about the City of Palos Verdes Estates, the final sentence needs to identify which city, PVE or RPV, as "The City, by creating this type of action, would then be responsible . . ." Staff agrees and proposes this change. Referenced sentence is in italics below.

*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.*

pg. CO-43 Paragraph starting "Finally, it is worth noting . . ." please change Marymount College to "Marymount California University" to reflect

recent change,

and possibly add if appropriate "The Salvation Army College for Officer Training and Peninsula Racquet Club" - since membership in the Racquet Club is open to the public. Staff agrees and proposes this change. Referenced sentence is in italics below.

*Finally, it is worth noting…one high school under the jurisdiction of the School District, ~~and~~ Marymount **California University** ~~College~~, **and The Salvation Army College.***

pg. CO-46 First paragraph, second sentence: "was given to the City by the federal government - change "from" to "by" (acquired from, given by) Staff agrees and proposes this change. Referenced sentence is in italics below.

*The remainder of the site (comprised of 65.12 acres) was given to the City ~~from~~ **by** the federal government…*

In the 4th paragraph, please add the date of the Coast Vision Plan - Sept. 2008. Staff agrees and proposes this change. Referenced sentence is in italics below.

Along these lines, the City's Coast Vision Plan ***(adopted September 2008)****...*

pg. CO-55 it is my understanding that the Coast Vision Plan is only a "conceptual planning guide" that ties many facilities together. . (first sentence) , not a binding document. Staff agrees and proposes to omit the first sentence in its entirety as it doesn't make sense anyway. Referenced sentence is in italics below.

*~~The Coast Vision Plan is not a specific recreational facility but represents a planning document that ties many facilities together and as such should be noted. Specifically, a~~****Adopted*** *on September 2, 2008, the Coast Vision Plan represents over two years of planning to create an informational planning document fo the City's coastal areas...*

In the last sentence of that paragraph, I suggest changing "established" to "presents" to reflect that it serves as a guideline rather than a set plan. Staff agrees and proposes this change. Referenced sentence is in italics below.

The Plan ~~established~~ **presents** a vision, goals, concept designs...

Visual Resources

Figure 14 needs to be compared to the RPV Coastal Specific Plan figure 26 and edited to include views (not depicted on Fig. 14) of Malibu, and Pt. Fermin from the arterials Palos Verdes Drives West and South. The two document figures should (must ?) agree. The General Plan and its related graphics is meant to be "general" in nature while more specific documents, such as the Coastal Specific Plan and its related graphics are meant to be more detailed. However, Staff agrees and proposes that two "views" be added to the map (one towards Catalina from PVDW in front of the Seaview Tract & one towards Malibu from PVDS between PVIC and Pt Vicente) and a notation be added on the legend after "views" as shown below.

Views ***(Refer to the Coastal Specific Plan for the extent of visual corridors).***

pg. VR-3 Natural Visual Resources should include naming the 3 natural land forms (the two promontories and the headland) which are so unique to RPV and very precious visual resources: Portuguese Point and Inspiration Point, and the Headland Pt. Vicente. Just as specific Man-made resources are named in the next section (pg. VR-4), so should these 3 specific natural resources be named in this section. Staff agrees and proposes the following change.

Shoreline: The irregular shoreline configuration is a prominent feature along the Palos Verdes Peninsula, ***including Portuguese Point, Inspiration Point and Point Vicente****...*

pg. VR-4 Trump National Residential Tracts (plural) as there are two. Staff agrees and proposes this change. Referenced sentence is in italics below.

*Some of the more visible residential...Trump National Residential Tract****s****....*

pg. VR-5 top sentence punctuation correction: "non view-obstructing" instead of "non-view" which has a different meaning Staff agrees and proposes this change. Referenced sentence is in italics below.

… the mature trees of Miraleste, non-view obstructing…

pg. VR-6 Developed Areas to be Restored - Please reconsider!!!

Why is Crest Rd. between Crenshaw and Hawthorne referred to as "restored to enhance and preserve the views and vistas" when most of this area is currently overgrown with foliage which obstructs the public's view of the ocean & Catalina from this road??? Maybe it was when the update was started about 10 years ago. It's different now. As noted in the next section, Visual Corridors to be Preserved (pg. VR-7), "there is a continuing need to manage the foliage." I agree. Please revise the reference to Crest Rd. as being in need of restoration of the views along with Western Ave. and Hawthorne Blvd. or completely omit the reference to Crest Rd. Staff agrees that in some areas foliage has overgrown in the past. However, Staff worked with the foliage owners and had them trimmed time to time to restore views. Once they are in compliance with City's guidelines (whether it be part of a tract condition or other similar regulations), Staff considers the trimming to be adequate for the purposes of preserving/enhancing views. Should the same or different foliage become view obstructing, Staff will again work with the foliage owners to restore/enhance views along Crest Road. Thus, Staff proposes to change to this text.

I only had time to review the Introduction and these two of the eight elements - 80 out of some 289 pages in the Draft.

Thank you for your time and consideration of my suggestions and corrections for these sections of the update of the RPV General Plan and the illustrated figures.

Sincerely,

Lenée Bilski

So Kim

From: Joel Rojas
Sent: Tuesday, June 30, 2015 4:59 PM
To: So Kim
Subject: FW: City Plan updates beyond tonight

Follow Up Flag: Follow up
Flag Status: Flagged

From: SunshineRPV@aol.com [mailto:SunshineRPV@aol.com]
Sent: Tuesday, June 30, 2015 2:52 PM
To: CC; PC
Subject: City Plan updates beyond tonight

Please don't get bogged down in the minutia. Your directions to Staff should be focused creating documents which somebody will actually reference in order to preserve and improve the special things we have here in RPV.

Don't wait until you have to review the whole, bloated, disgusting draft update of the General Plan. There are thousands of errors, omissions and redundancies. The real point is that Staff doesn't pay any attention to the Plans we have. Why make mo bigga ones. ...S 310-377-8761

So Kim

From: Joel Rojas
Sent: Tuesday, June 30, 2015 5:02 PM
To: Paul Christman
Cc: So Kim
Subject: RE: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

Follow Up Flag: Follow up
Flag Status: Flagged

Thank you.

So—I will respond back to Bill and Gordon but please note this under additional information of the forthcoming Aug 11 PC staff report. Thanks
Joel

From: Paul Christman
Sent: Tuesday, June 30, 2015 2:37 PM
To: Joel Rojas
Subject: FW: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

I checked and the map is updated if you click the right boxes

From: Lopez, J. [mailto:J.Lopez@fire.lacounty.gov]
Sent: Tuesday, June 30, 2015 2:29 PM
To: Paul Christman
Cc: Joel Rojas
Subject: FW: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

Good Afternoon Paul,

FYI!

Best regards,
J. Lopez, Assistant Chief
Prevention Services Bureau
Forestry Division
(818) 890-5758

From: Tracy Bonano [mailto:TracyB@rpvca.gov]
Sent: Tuesday, June 30, 2015 10:50 AM
To: So Kim
Cc: Lopez, J.
Subject: FW: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

So~

Here's more information on the VHSZ map issue (see below)...

Thanks, AC Lopez!!!

Thanks!

Tracy Bonano
Senior Administrative Analyst & Emergency Services Coordinator

City of Rancho Palos Verdes
City Manager's Office
30940 Hawthorne Blvd.
Rancho Palos Verdes, CA 90275
tracyb@rpvca.gov www.rpvca.gov
P (310) 544-5209 F (310) 544-5291

Necessity print please...

From: Lopez, J. [mailto:J.Lopez@fire.lacounty.gov]
Sent: Monday, June 29, 2015 5:48 PM
To: Tracy Bonano; JAIKOWSKI, Marion; Walters, Laura; Johnson, Reggie; Wilson, Mike; McDuel, Bernard
Cc: Massey, Tommey Glenn
Subject: RE: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

Good Afternoon,

The latest FHSZ data for Los Angeles County can be viewed at
http://egis3.lacounty.gov/slv/?Viewer=GISViewer
1. Go to "Map Layers" on the left side of the screen and click on the down arrow for "Map Theme"
2. Look and select "Hazards"
3. Click on the Plus symbol (+) and expand the "Hazards" menu
4. Look for "Fire Hazards" and click on the Plus symbol (+) and expand the "Fire Hazards" menu
5. Select "Fire Hazard Severity Zones" and the FHSZs will appear on the map
6. If you would like to see the FRA, SRA and LRA, select "Fire Hazard Responsibility Areas"

I just checked the provided map and it is the same as the GIS FHSZ Viewer.

Best regards,
J. Lopez, Assistant Chief
Prevention Services Bureau
Forestry Division
(818) 890-5758

From: Tracy Bonano [mailto:TracyB@rpvca.gov]
Sent: Monday, June 29, 2015 5:32 PM
To: JAIKOWSKI, Marion; Walters, Laura; Johnson, Reggie; Lopez, J.; Wilson, Mike; McDuel, Bernard
Cc: Massey, Tommey Glenn
Subject: RE: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

Wow! Thanks to all for turning this around so quick!!! Greatly appreciated.

Tracy Bonano
Senior Administrative Analyst & Emergency Services Coordinator

City of Rancho Palos Verdes
City Manager's Office
30940 Hawthorne Blvd.
Rancho Palos Verdes, CA 90275
tracyb@rpvca.gov www.rpvca.gov
P (310) 544-5209 F (310) 544-5291

Necessity print please...

From: JAIKOWSKI, Marion [mailto:Marion.JAIKOWSKI@fire.lacounty.gov]
Sent: Monday, June 29, 2015 5:28 PM
To: Walters, Laura; Johnson, Reggie; Lopez, J.; Wilson, Mike; McDuel, Bernard
Cc: Massey, Tommey Glenn; Tracy Bonano
Subject: RE: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP

Good afternoon,

After reviewing the PDF attached and what we have on GIS it appears to be one in the same map. If you have further questions feel free to call our office.

Thank you,

Marion H. Jaikowski
Los Angeles County Fire Department
Fire Prevention Engineer
4475 El Segundo Blvd FS 161
Hawthorne, CA. 90250
W 310 263-2732
F 310 263-2735
Marion.Jaikowski@fire.lacounty.gov

From: Walters, Laura
Sent: Monday, June 29, 2015 4:57 PM
To: JAIKOWSKI, Marion; Johnson, Reggie; Lopez, J.; Wilson, Mike; McDuel, Bernard
Cc: Massey, Tommey Glenn

Subject: FW: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP
Importance: High

Good afternoon,

Please see below questions.

The City of Rancho Palos Verdes has requested a quick turnaround.

Thanks for any assistance,
Laura

Laura Walters
Community Services Liaison
L.A. County Fire Dept.
Central Region, Div. 1
Fire Station 158 (Gardena)
(310) 217-7074

From: Tracy Bonano [mailto:TracyB@rpvca.gov]
Sent: Monday, June 29, 2015 4:35 PM
To: Walters, Laura
Cc: So Kim
Subject: FW: VHSZ Conflict of Information in Rancho Palos Verdes - Need Response ASAP
Importance: High

Hi Laura!

I rarely ever use a "High Importance !" message but need to today. Would you please read So's message below and help us find out what's going on by EOD tomorrow? Perhaps the Hawthorne Station has an old map or maybe we do? I'm stumped because I thought we were positive the latest map went into our Haz. Mit. Plan finalized in August of 2014.

Thanks!

Tracy Bonano
Senior Administrative Analyst & Emergency Services Coordinator

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Necessity print please...

From: So Kim
Sent: Monday, June 29, 2015 4:17 PM
To: Tracy Bonano
Subject: VHSZ

Hi Tracy,
As we are both aware, the City Council adopted an urgency ordinance designating Very High Fire Hazard Severity Zones to RPV. The adopted Fire Hazard Severity Zone map (attached) was provided by the County of LA Fire Dept, which designated the entire City as VHFHSZ with exception to a small area east of Western Avenue. These maps were also confirmed as the correct ones when we were working on the Joint Hazards Mitigation Plan. Accordingly, said maps are also being incorporated into the Safety Element of the General Plan.

Last week, the Planning Commission looked at this map and questioned why it was different from the one being used for Fire Plan Check at the Hawthorne-Fire Prevention Division. A couple of the Commissioners are involved with developing properties and noted that in recent plan checks with LA County Fire, a different map was used. Would you please help me find out why there is a discrepancy?

Sincerely,
So Kim
Senior Planner
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WE ARE IN PROCESS OF SWITCHING TO A NEW WEB AND EMAIL DOMAIN. IF YOU HAVE ME IN YOUR CONTACTS, PLEASE CHANGE MY EMAIL FROM SOK@RPV.COM TO SOK@RPVCA.GOV.